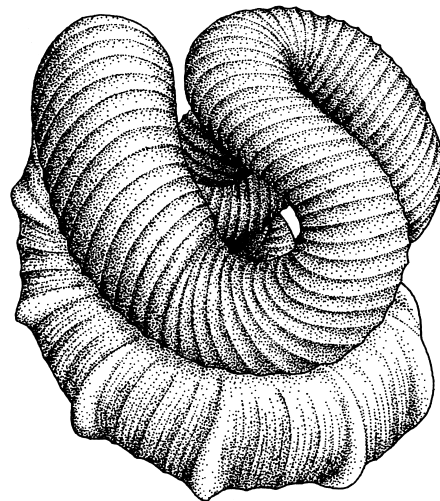


Special Papers - Number 39

The database of Japanese fossil type specimens described during the 20th Century

Edited by
Noriyuki Ikeya
Hiromichi Hirano
and
Kenshiro Ogasawara



Palaeontological Society of Japan

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The database of Japanese fossil type specimens described during the 20th Century

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Abstract. This first volume of the publication entitled “The database of Japanese fossil type specimens described during the 20th Century” includes some 5,000 type specimens of fossils belonging to 20 plant and animal groups described mainly by Japanese workers before the turn of the 21st Century. Since the pioneer work on the systematic description of Japanese fossils, first published in 1890, many new taxa have been proposed during the 20th Century, particularly in earnest before 1945 and during a time period of 1958-1963. Our current estimate indicates the total number of these Japanese type specimens to exceed more than 10,000. This first volume includes about one-half of those which are in the literature.

Each taxonomic entry is composed of such data items as: 1) name of taxon together with its author name and date of publication, 2) name of publication in which a new taxon name is proposed, 3) designated category of type specimens such as Holotype, Paratype, Syntype and so on, together with their registered repository number (an asterisk is attached to those specimens whose actual presence in a given repository was ascertained), 4) type localities, appended whenever possible with their latitudes and longitudes, 5) stratigraphic units in which a given taxon occurred, 6) geologic age or series, and 7) remarks given in parentheses to denote such information as the most commonly used name for a given taxon, invalid or synonymous status of a given taxon as judged by the present-day taxonomists, and so on.

The present volume deals with the following fossil groups: Calcareous Nannofossils, Dinoflagellates, Radiolaria, Cenozoic smaller benthic Foraminifera, Planktic Foraminifera, Fusulinoidea, Pteropoda and Heteropoda, Cenozoic Bivalvia, Paleozoic-Mesozoic Gastropoda, Monoplacophora and Hyolitha, Non-marine Mollusca, Conchostraca, Barnacles, Decapoda, Isopoda and Stomatopoda, Cenozoic Brachiopoda, Paleozoic-Mesozoic Bryozoa, Cenozoic Bryozoa, Crinoidea, Echinoidea and Holothuroidea, Conodonts, and Trace fossils.

The second volume which is in preparation will be published within the next few years and is planned to include such taxa as Phanerozoic Cephalopoda, Paleozoic-Mesozoic Bivalvia, Cenozoic Gastropoda and Scaphopoda, Ostracoda, Phanerozoic plant fossils and so on.

Key words: type specimen, database, 20th Century, holotype, paratype, Japan

Introduction

The Catalogue of type specimens of fossils whose repositories reside in Japan was compiled by S. HANZAWA, K. ASANO and F. TAKAI and was published in 1961 by the Palaeontological Society of Japan as a commemorative volume on the occasion of 25th anniversary of the foundation of the society. The taxa covered in this volume include: Plant (Plantae Non-Vasculares, Vasculares, Pollinia and Spores), Protozoa (Smaller Foraminifera, Larger Foraminifera and Radiolaria), Porifera, Coelenterata, Bryozoa, Brachio-

poda, Mollusca (Gastropoda, Scaphopoda, Pelecypoda and Cephalopoda), Annelida, Arthropoda (Trilobita, Crustacea and Insecta), Echinodermata (Crinoidea and Echinoidea), Vertebrata (Pisces, Amphibia and Reptilia, and Mammalia) and Problematica. Since then, no publication related to fossil type specimens has appeared with the exception of a few checklists covering certain restricted taxa.

Re-examination of type specimens in person constitutes the first step for a paleontologist to establish a reasonable

scheme of systematics. In spite of this great importance of type specimens in any given taxonomic study, the general management of these type specimens have remained quite inadequate in Japan. Therefore, Liaison Committee for Paleontology of the Science Council of Japan (LCP) has made it to be one of the important objectives of their activity to improve the safe-keeping and cataloguing works of the type specimens in Japanese repositories. During the last 15 years, some initiatives to review the present state of Japanese fossil type specimens have been made under the Monbusho (Ministry of Education) projects of Grant-in-Aid for scientific research by such LCP members as I. HAYAMI (1986-1988), K. MORI (1994-1996) and K. MORI (1997). Through these investigations, the LCP and the Palaeontological Society of Japan made a strong appeal on the significance and social importance of these type specimens. Various problems relating to the general management of scientific materials, including fossil specimens, were also discussed at the LCP meetings during the 15th term chaired by I. HAYAMI, 16th term chaired by K. MORI and 17th term chaired by N. IKEYA, when there was a move by the Japanese Government to establish a university museum in certain major national universities with the aim of boosting natural science education in schools and universities.

As an outcome of the discussion held at these meeting, members of the LCP's 17th term decided at the end of 1997 to compile a database of information on the fossil type specimens stored in Japan in consonant with the philosophy spelled out in both codes of the Botanical and Zoological Nomenclatures. These codes explicitly state that "A holotype or lectotype should be deposited in a museum or other institution where it will be safely preserved and will be accessible for purposes of research." Soon after the decision was made, the LCP on March 8, 1999, appealed for assistance of those taxonomists who specialized in various taxa or fossil group and those who responded are listed in the content of this publication. In June of 1999, the LCP also approached the Palaeontological Society of Japan to solicit their assistance toward publishing the present database, and the society authorized the formation of a working group for the publication consisting of three persons, N. IKEYA, Chairperson, H. HIRANO and K. OGASAWARA, who later assumed the editorship of the present publication.

This first volume of the publication entitled "The database of Japanese fossil type specimens described during the 20th Century" contains about 5,000 type specimens of fossils belonging to 20 plant and animal groups which were described mainly by Japanese workers before the turn

of the 21st Century and which were also reported to be deposited at institutions in Japan. Since the pioneer works on the systematic description of Japanese fossils published in 1890, many new taxa were described during the 20th Century. The total number of the type specimens archived in Japan during that time period may be estimated to exceed more than 10,000.

Each taxonomic entry in the database comprises the following items as given in descending order:

- 1) Scientific name of a taxon with its author name and date of publication.
- 2) Reference in which a taxon was first proposed, including such data as volume and page, plate and figure numbers.
- 3) Category of type specimens such as Holotype, Paratype, Synthype and so on, with registered repository (depository) numbers. An asterisk is appended to those specimens whose physical presence was ascertained at a given repository.
- 4) Type localities: Name of cities, towns and villages both in the way they appeared in the original publication and in the way they are presently known. As much as possible, latitude and longitude are indicated for the localities.
- 5) Stratigraphic unit, such as formation, member and group, from which fossil taxa were recovered.
- 6) Age of fossil taxa as expressed either by geologic age terms (Epoch and Age) or chronostratigraphic terms (Series and Stage).
- 7) Comments are given to denote the name currently applied to a particular taxon by contemporary workers and also added are some remarks necessary from a systematic viewpoint. In addition, every remark and correct items made by the authors of the present database are printed in brackets.

The taxa compiled in the present volume include: Calcareous Nannofossils, Dinoflagellate, Radiolaria, Cenozoic smaller benthic Foraminifera, Planktic Foraminifera, Fusulinoidea, Pteropoda and Heteropoda, Cenozoic Bivalvia, Paleozoic-Mesozoic Gastropoda, Monoplacophora and Hyolitha, Non-marine Mollusca, Conchostraca, Barnacles, Decapoda, Isopoda and Stomatopoda, Cenozoic Brachiopoda, Paleozoic-Mesozoic Bryozoa, Cenozoic Bryozoa, Crinoidea, Echinoidea and Holothuroidea, Conodonts, and Trace fossils.

The second volume which is in preparation will include the remaining taxa such as Phanerozoic Cephalopoda, Paleozoic-Mesozoic Bivalvia, Cenozoic Gastropoda and Scaphopoda, Ostracoda, Phanerozoic plant fossils and so on.

Acknowledgments

The editors wish to express their sincere thanks to the Science Council of Japan for their assistance in the production of this publication and also to the Council members of the Palaeontological Society of Japan for their invaluable assistance toward editing the manuscript as well as bringing it into the present published form. Sincere thanks are extended to Dr. Tsunemasa SAITO, member of the Science Council of Japan for his valuable suggestion in the editorial works and rephrasing the early draft. Sincere thanks are also extended to Dr. Kenichi OHKUSHI and Muhammad Yousof WARRAICH, University of Tsukuba who assisted in the editorial works of the manuscript.

Abbreviation for repository of type specimens

AD...Omama Town Museum, Yamada-gun, Omama-machi, Gumma
 ASM...Akiyoshidai Museum of Natural History, Shuho-cho, Yamaguchi
 ATJRMN (=GK, JC, JCD, KCD, **KUGM**, KURS)...Department of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto
 BM...The Natural History Museum, London, United Kingdom
 BOITO...Laboratory of Biology, Faculty of Engineering, Osaka Institute of Technology, Osaka
 C...Naturhistorisches Museum, Basel, Switzerland
 CBM...Natural History Museum and Institute, Chiba
 CESN...Laboratory of Coastal Environmental Sciences, Faculty of Fisheries, Nagasaki University, Nagasaki
 CF-C...Division of Paleontology, U. S. National Museum, Washington
 CM (=GITU, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...Geological Institute, Faculty of Science, University of Tokyo, Tokyo
 DESC...Department of Earth Sciences, Faculty of Science, Chiba University, Chiba
 DESS (=DGSU)...Department of Earth Science, Shimane University, Shimane
 DGBU...Department of Geology, Busan (Pusan) National University, Busan (Pusan), Korea
 DGS...Department of Geology, Faculty of Education, Tohoku University, Sendai (type specimens of DGS are now preserved in the Institute of Geology and Paleontology, Faculty of Science, Tohoku University, Sendai (IGPS))
 DGSU (=DGSS)...Department of Geology, Faculty of Science, Shimane University, Shimane
 D2 (=HMNH)...Division of Earth Sciences, Museum of Nature and Human Activities, Hyogo
 EEG...Institute of Geology, Faculty of Education, Ehime University, Matsuyama
 ERI...Earthquake Research Institute, Tokyo University, Tokyo (Some specimens described by Otuka (1934, 1936, 1937 and so on) shifted to University Museum, University of Tokyo (**UMUT**))
 ESK...Institute of Earth Science, Faculty of Science, Kagoshima University, Kagoshima
 ESN...Department of Earth Science, Faculty of Science, Nagoya University, Nagoya
 FG (probably=TGTU, TGWU)...Department of Geology, Fukuoka University, Fukuoka
 FPMN...Fukui Prefectural Museum of Natural History, Fukui
 G...Institute of Oceanography, the University of Tokyo, Tokyo
 GDLAKZ...Department of Geology, Faculty of Liberal Arts, Kanazawa University, Kanazawa
 GEN...Department of Geology, Faculty of Education, Nagasaki University, Nagasaki
 GF...Department of Geology, Fukuoka University of Education, Fukuoka
 GF.D...Department of Earth System Science, Faculty of Science, Fukuoka University, Fukuoka
 GH (=GMH, HU, UH, UHR)...Department of Geology and Mineralogy, Faculty of Science, Hokkaido University, Sapporo
 GITU (=CM, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...Geological Institute, Faculty of Science, University of Tokyo, Tokyo
 GIUM...Geological Institute, Faculty of Arts and Sciences, Ibaraki University, Mito
 GIYU (=YNUC)...Institute of Geology, Faculty of Education, Yokohama National University, Yokohama
 GK (=ATJRMN, JC, JCD, KCD, **KUGM**, KURS)...Geological Institute, College of Science, Kyoto University, Kyoto
 GK...Department of Geology, Faculty of Education, Kumamoto University, Kumamoto
 GKD (=GK, D, GKL, GKM)...Department of Geology, Kyushu University, Fukuoka
 GKL (=GK, D, GKL, GKM)...Department of Geology, Faculty of Science, Kyushu University, Fukuoka

GKM (=GK, D, GKD, GKL)...Ditto.

GKZ...Department of Geology, Faculty of Science, Kanazawa University, Kanazawa

GLR...Geological Laboratory, St. Paul's (Rikkyo) University, Tokyo

GMH (=GH, HU, UH, UHR)...Institute of Geology and Mineralogy, Faculty of Science, Hokkaido University, Sapporo

GS (=IGPS)...Institute of Geology and Paleontology, Faculty of Science, Tohoku University, Sendai

GS...Department of Geology, Saga University, Saga

GSJ (=GST)...Geological Survey of Japan, Tsukuba (formerly Kawasaki)

GST (=GSJ)...Geological Survey of Japan, Kawasaki

GT (=CM, GITU, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...Geological Institute, Faculty of Science, Tokyo University, Tokyo

HMNH (D2)...Hyogo Museum of Nature and Human Activities, Mita

HU (=GH, UH, UHR)...Department of Geology and Mineralogy, Hokkaido University, Sapporo

HUTE...Geoscience Institute, Hyogo University of Teacher Education, Yashiro-cho, Hyogo

IAGG...Institute of Astronomy, Geophysics and Geology, Osaka University of Liberal Arts and Education, Kashihara

IES...Tokyo Gakugei University, Koganei

IGMH (=IGMSH, IGSH, TNM)...Institute of Geology and Mineralogy, Hiroshima University, Higashihiroshima

IGMSH...Ditto.

IGPS (=GS)...Institute of Geology and Paleontology, Faculty of Science, Tohoku University, Sendai

IGSH (=IGMH, IGMSH, TNM)...Institute of Geology and Mineralogy, Hiroshima University, Higashihiroshima

IGUS...Institute of Geology, University of Shizuoka, Shizuoka

IGUT...Institute of Geoscience, University of Tsukuba, Tsukuba

IPMM...Iwate Prefectural Museum, Morioka

ISBEV...Geological Collections, the Board of Education, Shiramine-mura, Ishikawa-gun, Ishikawa

IW...Department of Earth Sciences, Saitama University, Urawa

JC (=ATJRMN, GK, JCD, KCD, **KUGM**)...Department of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto

JCD (=ATJRMN, GK, JC, KCD, **KUGM**, KURS)...Department of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto

JPF (=GK, JC, JCD, KUGM, KURS)...Institute of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto

KC...School of Informatics and Sciences (formerly College of General Education), Nagoya University, Nagoya

KMNH...Kitakyushu Museum and Institute of Natural History, Yahata, Kitakyushu

KMSP...Department of Geology, Faculty of Science, Kumamoto University, Kumamoto

KU (=GK, GK, D, GKL, GKM)...Kyushu University, Fukuoka

KUE...Department of Earth Science, Kyoto University of Education, Kyoto

KUGM (=ATJRMN, GK, JC, JCD, KCD, KURS)...Department of Geology and Mineralogy, Graduate School of Science, Kyoto University, Kyoto

KURS (=ATJRMN, GK, JC, JCD, JPF, **KUGM**)...Department of Geology and Mineralogy, Faculty of Science, Kyoto University, Kyoto

LMMN...Laboratory of Microfossil's study of Matsumoto, Nagano

MCM...Mikasa City Museum, Mikasa, Hokkaido

MEMIT...Mining Engineering Department, Muroran Institute of Technology, Muroran

MFM...Mizunami Fossil Museum, Mizunami

National Natuurhistorisch Museum...National Museum of Natural History, Leiden, The Netherlands

NFH...Nomura Foraminiferal Laboratory, Shimane University, Matsue

NHM...The National History Museum, London, United Kingdom

NIGP...Nanjing Institute of Geology and Palaeontology, Nanjing, P. R. China

NMNS...National Museum of Natural Science, Taichung, Taiwan

NS (=CM, GITU, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...University Museum, University of Tokyo, Tokyo

NSM (=NSMT-P)...National Science Museum, Tokyo

NSMT-P (=NSM)...Ditto.

NSR (=CM, TK, **UMUT**, UTCM, UTCM-Kf, NS)...University Museum, University of Tokyo, Tokyo

NTUM...Department of Geology, National Taiwan University, Taipei, Taiwan

NU...Department of Geology, Faculty of Science, Niigata University, Niigata

NUETEM...Department of Earth Sciences, Nara University of Education, Nara

OCU...Osaka City University, Osaka
 OMN...Osaka Municipal Museum of Natural History, Osaka
 OMNH...Osaka Museum of Natural History, Osaka
 ON...(probably: Lamont-Doherty Geological Observatory of Columbia University, Palisades, New York, USA)
 PF...Division of Geoscience, Osaka City University, Osaka
 RINT...Research Institute of Natural Resources, Tokyo (dissolved and finished related journal in 1971; specimens were partly shifted and registered in NSM)
 SHM...Saito Ho-on Kai Museum of Natural History (formerly Saito Ho-on Kai Museum), Sendai
 SM...Sado Museum, Sawata-machi, Niigata
 SU...Department of Geology, Faculty of Education, Shinshu University, Nagano
 TGTU (probably=FG, TGWU)...Department of Geology, Fukuoka University of Education, Fukuoka
 TGU (=TGUFU)...Department of Astronomy and Earth Sciences, Tokyo Gakugei University, Koganei (Tokyo Gakugei Daigaku)
 TGWU (probably=FG, TGTU)...Department of Geology, Fukuoka University of Education, Fukuoka
 TGUFU (=TGU)...Ditto.
 TK (=CM, GITU, TK, **UMUT**, UTCM, UTCM-Kf)...Geological Institute, Faculty of Science, University of Tokyo, Tokyo
TKD (=TUEG, TUE-G-Km)...Department of Geology, Faculty of Science, Tokyo Kyoiku Daigaku (Tokyo University of Education), Tokyo (re-organized the Institute of Geoscience, University of Tsukuba, Tsukuba (IGUT))
 TKT...Institute of Geological Science, College of General Education, Osaka University, Toyonaka
 TMNH...Toyohashi Museum of Natural History, Toyohashi
 TNM (=IGMH, IGMSH, IGSH)...Department of Geology and Mineralogy, Faculty of Science, Hiroshima University, Hiroshima (now Higashihiroshima; East Hiroshima City)
 TOCCN...Technical Research Center, Teikoku Oil Co., Ltd., Tokyo
 TUEG (=TKD, TUE-G-Km)...Department of Geology, Faculty of Science, Tokyo Kyoiku Daigaku (Tokyo University of Education), Tokyo (re-organized the Institute of Geoscience, University of Tsukuba, Tsukuba (IGUT))
 TUE-G-Km (=TKD, TUEG)...Ditto.
 UCB...University Claude-Bernard Lyon 1, Collection in the Department of Geological Sciences
 UH (=GH, HU, UH, UHR)...Department of Geology and Mineralogy, Faculty of Science, Hokkaido University, Sapporo
 UHR (=GH, HU, UH)...Department of Geology and Mineralogy, Hokkaido University, Sapporo
UMUT (=CM, GITU, TK, UTCM, UTCM-Kf, NS, NSR)...University Museum, University of Tokyo, Tokyo
 USBF...United States Bureau of Fisheries
 USGS...United States Geological Survey
 USNM (=U. S. N. M)...United State National Museum, Washington, D. C.
 UTCM (=CM, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...Geological Institute, Faculty of Science, University of Tokyo, Tokyo
 UTCM-Kf (=CM, TK, **UMUT**, UTCM, UTCM-Kf, NS, NSR)...Ditto
 YCM (=YCMGP, YCM-GP)...Yokosuka City Museum, Yokosuka
 YCMGP...Yokosuka City Museum, Yokosuka
 YGUES...Department of Earth Sciences, Faculty of Science, Yamagata University, Yamagata
 YNUC (=GIYU)...Department of Science Education, Faculty of Education and Human Sciences, Yokohama National University, Yokohama

Calcareous Nannofossils

Tokiyuki Sato

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Alisphaera unicornis Okada & McIntyre, 1977

Micropaleontology, vol. 23, no. 1, p. 18, pl. 6, figs. 7-8
Holotype: Negative ON-11
Pacific Ocean (14 °40'S, 155 °08'W)
Living
Recent

Calciosolenia? bimurata Okada & McIntyre, 1977

Micropaleontology, vol. 23, no. 1, p. 18-19, pl. 7, fig. 1
Holotype: Negative ON-12
Pacific Ocean (10 °03'S, 154 °55'W)
Living
Recent

Coccolithus streckeri Takayama & Sato, 1987

Init. Repts. DSDP, vol. 94, p. 690, pl. 1, figs. 4a-b, pl. 2, figs. 1-10
Holotype: TOCCN 3538 (1)
North Atlantic Ocean, DSDP Leg 94, Hole 608(42 °50.21'N, 23 °05.25'W)
Sample 94-608-5-5, 46-47 cm
latest Pliocene

Crassidiscus backmanii Okada, 1990

Proc. ODP, Sci. Results, vol. 115, p. 151, pl. 1, figs. 15, 16, pl. 3, figs. 5-9
Holotype: YGUES 1001
Tropical Indian Ocean (03 °54.9'S, 60 °33.1'E)
Sample 115-709C-23X-1, 40-41 cm
late Oligocene

Crenalithus parvulus Okada & McIntyre, 1977

Micropaleontology, vol. 23, no. 1, p. 6, pl. 2, figs. 1, 2
Holotype: Negative ON-3
Pacific Ocean (10 °00'N, 155 °05'W)
Living
Recent

Crenalithu parvulus tecticentrum Okada & McIntyre, 1977

Micropaleontology, vol. 23, no. 1, p. 7, pl. 2, figs. 3, 4, 7
Holotype: Negative ON-4
Pacific Ocean (10 °00'N, 155 °05'W)
Living
Recent

Crenalithus punctatus Okada & McIntyre, 1977

Micropaleontology, vol. 23, no.1, p.7-8, pl. 2, figs. 8, 9
Holotype: Negative ON-6
Pacific Ocean (10 °00'N, 155 °05'W)
Living
Recent

Cricosphaera quadrilaminata Okada & McIntyre, 1977

Micropaleontology, vol. 23, no.1, p. 15, pl. 6, figs. 5-6
Holotype: Negative ON-10
Pacific Ocean (10 °03'S, 154 °55'W)
Living
Recent

Discoaster gladius Nishida, 1969

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 75, p. 145-146, pl. 17, fig. 4
Holotype: NC-13R-30
Nagatesaki near Cape Suzu in the northern part of Noto Peninsula, Suzu, Ishikawa Prefecture
Akagami Shale, Suzu Formation
middle Miocene

Discoaster japonicus Nishida, 1969

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 75, p. 146, pl. 17, fig. 5
Holotype: NC-4R-111
Hojiuji, Uwada-cho, Suzu, Ishikawa Prefecture
Hojiuji diatomaceous mudstone, Suzu Formation
late early Miocene

Discoaster notoensis Nishida, 1969

Trans. Proc. Palaeont. Soc. Japan, N.S., no.75, p. 147, pl. 17, fig. 6
Holotype: NC-13R-36
Nagatesaki near Cape Suzu in the northern part of Noto Peninsula, Suzu, Ishikawa Prefecture
Akagami Shale, Suzu Formation
middle Miocene

Discoaster trifucatus Nishida, 1969

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 75, p. 148, pl. 16, fig. 4
Holotype: NC-9S
Nagatesaki near Cape Suzu in the northern part of Noto Peninsula, Suzu, Ishikawa Prefecture
Ida diatomaceous mudstone, Suzu Formation
middle Miocene

Discolithina japonica Takayama, 1967

Jahrb. Geol. Bundesanst. (Wien), vol. 110, p. 189-190, pl. 9, pl. 10, figs. 1, 2a-d.
Holotype: IGPS no. 75144 (slide) and no. 2600/65 (Electron micrograph)

An exposure along the Tonegawa River, near the Shishiba railroad station (Narita Line), Choshi, Chiba Prefecture
Iioka Formation
middle Pleistocene

***Emiliania huxleyi corona* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no.1, p. 9, pl.1, figs. 1-4, 6, 7
Holotype: Negative ON-1
Pacific Ocean (35 °00'N, 154 °57'W)
Living
Recent

***Florisphaera profunda* Okada & Honjo, 1973**

Deep-Sea Research, vol. 20, p. 373-374, pl. 2, nos. 4, 5
Holotype: HU-1 (Film)
Central Pacific
Living
Recent

***Florisphaera profunda* Okada & Honjo var. *elongata* Okada & McIntyre, 1980**

INA News letter vol. 2, no. 2, p. 81
Holotype: Okada and Honjo, 1973, pl. 2, no. 6
Central Pacific
Living
Recent

***Gephyrocapsa crassipons* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 10, pl. 2, figs. 5, 6
Holotype: Negative ON-5
Pacific Ocean (2 °27'N, 154 °57'W)
Living
Recent

***Helicosphaera omanica* Sato, Kameo & Takayama, 1991**

Proc. ODP, Sci. Results vol. 117, p. 50, pl. 1, figs. 1a-3b
Holotype: TOCCN 16952 (1)
Arabian Sea, Indian Ocean, ODP Leg 117, Hole 721A (16 ° 40.636'N, 59 °51.879'E) Sample 117-721A-4H-3, 115-117 cm
late Pliocene to early Pleistocene

***Helicosphaera pavementum* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 14, pl. 4, figs. 6-7
Holotype: Negative ON-9
Atlantic Ocean (44 °02'N, 40 °55'W)
Living
Recent

***Helladosphaera fastigata* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 29, pl. 11, figs. 8, 9
Holotype: Negative ON-22
Pacific Ocean (00 °01'S, 141 °59'E)
Living
Recent

***Oolithotus fragilis cavum* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 11-12, pl. 4, figs. 4, 5
Holotype: Negative ON-8
Pacific Ocean (10 °03'S, 154 °55'W)
Living
Recent

***Pseudococcolithus biporosus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 315, pl. 31, figs. 12-17
Holotype: pl. 31, fig.16
Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus deltoides* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 313-314, pl. 30, fig. 22
Holotype: pl. 30, Fig.22
Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus fusiformis* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 313, pl. 30, figs. 11-16
Holotype: pl. 30, fig. 12
Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus nodulosus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 315, pl. 31, figs. 18-26
Holotype: pl. 31, fig. 18
Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus oblongus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 314-315, pl. 31, figs. 3-11
Holotype: pl. 31, fig. 3
Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus orbicularis* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 313, pl. 30,

figs. 17-21

Holotype: pl. 30, fig. 20

Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus oviformis* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 314, pl. 31, fig. 2

Holotype: pl. 31, fig. 2

Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus reticulatus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 312, pl. 30, figs. 1-4

Holotype: pl. 30, fig. 1

Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus rotundatus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 314, pl. 31, fig. 1

Holotype: pl. 31, fig. 1

Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Pseudococcolithus striatus* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 71, p. 313, pl. 30, figs. 5-10

Holotype: pl. 30, fig. 6

Chojabarusaki Cape, Motomurabure, Moroyoshi, Ashibe-Cho, Iki-Gun, Nagasaki Prefecture
Chojabaru Formation
Miocene

***Reticulofenestra ampla* Sato, Kameo & Takayama, 1991**

Proc. ODP, Sci. Results vol. 117, p. 50, pl. 1, figs. 4a-6b

Holotype: TOCCN 16954 (1)

North Atlantic Ocean, DSDP Leg 94, Hole 607 (41 °00.07' N, 32 °57.44' W) Sample 94-607-13HCC
earliest late Pliocene

***Reticulofenestra asanoi* Sato & Takayama, 1992**

Centenary of Japanese Micropaleontology, K. Ishizaki and T. Saito eds., p. 458-460, figs. 3-7 ~ 13

Holotype: TOCCN 16950 (4)

Just above the tephra bed U6 of the Umegase Formation exposed in the "Yoro Keikoku" of Yoro Gawa River, Ishigami, Boso Peninsula, Chiba Prefecture
Umegase Formation
middle Pleistocene (1.16-0.85Ma)

***Reticulofenestra japonica* Nishida, 1979**

Bull. Nara Univ. Educ., vol. 28, no. 2, p. 105, pl. 1, figs. 1-3

Holotype: pl. 17, fig. 2 in Nishida (1971), NUETEM-KC18R-1
A quarry of Hane Industry Co., Nobori, Hane, Muroto, Kochi Prefecture

Nobori Formation
early late Pliocene (2.75-3.66Ma)

***Reticulofenestra pacifica* Nishida, 1979**

Bull. Nara Univ. Educ., vol.28, no. 2, p. 106, pl. 1, figs. 4-6

Holotype: pl. 1, fig. 4 (NUETEM-KI15R-15)

Sadeku, Kikai-cho, Oshima-gun, Kagoshima Prefecture
Somachi Formation
late Pliocene

***Syracosphaera ampliara* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 19-20, pl. 7, figs. 9-10

Holotype: Negative ON-13

Atlantic Ocean (37 °59'N, 70 °58'W)

Living
Recent

***Syracosphaera borealis* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 20, pl. 10, fig. 8

Holotype: Negative ON-20

Atlantic Ocean (52 °48'N, 35 °29'W)

Living
Recent

***Syracosphaera epigrosa* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 20-21, pl. 7, figs. 5-6

Holotype: Negative ON-14

Pacific Ocean (38 °54'N, 141 °54'E)

Living
Recent

***Syracosphaera exigua* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 21, pl. 8, figs. 10-11

Holotype: Negative ON-15

Pacific Ocean (13 °30'N, 155 °00'W)

Living
Recent

***Syracosphaera corrugis* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 21-22, pl. 8, figs. 3, 6

Holotype: Negative ON-18

Pacific Ocean (38 °54'N, 141 °54'E)

Living

Recent

***Syracosphaera orbiculus* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 25, pl. 9, figs. 4-6

Holotype: Negative ON-16

Atlantic Ocean (38 °03'N, 75 °57'W)

Living

Recent

***Syracosphaera protrudens* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 26-27, pl. 10, fig. 3

Holotype: Negative ON-19

Atlantic Ocean (35 °06'N, 47 °54'W)

Living

Recent

***Syracosphaera rotula* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 27, pl. 9, figs. 9, 12

Holotype: Negative ON-17

Pacific Ocean (34 °00'N, 141 °00'E)

Living

Recent

***Umbilicosphaera angustiforamen* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 12, pl. 3, figs. 10, 11

Holotype: Negative ON-7

Atlantic Ocean (44 °01'N, 40 °55'W)

Living

Recent

***Umbilicosphaera maceria* Okada & McIntyre, 1977**

Micropaleontology, vol. 23, no. 1, p. 12-13, pl. 1, fig. 8

Holotype: Negative ON-2

Pacific Ocean (2 °00'N, 155 °02'W)

Living

Recent

Dinoflagellates

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Niigata University, Niigata 950-2181, Japan²Laboratory of Coastal Environmental Sciences,
Faculty of Fisheries, Nagasaki University,
Nagasaki 852-8521, Japan***Achomosphaera callosa* Matsuoka, 1983**Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15,
text-figs. 1-22Holotype: CESN KMD slide NNS30-2 (10.8/130.4); Matsuoka,
1983b, pl. 11, figs. 6a-c, text-fig. 15Locality NNS-30, Hiroya, Kamikawa-mura, Higashi-kanbara-
gun, Niigata Prefecture (37 °36.5' N, 139 °25.7' E)Tokonami Formation (correlative to the Nishiyama Formation)
Pliocene or younger***Apteodinium vescum* Matsuoka, 1983**Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15,
text-figs. 1-22Holotype: CESN KMD slide NNA3-5 (16.3/127.2); Matsuoka,
1983b, pl. 5, fig. 7; Jan du Chene et al., 1986, pl. 12, fig. 7Locality NNA-3, Matsuoka, Shibata City, Niigata Prefecture
(37 °53.6' N, 139 °19.9' E)Shimoseki Formation (correlative to the Nanatani Formation)
Late Early to Middle Miocene***(Apteodinium ? vescum Matsuoka, 1983*** by Lucas-Clarke
(1987, p. 180) as followed by Williams et al. (1998))***Ascostomocystis granosa* Matsuoka, 1983**Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15,
text-figs. 1-22Holotype: CESN KMD slide NTS1-3 (7.6/148.8); Matsuoka,
1983b, pl. 8, figs. 5a-b; Matsuoka and Head, 1992, pl. 1, figs.
12-15Locality NTS-1, 0.8 km north of Mt. Takatsubo, Arakawa-cho,
Iwafune-gun, Niigata Prefecture (38 °5.0' N, 139 °28.8' E)Akadani Formation (correlative to the Nanatani Formation)
Late Early to Middle Miocene***(Cyclopsella granosa (Matsuoka, 1983) Head et al., 1992.***
This palynomorph species belongs to Group **Acritarcha** **Evitt,**
1963, not to dinoflagellate, according to the original description
(Matsuoka, 1983, p. 141) and to Matsuoka and Head (1992, p.
170). The prefix of the slide and sample number for the holotype
is inconsistently specified as "NST" in the text and in the plate
caption (Matsuoka, 1983, p. 141 and p. 150))***Batiacasphaera minuta* (Matsuoka, 1983) Matsuoka and**
Head, 1992 see ***Tectatodinium minutum* Matsuoka, 1983*****Bellatodinium hokkaidoanum* Kurita and Matsuoka, 1994**Review of Palaeobotany and Palynology, vol. 84, p. 129-153,
pls. I-II, text-figs. 1-7Holotype: NSM KR904-003/Unsieved-1, R1 (103.0/14.2), slide
deposit number MPC-4598; Kurita and Matsuoka, 1994, pl. 1,
fig. 1Locality KR904-003, Futamata-sawa tributary of Chikubetsu-
River, Haboro-cho, Tomamae-gun, Rumoi Province, Hokkaido
(44 °24.0' N, 141 °54.3' E)

Lower part of the Sankebetsu Formation

Late Middle? to Late Eocene

(Type specimens temporarily stored at the JAPEX Research
Center, Chiba, Japan)***Brigantedinium asymmetricum* Matsuoka, 1987**Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1,
p. 35-123, pls. 1-19, text-figs. 1-9Holotype: CESN slide no. AK2-2 (100.4/44.7); Matsuoka, 1987,
pl. 5, figs. 10-11Locality AK-2, Akkeshi Bay, Kushiro Province, Hokkaido,
Japan. (43 °2' N, 144 °48' E)

Surface sediment

Recent

(Williams et al. (1998) stated that this name was not validly
published in Matsuoka (1987) because the genus
Brigantedinium was not validly published at that time)***Brigantedinium grande* Matsuoka, 1987**Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1,
p. 35-123, pls. 1-19, text-figs. 1-9Holotype: CESN slide no. SR8-2 (15.2/143.0); Matsuoka, 1987,
pl. 5, figs. 1-2Locality SR-8, Lake Saroma-ko, Abashiri Province, Hokkaido
(44 °1' N, 143 °52' E)

Surface sediment

Recent

(Williams et al. (1998) stated that this name was not validly
published in Matsuoka (1987) because the genus
Brigantedinium was not validly published at that time)***Brigantedinium irregulare* Matsuoka, 1987**Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1,
p. 35-123, pls. 1-19, text-figs. 1-9Holotype: CESN slide no. AK2-2 (85.5/31.7); Matsuoka, 1987,
pl. 5, figs. 15-16Locality AK-2, Akkeshi Bay, Kushiro Province, Hokkaido (43 °
2' N, 144 °48' E)

Surface sediment

Recent

(Williams et al. (1998) stated that this name was not validly
published in Matsuoka (1987) because the genus
Brigantedinium was not validly published at that time. This
cyst species is equivalent to a motile form ***Protoperidinium***
denticulatum (Gran and Braarud, 1935) **Balech, 1974,**

according to Matsuoka (1987, p. 57))

***Capillicysta fusca* Matsuoka and Bujak in Matsuoka et al., 1987**

Micropaleontology, vol. 33, p. 214-229, pls. 1-2, text-figs. 1-9
 Holotype: CESN slide SZ561204-R2; Matsuoka and Bujak in Matsuoka et al., 1987, pl. 1, figs. 1,2; Head, 1994b, pl. 2, figs. 7-9; Fensome et al., 1995, Figs. 1-2-p. 1493.
 Locality SZ561204, Unosaki Coast, Onnagawa, Oga Peninsula, Oga City, Akita Prefecture (39 °51.9' N, 139 °50.5' E)
 Upper part of the Onnagawa Formation
 Late Middle to early Late Miocene

***Corrudinium harlandii* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22
 Holotype: CESN KMD slide NNS7-3 (14.2/138.3); Matsuoka, 1983b, pl. 4, figs. 6a-c, text-fig. 11; Jan du Chene et al., 1986, pl. 17, figs. 15-17.
 Locality NNS-7, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 °29.2' N, 138 °40.8' E)
 Nishiyama Formation
 Pliocene to earliest Pleistocene

***Cribroperidinium ? granomembraceum* (Matsuoka, 1983) Lentin and Williams, 1985 see *Millioudodinium granomembraceum* Matsuoka, 1983**

***Cyclopsiella granosa* (Matsuoka, 1983) Head et al., 1992 see *Ascostomocystis granosa* Matsuoka, 1983**

***Damassadinium heterospinosum* (Matsuoka, 1983) Fensome et al., 1993 see *Danea heterospinosa* Matsuoka, 1983**

***Danea heterospinosa* Matsuoka, 1983**

Review of Palaeobotany and Palynology, vol. 40, p. 115-126, pls. I-II, text-figs. 1-4
 Holotype: CESN Slide no. NAG33-1 (7uIII); Matsuoka, 1983c, pl. 1, figs. 1a-f, text-fig. 2
 River Kali Puru, Kalisongo near Nanggulan, about 20 km west of Yogyakarta, central Java, Indonesia. (8 °2.3' S, 110 °10.3' E)
 Nanggulan Formation
 Middle Eocene
 (*Damassadinium heterospinosum* (Matsuoka, 1983) Fensome et al., 1993. Williams et al. (1998) stated that the species name *Danea heterospinosa* was validly published even though the generic name *Danea* is illegitimate, following I.C.B.N. Article 55.1. The age of the holotype falls within a range represented by the CP13 Zone to CP14 Zone of Okada and Bukry (1980))

***Diphyes latiusculus* Matsuoka, 1974**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 94, p. 319-340, pls. 44-46, text-fig. 1-3, tab. 1
 Holotype: CESN slide KM-1162 (16.3/8.4); Matsuoka, 1974, pl.

44, figs. 6a-b.

Locality 1, level of Sample 5, Fujiwara-cho, Nara City, Nara Prefecture (34 °38.9' N, 135 °51.1' E)
 Toyoda Formation, Fujiwara Group
 Early to Middle Miocene
 (Orthographic correction: *Diphyes latiusculum* Matsuoka, 1974)

***Distatodinium fusiforme* (Matsuoka, 1974) Bujak and Matsuoka, 1986 see *Tanyosphaeridium fusiform* Matsuoka, 1974**

***Enculifera carinata* Matsuoka, Kobayashi and Gaines, 1990**

Bull. Plankt. Soc. Japan, vol. 37, no. 2, p. 127-143, pls. I-III, figs. 1-5
 Holotype: Matsuoka, Kobayashi and Gaines, 1990, Fig. 3 (icnotype)
 Gokasho Bay, Mie Prefecture (33 °40' N, 136 °40' E)
 Surface sediment
 Recent
 (This species was established on the basis of living cysts as well as of motile cells incubated and cultured out from the cysts. For the nomenclatural type, only an illustration, expressed as icnotype in the original text, was designated as the holotype (I.C.B.N. Article 8.1))

***Enculifera imariense* Kobayashi and Matsuoka, 1995**

Jour. Phycol., vol. 31, p. 147-152, figs. 1-23, tab. 1
 Holotype: Kobayashi and Matsuoka, 1995, Figs. 3, 16 (icnotype)
 Imari Bay, Saga Prefecture, Kyushu (33 °21.9' N, 129 °46.2' E)
 Surface sediment
 Recent
 (This species was established on the basis of living cysts as well as of motile cells incubated and cultured out from the cysts. For the nomenclatural type, only an illustration, expressed as icnotype in the original text, was designated as the holotype (I.C.B.N. Article 8.1))

***Exochosphaeridium brevispinosum* Matsuoka, 1984**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 134, p. 374-387, pls. 71-74, text-fig. 1
 Holotype: CESN slide NG33-2 (6gI); Matsuoka, 1984, pl. 72, figs. 7a-b
 River Kali Puru, Kalisongo near Nanggulan, about 20 km west of Yogyakarta, central Java, Indonesia (8 °12.3' S, 110 °10.3' E)
 Nanggulan Formation
 Middle Eocene
 (The age of the holotype falls within a range represented by the CP13 Zone to CP14 Zone of Okada and Bukry (1980))

***Exochosphaeridium reticulatum* Matsuoka, 1984**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 134, p. 374-387, pls.

71-74, text-fig. 1

Holotype: CESN slide NG43-2 (1gIV); Matsuoka, 1984, pl. 72, figs. 1a-b

River Kali Puru, Kalisongo near Nanggulan, about 20 km west of Yogyakarta, central Java, Indonesia. (8 °12.3' S, 110 °10.3' E)

Nanggulan Formation

Middle Eocene

(The age of the holotype falls within a range represented by the CP13 Zone to CP14 Zone of Okada and Bukry (1980))

***Glaphyrocysta circularis* Matsuoka, 1984**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 134, p. 374-387, pls. 71-74, text-fig. 1

Holotype: CESN slide NG39-5 (4xI); Matsuoka, 1984, pl. 71, figs. 2a-b

River Kali Puru, Kalisongo near Nanggulan, about 20 km west of Yogyakarta, central Java, Indonesia (8 °12.3' S, 110 °10.3' E)

Nanggulan Formation

Middle Eocene

(The age of the holotype falls within a range represented by the CP13 Zone to CP14 Zone of Okada and Bukry (1980))

***Glaphyrocysta dentata* Matsuoka, 1984**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 134, p. 374-387, pls. 71-74, text-fig. 1

Holotype: CESN slide NG39-5 (2fIII); Matsuoka, 1984, pl. 71, figs. 1a-b

River Kali Puru, Kalisongo near Nanggulan, about 20 km west of Yogyakarta, central Java, Indonesia (8 °12.3' S, 110 °10.3' E)

Nanggulan Formation

Middle Eocene

(The age of the holotype falls within a range represented by the CP13 Zone to CP14 Zone of Okada and Bukry (1980))

***Hystrichokolpoma denticulata* Matsuoka, 1974**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 94, p. 319-340, pls. 44-46, text-fig. 1-3, tab. 1

Holotype: CESN slide KM-045 (13.8/1.5); Matsuoka, 1974, pl. 44, figs. 3a-b

Locality 1, level of Sample 27, Fujiwara-cho, Nara City, Nara Prefecture, Japan. (34 °38.9' N, 135 °51.1' E)

Toyoda Formation, Fujiwara Group

Early to Middle Miocene

***Hystrichokolpoma elliptica* Matsuoka, 1974**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 94, p. 319-340, pls. 44-46, text-fig. 1-3, tab. 1.

Holotype: CESN slide KM-022 (18.6/7.2); Matsuoka, 1974, pl. 44, figs. 2a-b.

Locality 1, level of Sample 27, Fujiwara-cho, Nara City, Nara Prefecture, Japan. (34 °38.9' N, 135 °51.1' E)

Toyoda Formation, Fujiwara Group.

Early to Middle Miocene.

(Orthographic correction: *Hystrichokolpoma ellipticum*

Matsuoka, 1974)

***Hystrichokolpoma okinawaia* Matsuoka, 1979**

Review of Palaeobotany and Palynology, vol. 28, p. 47-60, pls. 1-2, text-figs. 1-5

Holotype: CESN slide no. OKD-5, position 3WI; Matsuoka, 1979, pl. 2, figs. 3-4

Locality OK-2, Kisebaru, Kin-son, Kunigami-gun, Okinawa Prefecture, Japan. (26 °28.5' N, 127 °54.8' E)

Naha Formation

Early Pleistocene

(Orthographic correction: *Hystrichokolpoma okinawaium* Matsuoka, 1974. The type locality is not clearly specified in the original description)

***Hystrichokolpoma pacifica* Matsuoka, 1979**

Review of Palaeobotany and Palynology, vol. 28, p. 47-60, pls. 1-2, text-figs. 1-5

Holotype: CESN slide no. OKD-3, position 4pIII; Matsuoka, 1979, pl. 1, figs. 1-3

Locality OK-2, Kisebaru, Kin-son, Kunigami-gun, Okinawa Prefecture (26 °28.5' N, 127 °54.8' E)

Naha Formation

Early Pleistocene

(Orthographic correction: *Hystrichokolpoma pacificum* Matsuoka, 1974. The type locality is not clearly specified in the original description)

***Impagidinium japonicum* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS23-2 (19.0/135.7); Matsuoka, 1983b, pl. 6, figs. 2a-c; Jan du Chene et al., 1986, pl. 59, figs. 1-3

Locality NNS-23, Ochimizu, Washima-mura, Santo-gun, Niigata Prefecture (37 °34.3' N, 138 °44.3' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

(Senior synonym of *Impagidinium pacificum* Bujak, 1984, according to Bujak and Matsuoka (1986, p. 236))

***Lejeunecysta ? epidoma* Matsuoka, 1987**

Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1, p. 35-123, pls. 1-19, text-figs. 1-9

Holotype: CESN slide no. AK2-1 (15.2/131.7); Matsuoka, 1987, pl. 9, figs. 5-6

Locality AK-2, Akkeshi Bay, Kushiro Province, Hokkaido (43 ° 2' N, 144 °48' E)

Surface sediment

Recent

(Questionable assignment to the genus *Lejeunecysta* by the original description (Matsuoka, 1987, p. 59))

***Lejeunecysta psuchra* Matsuoka, 1987**

Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1, p. 35-123, pls. 1-19, text-figs. 1-9

Holotype: CESN slide no. AK2-2 (87.6/37.0); Matsuoka, 1987, pl. 9, figs. 7-8

Locality AK-2, Akkeshi Bay, Kushiro Province, Hokkaido (43 ° 2' N, 144 ° 48' E)

Surface sediment

Recent

***Lingulodinium sadoense* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NHA2-5 (17.0/145.7); Matsuoka, 1983b, pl. 10, figs. 1a-c

Locality NHA-2, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture, Japan. (37 ° 28.9' N, 138 ° 41.2' E)

Haizume Formation

Early Early Pleistocene

(Kokinos and Anderson (1995, p. 162) claimed that this species is a taxonomic junior synonym of *Lingulodinium machaerophorum* (Deflandre and Cookson, 1955) Wall, 1967. An early Early Pleistocene age of the holotype is confirmed by calcareous nannofossil data that indicate a level between the FAD of *Gephyrocapsa caribbeanica* and the FAD of large *Gephyrocapsa* spp. (Kobayashi et al., 1995))

***Melitasphaeridium angustum* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS17-4 (7.5/131.2); Matsuoka, 1983b, pl. 4, figs. 2a-b

Locality NNS-17, Takitani-Shinden, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 ° 27.1' N, 138 ° 38.2' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

***Melitasphaeridium aquabile* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NTE19-2 (16.0/124.0); Matsuoka, 1983b, pl. 3, figs. 7a-b, text-fig. 10

Locality NTE-19, Gomoto, Teradomari-cho, Santo-gun, Niigata Prefecture (37 ° 36.1' N, 138 ° 45.2' E)

Uppermost part of the Teradomari Formation or the basal part of the Shiiya Formation; a horizon below the Gomoto Tuff Beds

Latest Miocene to earliest Pliocene

(Harland, Head and Wrenn (in Head and Wrenn, 1992, p. 10) judged that this species is a taxonomic junior synonym of *Melitasphaeridium choanophorum* (Deflandre and Cookson, 1955) Harland and Hill, 1979. The X-Y coordinates for the holotype is incorrectly specified as "(7.7/145.1)" in the original text (Matsuoka, 1983, p. 114), although correctly specified as "(16.0/124.0)" in the plate caption (Matsuoka, 1983, p. 148))

***Millioudodinium granomembraceum* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNA1-1 (5.0/130.4); Matsuoka, 1983b, pl. 1, figs. 1a-c, text-fig. 14; Jan du Chene et al., 1986, pl. 27, figs. 1-2

Locality NNA-1, 1.7 km northwest of Mt. Takatsubo, Arakawa-cho, Iwafune-gun, Niigata Prefecture (38 ° 5.4' N, 139 ° 28.4' E)

Nashinoki Formation (correlative to the Nanatani Formation)

Late Early to Middle Miocene

(*Criproperidinium* ? *granomembraceum* (Matsuoka, 1983)

Lentin and Williams, 1985. Lentin and Williams (1985) assigned this species questionably to the genus *Criproperidinium*)

***Operculodinium echigoense* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNA4-1 (12.1/125.4); Matsuoka, 1983b, pl. 7, fig. 5; Matsuoka et al., 1997, pl. 3, figs. 1-3

Locality NNA-4, Minami-imogawa, Shitada-mura, Minami-kanbara-gun, Niigata Prefecture (37 ° 32.2' N, 139 ° 8.0' E)

Nanatani Formation

Late Middle Miocene (The age of the holotype is confirmed by planktonic foraminifera data that indicate a level of the Blow (1969)'s N9 Zone or higher (Maiya, 1978) and by calcareous nannofossil data that indicate a level of the Okada and Bukry (1980)'s CN5a Subzone or higher (Hiramatsu et al., 1997))

(Junior synonym of *Operculodinium centrocarpum* (Deflandre and Cookson, 1955) Wall, 1967, according to Matsuoka et al. (1997))

***Operculodinium longispinigerum* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS7-1, (13.0/136.7); Matsuoka, 1983b, pl. 9, figs. 8a-b; Head and Wrenn, 1992, pl. 5, figs. 4, 8, 11

Locality NNS-7, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 ° 29.2' N, 138 ° 40.8' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

***Operculodinium wallii* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS7-2 (19.3/138.4); Matsuoka, 1983, pl. 9, figs. 1a-b

Locality NNS-7, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 ° 29.2' N, 138 ° 40.8' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

(Head (in Head and Wrenn, 1992, p. 24) considered this species to be a possible taxonomic junior synonym of *Operculodinium centrocarpum* (Deflandre and Cookson, 1955) Wall, 1967)

***Reticulosphaera stellata* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide JY1-5 (11.5/144.6); Matsuoka, 1983b, pl. 4, fig. 8, text-fig. 10

A slope of the Yamato Bank in the Sea of Japan, water depth ca. -1,600 m (39 °30.3' N, 134 °38.5' E)

A sample dredged from the sea floor

Probably Pliocene or younger

(Bujak and Matsuoka (1986, p. 238) judged that this species is a taxonomic junior synonym of *Reticulosphaera actinocoronata* (Benedeck, 1972) Bujak and Matsuoka, 1986)

***Selenopemphix hamanaensis* Kojima, 1989**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 155, p. 197-211, figs. 1-7, tabs. 1-2

Holotype: BOITO slide no. 85H-1/10.60-10.61 m (1) (97.1/33.2L) (OCU-1); Kojima, 1989, Figs. 5-1,2

Core 85H-1, interval 10.60 m - 10.61 m, Lake Hamana-ko, Shizuoka Prefecture (34 °46.0' N, 137 °35.5' E)

A sediment between the Kawagodaira Pumice and the Kikai-Akahoya Tephra

Holocene (an age between 3,000yBP and 6,300 y BP)

***Spiniferites asperulus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS11-5 (12.0/130.8); Matsuoka, 1983b, pl. 12, fig. 3

Locality NNS-11, Takitani-Shinden, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 °26.8' N, 138 °38.6' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

(Illustration of the holotype is incorrectly specified as "pl. 12, fig. 2" in the original text (Matsuoka, 1983, p. 132), although correctly specified as "pl. 12, fig. 3" in the plate caption (Matsuoka, 1983b, p. 152))

***Spiniferites ellipsoideus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: KMD slide NTE9-2 (6.7/139.4); Matsuoka, 1983b, pl. 13, figs. 6a-b

Locality NTE-9, Nozomibashi-bridge, Teradomari-cho, Santo-gun, Niigata Prefecture (37 °39.7' N, 138 °47.2' E)

Teradomari Formation

Late Miocene

***Spiniferites firmus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15,

text-figs. 1-22

Holotype: CESN KMD slide NHA11-3 (6.1/131.2); Matsuoka, 1983b, pl. 14, figs. 5a-c

Locality NHA-11, Hachioji, Oguni-cho, Kariwa-gun, Niigata Prefecture (37 °17.4' N, 138 °40.0' E)

Hachioji Formation (correlative to the Haizume Formation)

Earliest Pleistocene

(The age of the holotype is confirmed by calcareous nannofossils, planktonic foraminifera and diatoms in a nearby section (Kurita et al., 1987))

(The slide number and X-Y coordinates for the holotype are incorrectly specified as "NNS11-3 (6.1/132.2)" in the plate caption (Matsuoka, 1983, p. 153). Correct specification of the holotype is "slide NHA11-3 (6.1/131.2)" as indicated in the original text (Matsuoka, 1983, p. 134))

***Spiniferites hexatypicus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NTE3a-3 (8.3/134.7); Matsuoka, 1983b, pl. 13, figs. 1a-b

Locality NTE-3, South of Nozomibashi-bridge, Teradomari-cho, Santo-gun, Niigata Prefecture (37 °38.2' N, 138 °46.5' E)

Teradomari Formation

Late Miocene

(*Spiniferites ovatus* Bujak, 1984, name illegitimate, is a taxonomic junior synonym of this species, according to Bujak and Matsuoka (1986, p. 239))

***Spiniferites nanus* Matsuoka, 1976**

Mizunami Fossil Museum, Bulletin, no. 3, p. 99-117, pls. 25-30, figs. 1-6

Holotype: CESN slide no. IIIa1, position N8f; Matsuoka, 1976, pl. 28, figs. 1-2

Locality III, north of Utahime, Nara City, Nara Prefecture (34 ° 42.5' N, 135 °48.1' E)

Utahime Member, Saho Formation, Osaka Group

Pleistocene

(Junior synonym of *Spiniferites bulloideus* (Deflandre and Cookson, 1955) Sarjeant, 1970, according to Matsuoka, 1983, p. 23. The slide number and position for the holotype in the plate caption (Matsuoka, 1976, pl. 28) is expressed improperly and should be ignored))

***Spiniferites ovatus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NTE7-10 (17.5/150.3); Matsuoka, 1983b, pl. 3, figs. 1a-c

Locality NTE-7, Nozomibashi-bridge, Teradomari-cho, Santo-gun, Niigata Prefecture (37 °39.5' N, 138 °47.1' E)

Teradomari Formation

Late Miocene

(*Spiniferites ovatus* Bujak, 1984, name illegitimate, is a

taxonomic junior homonym of this species, according to Bujak and Matsuoka (1986, p. 239)

2' N, 144 °48' E)
Surface sediment
Recent

***Spiniferites serratus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS7-1 (5.8/136.9); Matsuoka, 1983b, pl. 14, figs. 1a-c

Locality NNS-7, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 °29.2' N, 138 °40.8' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

***Spiniferites strictus* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NNS7-2 (19.3/144.3); Matsuoka, 1983b, pl. 12, figs. 5a-b

Locality NNS-7, Haizume, Nishiyama-cho, Kariwa-gun, Niigata Prefecture (37 °29.2' N, 138 °40.8' E)

Nishiyama Formation

Pliocene to earliest Pleistocene

***Tanyosphaeridium fusiform* Matsuoka, 1974**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 94, p. 319-340, pls. 44-46, text-fig. 1-3, tab. 1

Holotype: CESN slide KM-045 (5.0/17.7); Matsuoka, 1974, pl. 46, fig. 4

Locality 1, level of Sample 27, Fujiwara-cho, Nara City, Nara Prefecture (34 °38.9' N, 135 °51.1' E)

Toyoda Formation, Fujiwara Group

Early to Middle Miocene

(*Distatodinium fusiforme* (Matsuoka, 1974) Bujak and Matsuoka, 1986)

***Tectatodinium minutum* Matsuoka, 1983**

Palaeontographica, Abt. B, no. 187, p. 89-154, pls. 1-15, text-figs. 1-22

Holotype: CESN KMD slide NTS1-5 (13.9/137.7); Matsuoka, 1983b, pl. 6, figs. 7a-b; Matsuoka and Head, 1992, pl. 1, figs. 1-11, text-figs. 1A-C

Locality NTS-1, 0.8 km north of Mt. Takatsubo, Arakawa-cho, Iwafune-gun, Niigata Prefecture (38 °5.0' N, 139 °28.8' E)

Akadani Formation (correlative to the Nanatani Formation)

Late Early to Middle Miocene

(*Batiacasphaera minuta* (Matsuoka, 1983) Matsuoka and Head, 1992)

***Trinovantedinium pallidifulum* Matsuoka, 1987**

Bull. Fac. Liberal Arts, Nagasaki Univ., Nat. Sci., vol. 28, no. 1, p. 35-123, pls. 1-19, text-figs. 1-9

Holotype: CESN slide no. AK2-2 (87.4/27.6); Matsuoka, 1987, pl. 13, figs. 7-9

Locality AK-2, Akkeshi Bay, Kushiro Province, Hokkaido (43 °

Radiolaria

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Acanthocircus bispinus (Yao) see *Spongosaturnalis bispinus*
Yao

Acanthocircus imperfectus (Yao) see *Spongosaturnalis imper-*
fectus Yao

Acanthocircus protoformis (Yao) see *Spongosaturnalis proto-*
formis Yao

Acanthocircus suboblongus (Yao) see *Spongosaturnalis? sub-*
oblongus Yao

Acanthosphaera awaensis Nakaseko & Nishimura, 1979
Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 67, Pl.
1, fig. 1 (Holotype)

Holotype: Reg. No. MTTK 1707-2 (Inst. Geol. Sci., Coll. Gen.
Edu., Osaka Univ.)

Sample TK 1707 (dark grey chert), road-cut along the left bank
of the Naka River, a few kilometers north of Wajiki-cho,
Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33°52.0'N,
134°30.0'E

Nakagawa Group

Late Triassic (late Carnian and Norian)

Actinoma okurai Nakaseko & Nishimura, 1971

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 68, Pl.
1, Figs. 1-8

The Tobetsu and Masupporo Formations in Hokkaido; the
Teradomari Formation in Niigata Prefecture; the Sugata
Formation in Toyama Prefecture, Japan

Late Late Miocene, or extend up into Pliocene

Actinomma (Actinomma) miocenicum Nakaseko, 1955

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 87, Pl. IV,
figs. 4a, b, c

Reg. No. 93 (Loc. A4)

Localities A1, 3, and 4, Joyama mudstone, at the Joyama along
the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture,
Japan; 36°34.7'N, 137°09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

Actinomma (Actinomma) yosii Nakaseko, 1959

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct.
Res. Exped., No. 2, 10, Pl. II, figs. 8a, b, figs. 9a, b

Reg. No. RAA 36 (St. No. 6), Reg. No. RAA 27 (St. No. 9)
(Inst. Geol. Sci., Osaka Univ.)

Station Nos. 4, 6 and 9 in the sea near Antarctica; No. 4: 68°
30'S, 31°58'E; No. 6: 68°17.1'S, 31°38.0'E; No. 9: 68°31'S, 37°
12'E

Recent

Actinomma (Actinommilla) capillaceum Nakaseko, 1959

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct.
Res. Exped., No. 2, 11-12, Pl. III, figs. 2a, b

Reg. No. RAA 26 (St. No. 9) (Inst. Geol. Sci., Osaka Univ.)

Station No. 9 in the sea near Antarctica; 68°31'S, 37°12'E

Recent

Actinomma (Actinommilla) erinaceum Nakaseko, 1959

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct.
Res. Exped., No. 2, 12, Pl. III, fig. 3

Reg. No. RAA 16 (St. No. 9) (Inst. Geol. Sci., Osaka Univ.)

Station No. 9 in the sea near Antarctica; 68°31'S, 37°12'E

Recent

Actinomma (Actinommura) antarctica Nakaseko, 1959

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct.
Res. Exped., No. 2, 12-13, Pl. III, figs. 5-7

Reg. No. RAA 51 (St. No. 5), Reg. No. RAA 11 (St. No. 6),

Reg. No. RAA 13 (St. No. 6) (Inst. Geol. Sci., Osaka Univ.)

Station Nos. 4, 5, 6, 9 and 10 in the sea near Antarctica; No. 4:
68°30'S, 31°58'E; No. 5: 68°17'S, 31°38'E; No. 6: 68°17.1'S,
31°38.0'E; No. 9: 68°31'S, 37°12'E; No. 10: 68°33'S, 36°45'E

Recent

Actinomma ishidae Sashida & Uematsu, 1996

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 17, 48, Fig.
6-13, 14

IGUT-KS2332, IGUT-KS2354 (Inst. Geosci., Univ. Tsukuba)

Limestone blocks, Tohidani, Kito-son, Naka-gun, Tokushima
Prefecture, Shikoku, Japan; 33°46.2'N, 134°08.1'E

Torinosu-type limestone

Late Jurassic, Tithonian

Actinomma matsukai Sashida & Uematsu, 1996

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 17, 48-49,
Fig. 8-6 (Holotype), Fig. 8-9 (Paratype)

Holotype: IGUT-KS2217, Paratype: IGUT-KS2287 (Inst.
Geosci., Univ. Tsukuba)

Limestone blocks, Tohidani, Kito-son, Naka-gun, Tokushima
Prefecture, Shikoku, Japan; 33°46.2'N, 134°08.1'E

Torinosu-type limestone

Late Jurassic, Tithonian

Actinomma tohidaniensis Sashida & Uematsu, 1996

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 17, 49, Fig.
8-10 (Holotype), Fig. 8-7 (Paratype)

Holotype: IGUT-KS2311, Paratype: IGUT-KS2339 (Inst.
Geosci., Univ. Tsukuba)

Limestone blocks, Tohidani, Kito-son, Naka-gun, Tokushima

Prefecture, Shikoku, Japan; 33 °46.2'N, 134 °08.1'E
Torinosu-type limestone
Late Jurassic, Tithonian

***Albaillella angusta* Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 91-92, Pl. 2, fig. 19 (Holotype), Pl. 2, fig. 20 (Paratype)
Holotype: OCU PR 0252, Paratype: OCU PR 0253 (Dept. Geosci., Osaka City Univ.)
Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E
Funafuseyama Unit
Late Permian

***Albaillella asymmetrica* Ishiga & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 276, Pl. 3, fig. 3 (Holotype), Pl. 3, figs. 4-6 (Paratypes)
Holotype: KUE PR 32-42, Paratypes: KUE PR 32-10, 32-24, 32-33 (Dept. Earth Sci., Kyoto Univ. Edu.)
Ashimi-dani D Section, along the Ashimi-dani River, Keihoku-cho, Kitakuwata-gun, Kyoto Prefecture, Japan; 35 ° 6.6'N, 135 °37.8'E
Tamba Group
Early Permian - Middle Permian

***Albaillella cavitata* Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 90, Pl. 1, fig. 14 (Holotype), Pl. 1, fig. 21 (Paratype)
Holotype: OCU PR 0226, Paratype: OCU PR 0233 (Dept. Geosci., Osaka City Univ.)
Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E
Funafuseyama Unit
Late Permian

***Albaillella excelsa* Ishiga, Kito & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 17-18, Pl. 3, fig. 5 (Holotype), Pl. 3, figs. 6-8 (Paratypes)
Holotype: KUE PR 29-2, Paratypes: KUE PR 22-34, 29-4, 29-6 (Dept. Earth Sci., Kyoto Univ. Edu.)
Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 ° 14.9'N, 136 °22.9'E
Ikuri-dani Formation
Late Permian

***Albaillella flexa* Kuwahara, 1992**

Jour. Geosci., Osaka City Univ., Vol. 35, 39-40, Pl. 1, fig.1 (Holotype), Pl. 1, fig.3 (Paratype)
Holotype: OCU PR 0001, Paratype: OCU PR 0003 (Dept. Geosci., Osaka City Univ.)
Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E
Nabigawa Formation

Late Permian

***Albaillella lauta* Kuwahara, 1992**

Jour. Geosci., Osaka City Univ., Vol. 35, 40, Pl. 1, fig.4 (Holotype), Pl. 1, fig. 5 (Paratype)
Holotype: OCU PR 0004, Paratype: OCU PR 0005 (Dept. Geosci., Osaka City Univ.)
Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E
Nabigawa Formation
Late Permian

***Albaillella levis* Ishiga, Kito & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 17, Pl. 3, fig. 1 (Holotype), Pl. 3, figs. 2-4 (Paratypes)
Holotype: KUE PR 33-26, Paratypes: KUE PR 22-62, 33-24, 33-25 (Dept. Earth Sci., Kyoto Univ. Edu.)
Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 ° 14.9'N, 136 °22.9'E
Ikuri-dani Formation
Late Permian

***Albaillella protolevis* Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 90-91, Pl. 2, fig. 3 (Holotype), Pl. 2, fig. 4 (Paratype)
Holotype: OCU PR 0032, Paratype: OCU PR 0033 (Dept. Geosci., Osaka City Univ.)
Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E
Funafuseyama Unit
Late Permian

***Albaillella sinuata* Ishiga & Watase, 1986**

Earth Sci. (Chikyu Kagaku), Vol. 40, 126-127, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 2-8 (Paratypes)
Holotype: KUE PR 58-47, Paratypes: KUE PR 58-40, 58-41, 58-45, 58-50, 58-58, 58-59, 58-60, (Dept. Earth Sci., Kyoto Univ. Edu.)
Locality BB-3, Muikaichi area, Muikaichi-cho, Kanoashi-gun, Shimane Prefecture, Japan; 34 °20.5'N, 131 °53.7'E
Na Formation (chert facies) of the Nishiki Group
Early Permian - Middle Permian

***Albaillella triangularis* Ishiga, Kito & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 17, Pl. 2, fig. 8 (Holotype), Pl. 2, figs. 9-11 (Paratypes)
Holotype: KUE PR 26-10, Paratypes: KUE PR 26-12, 26-14, 26-26 (Dept. Earth Sci., Kyoto Univ. Edu.)
Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 ° 14.9'N, 136 °22.9'E
Ikuri-dani Formation
Late Permian

***Albaillella yamakitai* Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 89-90, Pl. 1, fig. 3 (Holotype), Pl. 1, fig. 11 (Paratype)

Holotype: OCU PR 0215, Paratype: OCU PR 0223 (Dept. Geosci., Osaka City Univ.)

Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E

Funafuseyama Unit

Late Permian

***Albaillella yaoi* Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 92-93, Pl. 3, fig. 19 (Holotype), Pl. 3, fig. 21 (Paratype)

Holotype: OCU PR 0275 Paratype: OCU PR 0277 (Dept. Geosci., Osaka City Univ.)

Chert, Mio Gorge, Itadori-mura, Mugi-gun, Gifu Prefecture, Japan; 35 °44. 0'N, 136 °51.1'E

Funafuseyama Unit

Late Permian

***Amphibrachium irazuense* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 68-69, Pl. 8, fig. 1 (Holotype), Pl. 1, figs. 1-2, Pl. 8, fig. 2 (Paratypes)

Holotype: IGPS 99602, Paratypes: IGPS 99603, 99604, 99605 (Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-5 (Holotype) and sample IRZ-56 (Paratypes), Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.2'N, 133 °02.3'E (Holotype)

Irazuyama Formation

Jurassic (Late Callovian to Oxfordian)

***Amphiplecta tripleura* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 18-20, Pl. 1, fig. 1 (Holotype)

Holotype: OCU CR-0007 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Amphipyndax conicus* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 143-144, Pl. 12, figs. 1, 2, Pl. 17, fig. 8 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Reg. No. MITK2502 and Reg. No. MITK1509, Anan City, Tokushima Prefecture, Shikoku, Japan; MITK2502: 33 °51.7'N, 134 °38.0'E, MITK1509: 33 °48.6'N, 134 °34.8'E

Shimanto Group

Cretaceous (Hauterivian to Cenomanian)

***Amphipyndax durisaeptum* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 69, Pl. 9, fig.

2 (Holotype), Pl. 9, fig. 3, Pl. 1, figs. 9-10 (Paratypes)

Holotype: IGPS 99606, Paratypes: IGPS 99607, 99608, 99609 (Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-50, Irazu Valley Section IV, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °25.9'N, 133 °02.3'E (Holotype)

Irazuyama Formation

Jurassic (Late Callovian to Oxfordian)

***Amphipyndax ellipticus* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 144, Pl. 12, figs. 7, 8a, b (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Reg. No. MIKO2504, Suzaki City, Kochi Prefecture, and Reg. No. MITK SY24, Anan City, Tokushima Prefecture, Shikoku, Japan; MIKO2504: 33 °23.4'N, 133 °18.3'E. SY24: 33 °48.3'N, 134 °36.4'E

Shimanto Group

Cretaceous (Albian to Cenomanian)

***Amphipyndax tsunoensis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 69-70, Pl. 9, fig. 4 (Holotype), Pl. 9, fig. 5, Pl. 1, figs. 11-12 (Paratypes)

Holotype: IGPS 99610, Paratypes: IGPS 99611, 99612, 99613 (Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-50, Irazu Valley Section IV, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °25.9'N, 133 °02.3'E (Holotype)

Irazuyama Formation

Jurassic (Late Callovian to Oxfordian)

***Amphiropalum praepsilon* Sakai, 1979**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 49, No. 1, 85-86, Pl. 2, fig. 1 (Holotype), Pl. 1, fig. 11, Pl. 2, fig. 2 (Paratypes)

Holotype: IGPS 75029, Paratypes: IGPS 75030, 75031 (Inst. Geol. Paleont., Tohoku Univ.)

Sample KH71-5-7, 349-350 cm, in the equatorial Pacific sediments; 2 °00.8'N, 145 °59.0'W

Neogene

***Andromeda praepodbielensis* Baumgartner, 1984**

Ecologiae Geol. Helv., Vol. 77, 756, Pl. 1, fig. 14 (Paratype)

Paratype: C 35751 (Naturhistorisches Museum, Basel, Switzerland)

Loc. 40, IN-7, Inuyama area, near Unuma, Kakamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

Mino Belt, Central Japan

Middle Jurassic

(Palinandromeda Pessagno, Blome & Hull, 1993)

***Anisicyrtis jurassuca* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 53, Pl. 6, figs. 13-15 (Holotype), Pl. 6, fig. 16 (Paratype)

Holotype: ATJRMN-1135-1, Paratype: ATJRMN-1121-5 (Dept.

Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane
Middle Jurassic

***Anthocyrtilis pseudoovata* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 172-173, Text-fig. 5, Pl. 1, figs. 6a, b (Holotype)

Holotype: Reg. No. TKT 1008 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E

Isozaki Formation
Late Miocene

***Anthocyrtiloma (?) frizzelli* Nishimura A., 1992**

Micropaleontol., Vol. 38, 332, Pl. 13, fig. 8 (Holotype), Pl. 9, figs. 13-14 (Paratypes)

Holotype: DSDP 384-6-4 (83-85 cm)-A, M48/2, Paratypes: DSDP 384-7CC, LMMN AN0011-1; DSDP 384-7-3 (38-40 cm), LMMN AN0007-1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Upper part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Apsis murus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 358, 360, Pl. 10, fig. 5 (Holotype), Pl. 10, fig. 9, Pl. 13, fig. 12 (Paratypes)

Holotype: DSDP 384-11-1 (130-132 cm), LMMN AN0027-4, Paratypes: DSDP 384-10-3 (38-40 cm), LMMN AN0035-1; DSDP 384-10-5 (38-40 cm)-A, M48/2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene Lower part of Bekoma campechensis Zone

***Apsis velutochlamydosaurus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 360, Pl. 10, fig. 8 (Holotype), Pl. 10, fig. 7, Pl. 13, fig. 11 (Paratypes)

Holotype: DSDP-6-1 (38-40 cm), LMMN AN0001-8, Paratypes: DSDP-6-3 (38-40 cm), LMMN AN0003-2; DSDP-6-4 (83-85 cm)-(1), C49/4 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Upper part of Bekoma campechensis Zone and Bekoma bidartensis Zone

***Arcanicapsa spherica* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 54, Pl. 6, fig. 22

(Holotype), Pl. 7, figs. 1-3 (Paratypoid)

Holotype: ATJRMN-1114-1, Paratypoid: ATJRMN-1132-10 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane
Middle Jurassic

***Archaeodictyomitra (?) amabilis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 70-71, Pl. 9, fig. 6 (Holotype), Pl. 1, figs. 13a-b (Paratype)

Holotype: IGPS 99614, Paratype: IGPS 99615 (Inst. Geol. Paleont., Tohoku Univ.)

Sample SOG-8, Sogatani Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.8'N, 133 °03.7'E (Holotype)

Irazuyama Formation
Jurassic (Callovian to Oxfordian)

***Archaeodictyomitra (?) mirabilis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 71, Pl. 9, fig. 7 (Holotype), Pl. 9, fig. 8, Pl. 1, figs. 1a-b (Paratypes)

Holotype: IGPS 99616, Paratypes: IGPS 99617, 99618 (Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-50, Irazu Valley Section IV, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °25.9'N, 133 °02.3'E (Holotype)

Irazuyama Formation
Jurassic (Callovian to Oxfordian)

***Archaeodictyomitra gifuensis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 51-52, Pl. 6, figs. 3-4 (Holotype), Pl. 6, fig. 5 (Paratype)

Holotype: ATJRMN-1134-7, Paratypoid: ATJRMN-1133-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane
Middle Jurassic

***Archaeodictyomitra riedeli* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 57-58, Pl. 4, figs. 4a, b (Holotype), Pl. 12, fig. 1 (Paratype)

Holotype: IGPS 97542, Paratype: IGPS 97543 (Inst. Geol. Paleont., Tohoku Univ.)

Sample CB09 in Section CB along a tributary of the Chinomi River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 ° 10.9'N, 142 °49.2'E (Holotype)

Urakawa Formation
Cretaceous

***Archaeodictyomitra suzukii* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 71, Pl. 2, figs. 1a-b (Holotype), Pl. 2, figs. 2a-b (Paratype)

Holotype: IGPS 99619, Paratype: IGPS 99620 (Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-4, Irazu Valley Section III, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°26.2'N, 133°02.3'E (Holotype)

Irazuyama Formation

Jurassic (Callovian to Oxfordian)

***Archaeosemantis gigas* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 142, Fig. 39-3 (Holotype), Figs. 39-1, 2 (Paratypes)

Holotype: ESN 148001, Paratype: ESN 148202, 148203 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35°25.2'N, 136°58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Archaeosemantis globus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 142, 144, Fig. 39-4 (Holotype), Figs. 39-5, 6 (Paratypes)

Holotype: ESN 148002, Paratypes: ESN 148204, 148205 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35°25.2'N, 136°58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Archaeosemantis lithocircites* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 144, Fig. 37-4 (Holotype), Figs. 37-3, 5 (Paratypes)

Holotype: ESN 148003, Paratypes: ESN 148079, 148080 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Late Carnian to Late Norian

***Archaeosemantis venusta* Sashida, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 131, 171, Pl. 36, fig. 1 (Holotype), Pl. 36, figs. 2-9 (Paratypes)

Holotype: IGUT. 5800, Paratypes: IGUT. 5801-5808 (Inst. Geosci., Univ. Tsukuba)

The upper reach of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35°57.6'N, 138°45.0'E

Ogamata Formation

Early Triassic

***Archaeospongoprimum compactum* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 68, Pl. 1, fig. 7 (Holotype)

Holotype: Reg. No. MTSM 802-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34°27.0'N, 136°53.4'E

Tsuiji Group in the southern part of the Chichibu belt

Late Triassic

(Pseudostylospaera Kozur and Mostler, 1981)

***Archaeospongoprimum helictatum* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 68, Pl. 2, fig. 1 (Holotype)

Holotype: MTIN 13-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Red chert sample IN13, north of Inuyama area, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.5'E

Mino Belt

Late Triassic

(Pseudostylospaera Kozur and Mostler, 1981)

***Archaeospongoprimum japonicum* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 67-68, Pl. 1, fig. 2 (Holotype)

Holotype: Reg. No. MTSM 802-3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34°27.0'N, 136°53.4'E

Tsuiji Group in the southern part of the Chichibu belt

Late Triassic

(Pseudostylospaera Kozur and Mostler, 1981)

***Archaeospongoprimum nishiyamae* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 147-148, Pl. 1, fig. 3 (Holotype) (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Reg. No. MISM141, Nantou-cho, Watarai-gun, Mie Prefecture, Japan; 34°16.1'N, 136°37.3'E (Holotype)

Shimanto Group

Late Cretaceous

***Archaeospongoprunum spinulosum* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 69, Pl. 2, fig. 4 (Holotype)

Holotype: Reg. No. MTTK 1707-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample TK 1707 (dark grey chert), a road-cut along the left bank of the Naka River, a few kilometers north of Wajiki-cho, Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33 °52.0'N, 134 °30.0'E

Nakagawa Group

Late Triassic (late Carnian and Norian)

(*Pseudostylospaera* Kozur and Mostler, 1981)

***Archaeospongoprunum tenue* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 68-69, Pl. 1, fig. 10 (Holotype)

Holotype: Reg. No. MTMN 2311-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample MN 2311, a road-cut along the Hida River, 0.8 km east of the Kamiaso Station, Hichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.1'N, 137 °08.0'E

Mino Belt

Late Triassic

(*Pseudostylospaera* Kozur and Mostler, 1981)

***Archaeothamnulus okuchichibuensis* Sashida, 1991**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 161, 687, Fig. 5-13 (Holotype), Fig. 5-10, Fig. 5-11, Fig. 5-12, Fig. 5-14 (Paratypes)

Holotype: IGUT-KS3773, Paratypes: IGUT-KS3623, 8993, 8994, 3622 (Inst. Geosci., Univ. Tsukuba)

Chert (OG-1), upper reach of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °57.6'N, 138 °45.0'E

Ogamata Formation

Late Triassic, Spathian

***Archaeothamnulus ramosus* Sashida, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 131, 173, Pl. 37, fig. 11 (Holotype), Pl. 37, figs. 10, 12 (Paratypes)

Holotype: IGUT. 5827, Paratypes: IGUT. 5828, 5829 (Inst. Geosci., Univ. Tsukuba)

The upper reaches of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °57.6'N, 138 °45.0'E

Ogamata Formation

Early Triassic

***Artostrobium? primum* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 42-43, Pl. 12, fig. 1 (Holotype), fig. 2 (Paratype)

Holotype: OCU MR 2359, Paratype: OCU MR 2362 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma

railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Axoprunum (?) irregularis* Takemura, 1992**

Proc. ODP, Sci. Results, Vol. 120, 742, Pl. 3, figs. 8-9 (Holotype), Pl. 3, figs. 10-11

Holotype: HUTE-R-4001, Paratype: HUTE-R-4002 (Geoscience Institute, Hyogo University of Teacher Education)

ODP Leg 120, Hole 748B, Kerguelen Plateau in the southern Indian Ocean. Sample 120-748B-11H-4, 45-47 cm; 58 °26.5'S, 78 °58.9'E

Oligocene

***Ayrtonius elizabethae* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 144-145, Fig. 39-7 (Holotype), Figs. 39-8, 9 (Paratypes)

Holotype: ESN 148004, Paratypes: ESN 148206, 148207 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Bagotum pseudoerraticum* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 113-114, Pl. 2, fig. 1 (Holotype), Pl. 2 figs. 2-5 (Paratypes)

Holotype: UOK-R2-03-01, Paratypes: UOK-R2-03-03, UOK-R2-03-04, UOK-R2-03-05, UOK-R2-03-07 (Dept. Geol., Osaka Kyoiku Univ.)

Loc. 230, black siliceous mudstone, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36 °04.8'N, 138 °41.0'E (Holotype)

"Ryogami" Formation

Early Jurassic

***Bathropyramis (?) pyrgina* Sugiyama, 1992**

Jour. Earth Planet. Sci. Nagoya Univ., Vol. 39, 20-21, Pl. 19, figs. 7a, 7b (Holotype), Pl. 19, figs. 8-11 (Paratypes)

Holotype: ESN 146742, Paratype: ESN 146743, 146744, 146745, 146746 (Dept. Earth Sci., Nagoya Univ.)

Type section of the Nobori Formation of the Toyohama Group, a small scale on the Pacific coast, Muroto City, Kochi Prefecture, Shikoku, Japan; 33 °22.0'N, 134 °03.5'E

Nobori Formation

Pliocene

***Bathropyramis campbelli* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 64-65, Pl. 6, figs. 8a, b (Holotype), Pl. 6, fig. 9, Pl. 13, fig. 6 (Paratypes)

Holotype: IGPS 97594, Paratypes: IGPS 97595, 97596 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample My76-168 in Section KE along the Koefuenosawa, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °14.3'N, 142 ° 47.0'E (Holotype)
 Urakawa Formation
 Cretaceous

***Bekoma (?) oliva* Nishimura A., 1992**

Micropaleontol., Vol. 38, 333, Pl. 5, fig. 10 (Holotype), Pl. 13, fig. 6 (Paratype)
 Holotype: DSDP 384-10-4 (38-40 cm), LMMN AN0038-1, Paratype: DSDP 384-10-4 (38-40 cm)-(2), R30/3 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
 DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
 Late Paleocene. *Bekoma campechensis* to *Bekoma bidartensis* Zones

***Bekoma helenae* Nishimura A., 1992**

Micropaleontol., Vol. 38, 332-333, Pl. 13, fig. 2 (Holotype), Pl. 5, figs. 5-6 (Paratypes)
 Holotype: DSDP 384-6-4 (83-85 cm)-(1), Z38/1, Paratypes: DSDP 384-6-4 (83-85 cm), LMMN AN0004-2, DSDP 384-7-3 (38-40 cm), LMMN AN0007-3 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
 DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
 Late Paleocene. Upper Part of *Bekoma campechensis* Zone and *Bekoma bidartensis* Zone

***Bipedis durus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 145, Figs. 39-11a-c (Holotype)
 Holotype: ESN 148005 (Dept. Earth Sci., Nagoya Univ.)
 Section HZ, near the Kamiaso Bridge, Hisuikyo area, Hichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.2'N, 137 °07.9'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
 Norian

***Bipedis horiae* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 145, Fig. 28-7 (Holotype), Fig. 39-10 (Paratype)
 Holotype: ESN 148006, Paratype: ESN 148208 (Dept. Earth Sci., Nagoya Univ.)
 Section K, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Sinemurian

***Blomella megasphaera* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 146, Fig. 39-17 (Holotype), Figs. 39-16, 18a-b (Paratypes)
 Holotype: ESN 148008, Paratypes: ESN 148212, 148213 (Dept. Earth Sci., Nagoya Univ.)
 Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
 Norian

***Botryopera (?) leptostraca* Sugiyama, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 169, 60, 63, Figs. 14-1a-1b (Holotype), Figs. 14-2a-2b, Figs. 14-3a-3b, Figs. 14-4a-4b (Paratypes)
 Holotype: ESN 146512, Paratypes: ESN146513, 146514, 146515 (Dept. Earth Sci., Nagoya Univ.)
 Sample OD-27, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E
 Oidawara Formation
 Early to Middle Miocene

***Bulbocyrtium dryites* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 146-147, Fig. 37-9 (Holotype)
 Holotype: ESN 148009 (Dept. Earth Sci., Nagoya Univ.)
 Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
 Ladinian to Carnian

***Busuanga (?) xyza* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 147, Fig. 37-2 (Holotype)
 Holotype: ESN 148078 (Dept. Earth Sci., Nagoya Univ.)
 Section O, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
 Ladinian

***Calocyclus (?) nakasekoi* Takemura & Ling, 1998**

Paleont. Res., Vol. 2, 160, Figs. 3-1-2 (Holotype), Figs. 3-7 (Paratypes)
 Holotype: HUTE-R-4007, Paratypes: HUTE-R-4008, 4009, 4010 (Geoscience Institute, Hyogo University of Teacher Education)

ODP Leg. 120, Site 748, Southern Kerguelen Plateau in the western part of the Raggatt Basin, east of the Banzare Bank, Sample 120-748B-19H-4, 45-57 cm; 58 °26.5'S, 78 °58.9'E
Middle Eocene

***Calocyclus (Calocyclella) cylindrica* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 101-102, Pl. IX, figs. 8a, b

Reg. No. 110 (Loc. A4)

Locality A4, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Calocyclus (Calocyclella) ovata* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 103-104, Pl. IX, figs. 7a, b

Reg. No. 48 (Loc. A2)

Localities A1, 2, 3, 4 and 5, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Calocyclella mizunamiensis* Sugiyama & Furutani, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 206-207, Pl. 19, fig. 8 (Holotype)

Holotype: ESN 146981 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-26, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E

Oidawara Formation

Middle Miocene

***Canesium (?) cucurbita* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 147, Fig. 37-8 (Holotype), Fig. 37-7 (Paratype)

Holotype: ESN 148010, Paratype: ESN 148082 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)

Ladinian to Carnian

***Cannartidium (Cannartidium) amphicylindrum* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 90-91, Pl. VI, figs. 5a, b

Reg. No. 98 (Loc. A4)

Localities A1, 2 and 4, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun,

Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Canoptum lubricum* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 114-115, Pl. 1, fig. 16 (Holotype), Pl. 1, figs. 17-18 (Paratypes)

Holotype: UOK-R2-01-01, Paratypes: UOK-R2-01-02, UOK-R2-01-03 (Dept. Geol., Osaka Kyoiku Univ.)

Loc. 284-08, black siliceous mudstone, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36 °05.0'N, 138 °40.9'E (Holotype)

"Ryogami" Formation

Late Triassic to Early Jurassic

***Canoptum triassicum* Yao, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 59-60, Pl. 3, fig. 1 (Holotype), fig. 2 (Paratype)

Holotype: OCU MR 2469, Paratype: OCU MR 2472 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiasso Unit)

Late Triassic

***Capnuchosphaera neosagaris* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 148-149, Figs. 40-7a, b (Holotype), Figs. 40-5, 6 (Paratypes)

Holotype: ESN 148011, Paratypes: ESN 148219, 148220 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)

Late Norian

***Capnuchosphaera oma* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 149, Fig. 37-12 (Holotype)

Holotype: ESN 148012 (Dept. Earth Sci., Nagoya Univ.)

Section HZ, near the Kamiasso Bridge, Hisuikyo area, Hichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.2'N, 137 °07.9'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)

Early Norian

***Capnuchosphaera sagaris* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 149, Figs. 37-13a, b (Holotype)

Holotype: ESN 148013 (Dept. Earth Sci., Nagoya Univ.)

Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Carnian

***Carpocanium kinugasense* Nishimura H., 1990**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 11, 167-168, Fig. 41-8 (Holotype), Fig. 41-1, Fig. 41-3, Fig. 41-6, Fig. 41-7, Fig. 41-9, Fig. 42-1, Fig. 42-2 (Paratypes)
Holotype: IGUT HN6047-04, Paratypes: IGUT HN6040-01, 6041-01, 6041-02, 6046-01, 6047-01, 6047-02, 6047-03 (Inst. Geosci., Univ. Tsukuba)
Loc. KN, tuffaceous mudstone, 900 m southeast from the Kinugasa railway station, Yokosuka City, Kanagawa Prefecture, Japan; 35 °15.0'N, 139 °40.0'E
Kinugawa Formation
Middle Miocene

***Carpocanopsis costatum* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 148, Pl. 13, figs. 1a, b, 3, 5, Pl. 17, fig. 12 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Reg. No. MITK SY24 and MITK SY38, Anan City, Tokushima Prefecture, Shikoku, Japan; SY24: 33 °48.3'N, 134 °36.4'E. SY38: 33 °47.3'N, 134 °34.3'E
Shimanto Group
Late Jurassic and Cretaceous

***Carposphaera mitakaena* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 293, Pl. 1, fig. 9 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Carposphaera pulchra* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 293, Pl. 1, fig. 8a (Holotype) (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Cassideus mariae* Nishimura A., 1992**

Micropaleontol., Vol. 38, 333-334, Pl. 4, fig. 2 (Holotype), Pl. 4, fig. 1 (Paratype)
Holotype: DSDP 384-7-3 (38-40 cm), LMMN AN0007-5, Paratype: DSDP 384-7-3 (38-40 cm), LMMN AN0007-4 (Laboratory of the Microfossil's study of Matsumoto, Nagano by

A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene. Upper part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Cecrops floridus* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 69-70, Pl. 2, fig. 8 (Holotype)
Holotype: Reg. No. MTSM 802-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34 °27.0'N, 136 °53.4'E
Tsuiji Group in the southern part of the Chichibu belt
Late Triassic

***Celluronta (?) conica* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 149-150, Fig. 37-20 (Holotype), Fig. 37-10 (Paratype)
Holotype: ESN 148014 Paratype: ESN 148083 (Dept. Earth Sci., Nagoya Univ.)
Section F, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Late Anisian to Ladinian

***Celluronta (?) jovi* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 150, Fig. 37-18 (Holotype), Fig. 37-19 (Paratype)
Holotype: ESN 148017, Paratype: ESN 148088 (Dept. Earth Sci., Nagoya Univ.)
Section E, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Early Anisian

***Celluronta donax* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 150, Fig. 37-14 (Holotype), Fig. 37-15 (Paratype)
Holotype: ESN 148015, Paratype: ESN 148085 (Dept. Earth Sci., Nagoya Univ.)
Section M, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Anisian

***Cenellipsis? mirabilis* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 296-297, Pl. 1, fig. 11 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35° 47.0'N, 139° 08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Cenellipsis nakaensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 216, Pl. 2-9, fig. 2-34

Odaira, northern part of Torinoko mountain block 5 km distant from a office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36° 46.0'N, 140° 19.7'E

***Cenellipsis nipponica* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 295, Pl. 1, fig. 18 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35° 47.0'N, 139° 08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Cenellipsis subelongata* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 295-296, Pl. 1, fig. 10 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35° 47.0'N, 139° 08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Cenosphaera? rugosa* Sashida, 2000**

Jour. Paleont. Vol. 74, 804, Fig. 8-15 (Holotype), Fig. 8-13, 16 (Paratypes)

Holotype: IGUT-KS1030, Paratypes: IGUT-KS1046, IGUT-KS1058 (Inst. Geosci., Univ. Tsukuba)

Dark gray bedded chert sample FA-3-2, Unit 4, the FA Section, quarry in Ban (=Village) Huai Tin Tang, 20 km north of Chang Dao, northern Thailand: 19° 34'54" N, 99° 06'20" E

"Fang Chert"

Early and Middle Triassic (Spathian to Anisian)

***Cenosphaera andoi* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1215, 1217, Fig. 17-4 (Holotype), Fig. 17-6 (Paratype)

Holotype: ESN 146215, Paratype: ESN 146214 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 51, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35° 25.4'N, 136° 46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and

Kamiaso Unit of Wakita (1988)

Early Triassic

***Cenosphaera cayeuxi* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 291, Pl. 1, fig. 4 (Holotype) (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35° 47.0'N, 139° 08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Cenosphaera (Cyrtidosphaera) antarctica* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 5, Pl. I, figs. 3-6

Reg. No. RAA 26 (St. No. 9), Reg. No. RAA 40 (St. No. 8),

Reg. No. RAA 26 (St. No. 9), Reg. No. RAA 27 (St. No. 9)

(Inst. Geol. Sci., Osaka Univ.)

Station Nos. 5, 6, 8, and 9 in the sea near Antarctica; No. 5: 68° 17'S, 31° 38'E; No. 6: 68° 17.1'S, 31° 38.0'E; No. 8: 68° 19'S, 31° 22'E; No. 9: 68° 31'S, 37° 12'E

Recent

***Cenosphaera (Cyrtidosphaera) yosii* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 5-6, Pl. II, fig. 4

Reg. No. RAA 48 (St. No. 6) (Inst. Geol. Sci., Osaka Univ.)

Station Nos. 5 and 6 in the sea near Antarctica; No. 5: 68° 17'S, 31° 38'E; No. 6: 68° 17.1'S, 31° 38.0'E

Recent

***Cenosphaera huzitai* Nakaseko, 1964**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 13, Pl. 1, figs. 3a, b (Holotype)

Holotype: Reg. No. RP 2043 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sediment in the northern part of the Japan Trench; 37° 29'N, 145° 53'E

Recent

***Cenosphaera igoi* Sashida, 2000**

Jour. Paleont. Vol. 74, 804, Fig. 10-7 (Holotype), Fig. 10-8 (Paratype)

Holotype: IGUT-KS2020, Paratype: IGUT-KS2064 (Inst. Geosci., Univ. Tsukuba)

Dark gray bedded chert sample HTT-24, Unit 8, the HTT Section, quarry in Ban (=Village) Huai Tin Tang, 20 km north of Chang Dao, northern Thailand: 19° 34'54" N, 99° 06'20" E

"Fang Chert"

Middle Triassic (Anisian)

***Cenosphaera magna* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 292-293, Pl. 1, fig. 5 (Holotype) (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 ° 08.7'E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Cenosphaera nipponica* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 291, Pl. 1, fig. 2 (Holotype) (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 ° 08.7'E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Cenosphaera (Phormosphaera) nagatai* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 6-7, Pl. II, figs. 1a, b, 2

Reg. No. RAA 13 (St. No. 6), Reg. No. RAA 10 (St. No. 6) (Inst. Geol. Sci., Osaka Univ.)

Station No. 6 in the sea near Antarctica; 68 ° 17.1'S, 31 ° 38.0'E
Recent

***Cenosphaera yatsuensis* Nakaseko, 1964**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 13, 41, Pl. 1, figs. 5a, 5b, Pl. 2, figs. 1a, 1b, 3a, 3b

Reg. No. RP 1056, 1049, 1013 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sediment in the northern part of the Japan Trench; 37 ° 29'N, 145 ° 53'E

Recent

***Ceratobotrys riedeli* Nishimura H., 1990**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 11, 169-170, Fig. 37-3 (Holotype), Fig. 37-1, Fig. 37-2 (Paratypes)

Holotype: IGUT HN6016-03, Paratypes: IGUT HN 6016-01, 6016-02 (Inst. Geosci., Univ. Tsukuba)

Loc. B83, siliceous clay dredged from deep-sea sediments at Lat. 0 ° 58'S, Long. 18 ° W, depth 5,359 m; 0 ° 58'S, 18 ° W

Recent

***Ceratocyrtis (?) cantharoides* Sugiyama & Furutani, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 205, Pl. 20, figs. 2a, 2b (Holotype)

Holotype: ESN 146985 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-26, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 ° 22.4'N, 137 ° 15.0'E

Oidawara Formation

Middle Miocene

***Ceratocyrtis morawanensis* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 20-21, Pl. 1, fig. 5 (Holotype)

Holotype: OCU CR-0008 (Dept. Geosci., Osaka City Univ.)

Loc. 90081302, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 ° 17.9'N, 143 ° 45.8'E

Lower platy shale member of the Morawan Formation in the Kawakami Group

Late Oligocene

***Ceratocyrtis multicornus* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 464, Fig. 7-2 (Holotype)

Holotype: OCU CR-0002 (Dept. Geosci., Osaka City Univ.)

Loc. 90102405, Oikamanai River Route in Toyokoro Hills region, Churui-mura, Hiroo-gun, Hokkaido, Japan; 42 ° 36.3'N, 143 ° 27.2'E

Taiki Formation

Late Miocene

***Ceratocyrtis shimodaensis* Sashida & Kurihara, 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 122-123, Fig. 4-2 (Holotype), Fig. 4-1, Fig. 7-11 (Paratypes)

Holotype: IGUT-KSR-10024, Paratypes: IGUT-KSR-10016, 0026 (Inst. Geosci., Univ. Tsukuba)

Plankton samples, approximately 3 to 5 km south of the coast of Shimoda, Izu Peninsula, Japan; 34 ° 36.6'-34 ° 37.1'N, 138 ° 56.4'-138 ° 57.0'E

Recent

***Ceratoikiscum armiger* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 51-52, Pl. 12, fig. 2 (Holotype), Pl. 12, figs. 3-4 (Paratypes)

Holotype: ESN 145084, Paratypes: ESN 145085-145086 (Dept. Earth Sci., Nagoya Univ.)

Locality F1, Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Ceratoikiscum ichinotaniense* Ishiga, 1992**

Centenary of Japanese Micropaleontology, Ishizaki and Saito eds., Terra Scientific Publishing Company, Tokyo, 395, Fig. 8-1 (Holotype), Fig. 8-2, 8-3 (Paratypes)

Holotype: DGSU PR 1031, Paratypes: DGSU PR 1032, DGSU PR 1034 (Dept. Geol., Fac. Sci., Shimane Univ.)

Ichinotani Valley, Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 ° 13.0'N, 137 ° 31.5'E

Yoshiki Formation

Silurian

***Ceratoikiscum izumiensis* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 64, 66, Pl. 3, fig. 7 (Holotype), Pl. 3, figs. 5-6, 8 (Paratypes)

Holotype: IGUT-TK0017, Paratypes: IGUT-TK0019, IGUT-TK0197, IGUT-TK0165 (Inst. Geosci., Univ. Tsukuba)

Sample 72509 (Holotype) and samples 72507, 72508(Paratypes), Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E
Kamianama Group
Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Ceratoikiscum kochiense* Umeda, 1997**

Earth Sci. (Chikyu Kagaku), Vol. 51, 419-420, Pl. 3, fig. 1 (Holotype), Pl. 3, Fig. 2 (Paratype)
Holotype: OCU PR 0074, Paratype: OCU PR 0075 (Dept. Geosci., Osaka City Univ.)
Acidic tuff (Sample 1F), 170 m southeast from Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °34.5'N, 133 ° 30.0'E
Yokokurayama Group in the Kurosegawa Terrane
Early Devonian

***Ceratoikiscum konomoriense* Ishiga, 1988**

Geol. Rept. Shimane Univ., No. 7, 75, Pl. 2, fig. 1 (Holotype), Pl. 2, figs. 2-3 (Paratype)
Holotype: DGSU PR 1025, Paratype: DGSU PR 1026 (Dept. Geol., Fac. Sci., Shimane Univ.)
Siliceous tuff from horizon Ko-33, Konomori lenticular body of the Kurosegawa Tectonic Zone, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °35.5'N, 133 °31.1'E
Konomori lenticular body of the Kurosegawa Tectonic Zone
Devonian

***Ceratoikiscum kurosegum* Aichison, Hada, Ireland & Yoshikura, 1996**

Jour. Southeast Asian Earth Sci., Vol. 14, 59, Pl. 1. fig. 7 (Holotype)
A radiolarian-bearing outcrop, southern flank of Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °35.0'N, 133 ° 30.0'E
Unit G4 of Yokokurayama Formation, Kurosegawa Terrane
Late Silurian

***Ceratoikiscum lyratum* Ishiga, 1988**

Geol. Rept. Shimane Univ., No. 7, 74, Pl. 1, fig. 4 (Holotype), Pl. 1 fig. 5 (Paratype)
Holotype: DGSU PR 1023, Paratype: DGSU PR 1024 (Dept. Geol., Fac. Sci., Shimane Univ.)
Siliceous tuff from horizon Ko-41, Konomori lenticular body of the Kurosegawa Tectonic Zone, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °35.5'N, 133 °31.1'E
Konomori lenticular body of the Kurosegawa Tectonic Zone
Devonian

***Ceratoikiscum turgidum* Umeda, 1998**

Paleont. Res. Vol. 2, 98, Fig. 5-4 (Holotype)
Holotype: OCU PR 0137 (Dept. Geosci., Osaka City Univ.)
Section B, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi

Prefecture, Shikoku, Japan; 33 °31.5'N, 133 °11.8'E
Nakahata Formation of the Yokokurayama Group
Emsian (late Early Devonian) - Eifelian (early Middle Devonian)

***Ceratoikiscum vimineum* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 179-180, Pl. 11, figs. 1a-1b (Holotype), Pl. 11, figs. 2a-3b, 5a-5b (Paratypes)
Holotype: ESN 146055, Paratypes: ESN 146056-146058 (Dept. Earth Sci., Nagoya Univ.)
Sample No52B, 1.8 km southwest of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °11.9'E
G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone
Middle Devonian

***Chitascenium cranites* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 5, Pl. 1, figs. 4a-4d (Holotype), Pl. 1, figs. 6a-b (Paratype)
Holotype: ESN 147054, Paratype: 147055 (Dept. Earth Sci., Nagoya Univ.)
Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E
Toyohama Formation
Early Miocene

***Cinguloturris fusiforma* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 93, Fig. 9-3 (Holotype), Fig. 9-4 (Paratype)
Holotype: IGUT-NH1731, Paratype: IGUT-NH1794 (Inst. Geosci., Univ. Tsukuba)
Sample YTZ-S, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
Mesozoic accretionary complex in the Inner Zone of Southwest Japan
Tithonian

***Cladococcus (?) nakasekoi* Nishimura A., 1992**

Micropaleontol., Vol. 38, 322, Pl. 11, fig. 2 (Holotype), Pl. 1, fig. 9, Pl. 11, fig. 5 (Paratypes)
Holotype: DSDP 384-10-5 (38-40 cm)-A, Q42/3, Paratypes: DSDP 384-10-6 (38-40 cm) LMMN AN0025-3; DSDP 384-10-5 (38-40 cm)-(1), D39/1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene, Lower Part of Bekoma campechensis Zone

***Clathrocycloma (?) catherinea* Nishimura A., 1992**

Micropaleontol., Vol. 38, 334, Pl. 4, fig. 10 (Holotype), Pl. 4, fig. 11 (Paratype)

Holotype: DSDP 384-7-3 (38-40 cm) LMMN AN0032-1, Paratype: DSDP 384-10-3 (38-40 cm) LMMN AN0036-1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, *Bekoma campechensis* to *Bekoma bidartensis* Zones

***Clathropyrgus (?) grandifenestra* Nishimura A., 1992**

Micropaleontol., Vol. 38, 336, Pl. 8, fig. 4 (Holotype), Pl. 13, fig. 16 (Paratype)

Holotype: DSDP 384-6-1 (38-40 cm), LMMN AN0001-3, Paratype: DSDP 384-6-4 (83-85 cm)-A, J52/1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Upper part of *Bekoma campechensis* Zone to *Bekoma bidartensis* Zone

***Collosphaera (?) solenochira* Sugiyama, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 194-195, Pl. 10, figs. 1a-1c (Holotype), Pl. 9, figs. 5-7, Pl. 10, figs. 2-4 (Paratypes)

Holotype: ESN 146864, Paratypes: ESN 146854, 146863, 146862, 146865, 146861, 146866 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E

Toyohama Formation

Early Miocene

***Conarachnium isozakiense* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 175, Text-fig. 8, Pl. 1, fig. 9 (Holotype)

Holotype: Reg. No. TKT 1006 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E

Isozaki Formation

Late Miocene

***Copicyntra? nuda* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 169, Pl. 5, fig. 1 (Holotype), Pl. 5, figs. 2-5 (Paratypes)

Holotype: ESN 146018, Paratypes: ESN 146019-146022 (Dept. Earth Sci., Nagoya Univ.)

Sample JM53, 550 m southward from Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °12.9'E

G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone

Early Devonian

***Copicyntra akikawaensis* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 530-531, Fig. 7-14 (Holotype), Fig. 7-15-17 (Paratypes)

Holotype: IGUT-KS3345, Paratypes: IGUT-KS0467, 3332, 3458 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Unit IV of the Unazawa Formation

Late Permian

***Cornutella? riedeli* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 41-42, Pl. 11, fig. 5 (Holotype), fig. 6 (Paratype)

Holotype: OCU MR 2349, Paratype: OCU MR 2352 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Cornutella cretacea* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 65-66, Pl. 6, figs. 5a, b (Holotype), Pl. 13, fig. 9 (Paratype)

Holotype: IGPS 97600, Paratype: IGPS 97601 (Inst. Geol. Paleont., Tohoku Univ.)

Sample My76-164 in Section KE along the Koefuenosawa, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °14.3'N, 142 °47.0'E (Holotype)

Efue Formation

Cretaceous

***Corum (?) delgado* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 151, Fig. 41-1 (Holotype), Fig. 41-2 (Paratype)

Holotype: ESN 148018, Paratype: ESN 148089 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Carnian

***Corythomelissa omoprominentia* Funakawa, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 180, 212-214, Fig. 5-2 (Holotype), Fig. 5-1 (Paratype)

Holotype: OCU CR-0035, Paratype: OCU CR-0036 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami

Group
Early Miocene

***Corythomelissa pachyostraca* Funakawa, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 180, 214, Fig. 6-1 (Holotype), Fig. 6-2 (Paratype)

Holotype: OCU CR-0037, Paratype: OCU CR-0038 (Dept. Geosci., Osaka City Univ.)

Loc. 90081306, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.8'N, 143 °46.3'E

Middle hard shale member of the Morawan Formation in the Kawakami Group

Late Oligocene

***Corythomelissa spinosa* Funakawa, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 180, 214, 216, Fig. 7-1 (Holotype), Fig. 7-2, 7-3 (Paratypes)

Holotype: OCU CR-0039, Paratypes: OCU CR-0040, 0041 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Late Oligocene to Late Miocene

***Cromyechinus pycnopora* Nishimura A., 1992**

Micropaleontol., Vol. 38, Pl. 11, fig. 3 (Holotype), Pl. 11, fig. 6, Pl. 1, fig. 10 (Paratypes)

Holotype: DSDP 384-10-5 (38-40 cm)-(2), W37/4, Paratypes: DSDP 384-10-4 (38-40 cm)-(2), F53/2; DSDP 384-11-1 (130-132 cm) LMMN AN0025-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Lower Part of Bekoma campechensis Zone

***Cromyomma riedeli* Nishimura A., 1992**

Micropaleontol., Vol. 38, 322, 324, Pl. 11, fig. 7 (Holotype), Pl. 1, fig. 6 (Paratype)

Holotype: DSDP 384-10-5 (38-40 cm)-(2), K37/4, Paratype: DSDP 384-6-1 (38-40 cm) LMMN AN0001-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Bekoma campechensis to Bekoma bidartensis Zones

***Cromyosphaera nipponica* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 9, Pl. III, figs. 1a, b

Reg. No. RAA 26 (St. No. 9) (Inst. Geol. Sci., Osaka Univ.)

Station No. 9 in the sea near Antarctica; 68 °31'S, 37 °12'E

Recent

***Cryptamphorella jawaensis* Okamoto, 1994**

Jour. Southeast Asian Earth Sci., Vol. 9, 50, Fig. 5-C (Holotype), Fig. 5-A (Paratype)

Holotype: 57737/1938, Paratypes: 56434/1938, 57748/1938, 57750/1938, 57755/1938, 57767/1938 (Dept. Earth and Planet. Sci., Nagoya Univ.)

Reddish brown shale clast in Paleogene breccia along the Medana River, Karangsambung area, central Java; ? 07 °30'S, 109 °30'E

Campanian (late Cretaceous)

***Cryptocapsa gregaria* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 305, Pl. 3, fig. 2 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Cryptogyrus trachylobus* Sugiyama, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 169, 65, 67-69, Figs. 19-1a-1e (Holotype), Figs. 19-2a-2b, Fig. 19-3, Figs. 19-4a-4b, Fig. 19-5, Figs. 20-1a-1b, Figs. 20-2a-2b (Paratypes)

Holotype: ESN 146527, Paratypes: ESN146528, 146529, 146530, 146531, 146532, 146533 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-27, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan ; 35 °22.4'N, 137 °15.0'E

Oidawara Formation

Early to Middle Miocene

***Cryptostephanidium? megaspinosum* Sashida & Kamata, 1999**

Jour. Paleont. Vol. 73, 773, 775, Fig. 6-11 (Holotype), Fig. 6-12, Fig. 6-13 (Paratypes)

Holotype: IGUT-KS5264, Paratypes: IGUT-KS5259, KS5287 (Inst. Geosci., Univ. Tsukuba)

Bedded limestone, about 3 km west of Kefamenadu, West Timor, Indonesia; ? 09 °20'S, 124 °20'E

Aitutu Formation

Middle Triassic (Ladinian)

***Cycladophora nakasekoi* Motoyama, 1996**

Micropaleontol., Vol. 42, 243-246, Plate 4, fig. 1 (Holotype)

Holotype: MPC-4960 (National Science Museum, Tokyo)

Tsugaru Section (JQ07), close to the Lake Jusan, Nakasato-cho, Kitatsugaru-gun, Aomori Prefecture, Japan; 41 °02.0'N, 140 ° 25.0'E

Fudonotaki Formation

Late Miocene, the range of *Cycladophora nakasekoi* is largely restricted to the upper part of the *Lychnocanoma magnacornuta*

Zone and the *C. davisiana cornutoides* Zone

***Cycladophora sakaii* Motoyama, 1996**

Micropaleontol., Vol. 42, 246, Plate 4, fig. 5 (Holotype)
 Holotype: MPC-4961 (National Science Museum, Tokyo)
 DSDP Site 302, Core 8, Section 1, Interval 50-52 cm; 40 °20.2'N,
 136 °54.0'E
 Late Miocene - Pliocene, *Lychnocanoma parallelipes* Zone
 through *Cycladophora sakaii* Zone

***Cyrtocalpis? propria* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 26, Pl. 1, fig. 10
 (Holotype), fig. 16 (Paratype)
 Holotype: OCU MR 2124, Paratype: OCU MR 2115 (Dept.
 Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma
 railroad station of the Takayama Line, Kagamigahara City, Gifu
 Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic

***Cyrtocapsa? kisoensis* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 37-39, Pl. 8, fig. 11
 (Holotype), fig. 10 (Paratype)
 Holotype: OCU MR 2298, Paratype: OCU MR 2296 (Dept.
 Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma
 railroad station of the Takayama Line, Kagamigahara City, Gifu
 Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic

***Cyrtocapsa (Cyrtocapsella) subconica* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 120, Pl.
 XI, figs. 9a, b
 Reg. No. 6 (Loc. A1)
 Locality A1, Joyama mudstone, at the Joyama along the Kubusu
 River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °
 34.7'N, 137 °09.0'E
 Higashibessyo Formation, Yatsuo Group
 Late Miocene

***Cyrtocapsa mastoidea* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 36-38, Pl. 8, fig. 3
 (Holotype), fig. 4 (Paratype)
 Holotype: OCU MR 2290, Paratype: OCU MR 2291 (Dept.
 Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma
 railroad station of the Takayama Line, Kagamigahara City, Gifu
 Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic

***Dactyliodiscus (?) rotundus* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 69-70,
 Fig. 5-17 (Holotype), Fig. 5-20 (Paratype)
 Holotype: IGUT-NH1725, Paratype: IGUT-NH1542 (Inst.
 Geosci., Univ. Tsukuba)
 Sample YTZ-T, YTZ Section near Odaira, Daigo-cho, Kuji-gun,
 Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
 Mesozoic accretionary complex in the Inner Zone of Southwest
 Japan
 Tithonian

***Deflandrella manica* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 99, Pl. 1, fig. 2 (Holotype)
 Holotype: UCB no. FSL167051 (Univ. Claude-Bernard Lyon I,
 collection Dept. Sci. Terre)
 Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho,
 Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E
 Tatsuno Formation
 Late Permian

***Deflantrica furutani* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 60-61, Pl. 2 fig. 3 (Holotype), Pl. 2,
 figs. 4-5 (Paratypes)
 Holotype: IGUT-TK0440, Paratypes: IGUT-TK0036, IGUT-TK0133
 (Inst. Geosci., Univ. Tsukuba)
 Sample 72507 (Holotype) and sample 72503 (Paratypes),
 Shibusudani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui
 Prefecture, Japan; 35 °52.6'N, 136 °45.1'E
 Kamianama Group
 Emisian to Eifelian (late Early Devonian to early Middle
 Devonian)

***Deflantrica solidum* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 168, Pl. 9, fig. 1
 (Holotype), Pl. 8, figs. 6-7, Pl. 9, figs. 2-3 (Paratypes)
 Holotype: ESN 146006, Paratypes: ESN 146007-146010 (Dept.
 Earth Sci., Nagoya Univ.)
 Sample KF39, southern side of Mt. Konomori, Kochi City,
 Kochi Prefecture, Shikoku, Japan; 33 °34.5'N, 133 °30.1'E
 G4 Formation of the Silurian and Devonian strata in the
 Kurosegawa Tectonic Zone
 Middle Devonian

***Dendrospyrus (?) sakaii* Sugiyama & Furutani, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOGAWA memorial
 volume, No. 19, 204-205, Pl. 20, figs. 4a-4c (Holotype)
 Holotype: ESN 146987 (Dept. Earth Sci., Nagoya Univ.)
 Sample OD-27, 1 km northwest from JR Mizunami Station,
 Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E
 Oidawara Formation
 Middle Miocene

***Dendrospyrus (?) suganoi* Sugiyama & Furutani, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 204, Pl. 20, figs. 6a-6c (Holotype)

Holotype: ESN 146989 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-26, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E

Oidawara Formation

Middle Miocene

***Dendrospyrus gollii* Nishimura A., 1992**

Micropaleontol., Vol. 38, 330, Pl. 3, fig. 2 (Holotype), Pl. 3, fig. 1, Pl. 12, fig. 11 (Paratypes)

Holotype: DSDP 384-6-1 (38-40 cm), LMMN AN0030-1,

Paratypes: DSDP 384-6-1 (38-40 cm), LMMN AN0001-4;

DSDP384-6-4 (83-85 cm)-A, F50/4 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Upper part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Devoniglansus brachiatus* Umeda, 1998**

Earth Sci. (Chikyu Kagaku), Vol. 52, 205-207, Fig. 4-1 (Holotype), Fig. 4-2 (Paratype)

Holotype: OCU PR 0191, Paratype: OCU PR 0192 (Dept. Geosci., Osaka City Univ.)

Section Yk2a, sample 8A, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.6'N, 133 °12.4'E

Joryu Formation of the Yokokurayama area in the Kurosegawa Terrane

Possible Pridoli (late Late Silurian)

***Devoniglansus unicus* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 172, Pl. 4, figs. 3a-3c (Holotype), Pl. 1, figs. 1a-2, fig. 4 (Paratypes)

Holotype: ESN 146027, Paratypes: ESN 146028-146030 (Dept. Earth Sci., Nagoya Univ.)

Sample JM53, 550 m southward of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °12.9'E

G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone

Early Devonian

***Diacanthocapsa? operculi* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 29-30, Pl. 2, fig. 19 (Holotype), fig. 18 (Paratype)

Holotype: OCU MR 2178, Paratype: OCU MR 2177 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Diacanthocapsa normalis* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 28-29, Pl. 2, fig. 1 (Holotype), fig. 3 (Paratype)

Holotype: OCU MR 2160, Paratype: OCU MR 2158 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Diceratigalea hemisphaera* Takemura & Nakaseko, 1982**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 128, 461-462, Pl. 72, figs. 1a-1d (Holotype), Pl. 72, figs. 2a-2e, Pl. 73, figs. 1a-1e (Paratypes)

Holotype: ATJRMN-1103-2, Paratypes: ATJRMN-1104-2, ATJRMN-1104-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

Sample TKN-105, manganese ore deposits, Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Manganese ore deposits in the Mino Belt

Jurassic

***Dicolocapsa aquastilla* Suzuki, 1995**

N. Jb. Geol. Palaont. Abh., Vol. 198, 281, Fig. 4-4 (Holotype), Fig. 4-3, Figs. 6-1a-1b (Paratype)

Holotype: KURS-0004, Paratypes: KURS-0003, 0014 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A chert block (sample UME-12114), Umenoki Valley, Kamikatsu-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °55.5'N, 134 °23.3'E

Umenoki Unit

Early Jurassic

***Dicolocapsa conoformis* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 13-14, Pl. 5, figs. 3a, 3b (Holotype), Pl. 5, figs. 6a, 6b, Pl. 1, figs. 3a, 3b (Paratypes)

Holotype: OCU MR 2548, Paratypes: OCU MR 2543, 2552 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E

Nishiyama Formation, Togano Formation (Karata, 1940) and their equivalent

early Late Jurassic

***Dicolocapsa kimurai* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 304-305, Pl. 3, fig. 1 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °

47.0°N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dicolocapsa torinokoensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 216, Pl. 2-4, fig. 2-18.

Odaira, northern part of Torinoko mountain block 5 km distant from a office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °46.0'N, 140 °19.7'E

***Dictyastrum robustum* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 302, Pl. 2, fig. 5 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dictyocephalus chinzeii* Suzuki, 1995**

N. Jb. Geol. Palaont. Abh., Vol. 198, 282, Fig. 5-1 (Holotype), Figs. 5-2a-2b, Figs. 6-3a-3b (Paratypes)

Holotype: KURS-0006, Paratypes: KURS-0007, 0016 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A chert block (sample UME-12114), Umenoki Valley, Kamikatsu-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °55.5'N, 134 °23.3'E

Umenoki Unit
Early Jurassic

***Dictyocephalus kamikatsuensis* Suzuki, 1995**

N. Jb. Geol. Palaont. Abh., Vol. 198, 284, Figs. 5-4a-4b (Holotype), Fig. 5-3, Figs. 6-5a-5b (Paratypes)

Holotype: KURS-0009, Paratypes: KURS-0008, 0018 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A chert block (sample UME-12114), Umenoki Valley, Kamikatsu-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °55.5'N, 134 °23.3'E

Umenoki Unit
Early Jurassic

***Dictyocephalus middouri* Nishimura A., 1992**

Micropaleontol., Vol. 38, 336, 338, Pl. 9, fig. 10 (Holotype), Pl. 9, fig. 12 (Paratype)

Holotype: DSDP 384-11-1 (130-132 cm), LMMN AN0027-2, Paratype: DSDP 384-10-3 (38-40 cm), LMMN AN0022-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Bekoma campechensis Zone

***Dictyocephalus umenokiensis* Suzuki, 1995**

N. Jb. Geol. Palaont. Abh., Vol. 198, 281-282, Figs. 4-5a-5b (Holotype), Figs. 6-2a-2b (Paratype)

Holotype: KURS-0005, Paratype: KURS-0015 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A chert block (sample UME-12114), Umenoki Valley, Kamikatsu-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °55.5'N, 134 °23.3'E

Umenoki Unit
Early Jurassic

***Dictyomitra brevisissima* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 310, Pl. 3, fig. 11 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dictyomitra extensa* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 309, Pl. 3, fig. 12 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dictyomitra fragosa* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 309-310, Pl. 3, fig. 16 (Holotype), Pl. 3, fig. 17 (Paratype) (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dictyomitra longicephala* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 310-311, Pl. 3, fig. 14 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7°E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Dictyomitra pessagnoii* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 77, Pl. 9, fig. 2 (Holotype)

Holotype: Reg. No. MTMN 2301-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample MN 2301, along a railway track, 15 km northwest of the

Shimoaso Station, Kawabe-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °31.3'N, 137 °06.2'E

Mino belt

Late Triassic (late Carnian)

(Xipha Blome, 1984)

***Dictyomitra urakawaensis* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 59, Pl. 4, figs. 8a, b (Holotype), Pl. 11, fig. 16 (Paratype)

Holotype: IGPS 97555, Paratype: IGPS 97524 (Inst. Geol. Paleont., Tohoku Univ.)

Sample TA22-02 in Section TA along the Tannebetsu River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °12.3'N, 142 ° 49.8'E (Holotype)

Utafue Formation

Cretaceous

***Dictyomitrella (?) kamoensis* Mizutani & Kido, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 132, 258-259, Pl. 53, fig. 2 (Holotype), Pl. 53, fig. 3 (Paratype)

Holotype: 12675/396, Paratype: 11643/391 (Dept. Earth Sci., Nagoya Univ.)

Kamiaso Bridge Section (sample 396), Kamiaso, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.0'N, 137 °07.7'E

Mesozoic-Paleozoic sedimentary complex of the Mino area, central Japan

Middle Jurassic

***Dictyomitrella deweveri* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 77, Pl. 10, fig. 9 (Holotype)

Holotype: Reg. No. MTTK 1707-4 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample TK 1707 (dark grey chert), a road-cut along the left bank of the Naka River, a few kilometers north of Wajiki-cho, Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33 °52.0'N, 134 °30.0'E

Nakagawa Group

Late Triassic (late Carnian and Norian)

(Triassicampe Dumitrica, Kozur and Mostler, 1980)

***Dictyophimus (?) constrictus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 338, Pl. 13, fig. 10 (Holotype), Pl. 10, fig. 16 (Paratype)

Holotype: DSDP 384-10-5 (38-40 cm)-C, R39/1, Paratype: DSDP 384-10-4 (38-40 cm) LMMN AN0023-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Lower part of Bekoma campechensis Zone

***Dictyophimus (?) okadai* Nishimura A., 1992**

Micropaleontol., Vol. 38, 338, 340, Pl. 8, fig. 7 (Holotype), Pl. 8, figs. 6, 8 (Paratypes)

Holotype: DSDP 384-10-4 (38-40 cm), LMMN AN0023-3, Paratypes: DSDP 384-9CC, LMMN AN0019-1; DSDP 384-10-4 (38-40 cm), LMMN AN0038-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Lowermost part of Bekoma campechensis Zone

***Dictyophimus robustus* Motoyama, 1996**

Micropaleontol., Vol. 42, 246, 248, Plate 6, fig. 2 (Holotype)

Holotype: MPC-4962 (National Science Museum, Tokyo)

DSDP Site 302, Core 8, Section 1, Interval 50-52 cm; 40 °20.2'N, 136 °54.0'E

Late Pliocene, *Dictyophimus robustus* Zone

***Diplocyclas pseudobicorona* Nishimura A., 1992**

Micropaleontol., Vol. 38, 340, Pl. 4, fig. 6 (Holotype), Pl. 4, fig. 4 (Paratype)

Holotype: DSDP 384-7-1 (83-85 cm), LMMN AN0005-4, Paratype: DSDP 384-7-3 (38-40 cm), LMMN AN0007-7 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Upper Part of Bekoma campechensis Zone and Bekoma bidartensis Zone

***Dorylonchidium (Dorylonchidium) magnaporulosum* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 77-78, Pl. II, fig. 6

Reg. No. 43 (Loc. A1)

Localities A1 and 2 Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Dreyericyrtium ithacanthum* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 151, 153, Fig. 40-8 (Holotype), Fig. 40-10 (Paratype)

Holotype: ESN 148019, Paratype: ESN 148220 (Dept. Earth Sci., Nagoya Univ.)

Section K, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-cho, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian to Rhaetian

***Dreyericyrtium virgispineum* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 153, Fig. 41-7 (Holotype)

Holotype: ESN 148021 (Dept. Earth Sci., Nagoya Univ.)

Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Carnian to Norian

***Droltus galerus* Suzuki, 1995**

N. Jb. Geol. Palaont. Abh., Vol. 198, 284, 286-287, Fig. 5-5 (Holotype), Fig. 5-6, Figs. 7-1a-1b (Paratypes)
Holotype: KURS-0010, Paratypes: KURS-0011, 0019 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A chert block (sample UME-12114), Umenoki Valley, Kamikatsu-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °55.5'N, 134 °23.3'E
Umenoki Unit
Early Jurassic

***Drymosphaera (?) pseudosagenoscena* Sugiyama, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 194, Pl. 9, figs. 1a, 1b (Holotype), Pl. 9, figs. 2a-4b (Paratypes)
Holotype: ESN 146851, Paratypes: ESN 146855, 146853, 146852 (Dept. Earth Sci., Nagoya Univ.)
Sample TH-2, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.7'N, 136 °57.0'E
Toyohama Formation
Early Miocene

***Dumitricaella (?) parva* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 153-154, Fig. 40-9 (Holotype), Fig. 40-11, 13 (Paratypes)
Holotype: ESN 148016, Paratype: ESN 148221, 148222 (Dept. Earth Sci., Nagoya Univ.)
Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Norian

***Ectonocorys spinosa* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 44-45, Pl. 11, fig. 15 (Holotype), fig. 13 (Paratype)
Holotype: OCU MR 2381, Paratype: OCU MR 2385 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic

***Ectotoxon xetton* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 6, Pl. 3, figs. 4a-4c (Holotype), Pl. 4, figs. 1a-2 (Paratypes)
Holotype: ESN 147067, Paratypes: 147068, 147069 (Dept. Earth Sci., Nagoya Univ.)
Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E
Toyohama Formation
Early Miocene

***Ellipsoxiphus tenuispinosus* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 298, Pl. 2, fig. 10 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Emiluvia(?) cochleata* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 70, Pl. 3, fig. 2 (Holotype)
Holotype: Reg. No. MTIN 13-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Red chert sample IN13, Unuma, Kagamigajara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.5'E
Mino Belt
Late Triassic

***Enalomelon inemestum* Sugiyama, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 195-196, Pl. 11, figs. 2a, 2b (Holotype), Pl. 11, fig. 1, figs. 3a-6 (Paratypes)
Holotype: ESN 146872, Paratypes: ESN 146871, 146873, 146874, 146875, 146876 (Dept. Earth Sci., Nagoya Univ.)
Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E
Toyohama Formation
Early Miocene

***Enoplocampe yehae* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 154, Fig. 41-5 (Holotype), Fig. 41-4 (Paratype)
Holotype: ESN 148022, Paratype: ESN 148091 (Dept. Earth Sci., Nagoya Univ.)
Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Late Carnian

***Entactinia itsukaichiensis* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 9-10, Pl. 1, fig. 4 (Holotype), Pl. 1, figs. 1-3, 5-10 (Paratypes)

Holotype: IGUT 5850, Paratypes: IGUT 5851-5857, 5859-5860 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Entactinia modesta* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 10, Pl. 2, fig. 1 (Holotype), Pl. 1, figs. 11-12, Pl. 2, figs. 2-6 (Paratypes)

Holotype: IGUT 5890, Paratypes: IGUT 5891-5897 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Entactinia morii* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1205, Fig. 12-8 (Holotype), Fig. 12-9 (Paratype)

Holotype: ESN 146165, Paratype: ESN 146166 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 49, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 ° 25.4'N, 136 ° 46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiyo Unit of Wakita (1988)

Early Triassic

***Entactinia nikorni* Sashida & Igo, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 168, 1302, Fig. 3-2 (Holotype), Fig. 3-3, Fig. 3-4, Fig. 3-5, Fig. 3-6, Fig. 3-7, Fig. 3-8, Fig. 3-10, Fig. 3-11 (Paratypes)

Holotype: IGUT-KS0001, Paratypes: IGUT-KS0017, 0019, 0016, 0020, 0021, 0022, 0029, 0031 (Inst. Geosci., Univ. Tsukuba)

Khao Chiak lies 5 to 6 km west of the city area of Phatthalung, southern Peninsular Thailand; ? 07 ° 30'N, 100 ° 0'E

Triassic, latest Spathian to earliest Anisian

***Entactinia reticulata* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 10-11, Pl. 2, fig. 7 (Holotype), Pl. 2, figs. 8-12 (Paratypes)

Holotype: IGUT 5920, Paratypes: IGUT 5921-5925 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °

43.3'N, 139 ° 12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Entactinosphaera? crassispinosa* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 12, Pl. 3, fig. 6 (Holotype), Pl. 3, figs. 7-12 (Paratypes)

Holotype: IGUT 5890, Paratypes: IGUT 5891-5896 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Entactinosphaera? elegans* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 41, Pl. 6, fig. 9 (Holotype), Pl. 6, figs. 7-8, fig. 10, Pl. 7, fig. 1 (Paratypes)

Holotype: ESN 145039, Paratypes: ESN145037-145038, 145040-145041 (Dept. Earth Sci., Nagoya Univ.)

Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 ° 12.6'N, 137 ° 31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Entactinosphaera? orientalis* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 11-12, Pl. 3, fig. 1 (Holotype), Pl. 3, figs. 2-5 (Paratypes)

Holotype: IGUT 5950, Paratypes: IGUT 5951-5954 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Entactinosphaera aubouini* Caridroit & De Wever, 1986**

Mar. Micropaleontol., Vol. 11, 75, 77, Pl. III, fig. 14 (Holotype)

Holotype: UCB no. FSL167067 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 ° 02.8'N, 134 ° 28.1'E

Tatsuno Formation

Late Permian

***Entactinosphaera brevispinosa* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 529, Fig. 7-9 (Holotype), Fig. 7-10-13 (Paratypes)

Holotype: IGUT-KS0455, Paratypes: IGUT-KS0432, 3316,

3346, 3347 (Inst. Geosci., Univ. Tsukuba)
Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E
Unit IV of the Unazawa Formation
Late Permian

***Entactinosphaera chiakensis* Sashida & Igo, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 168, 1302, 1304, Fig. 4-1 (Holotype), Fig. 4-2, Fig. 4-3, Fig. 4-4, Fig. 4-7 (Paratypes)

Holotype: IGUT-KS0003, Paratypes: IGUT-KS0041, 0044, 0042, 0045 (Inst. Geosci., Univ. Tsukuba)

Khao Chiak lies 5 to 6 km west of the city area of Phatthalung, southern Peninsular Thailand; ? 07 ° 30'N, 100 ° 0'E
Triassic, latest Spathian to earliest Anisian

***Entactinosphaera pseudocimelia* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 528-529, Fig. 7-1 (Holotype), Fig. 7-2-3, Fig. 7-6-8 (Paratypes)

Holotype: IGUT-KS0320, Paratypes: IGUT-KS0096, 0150, 0235, 0789, 3328 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Unit IV of the Unazawa Formation
Late Permian

***Entepipedus zophyi* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 7-8, Pl. 4, figs. 4a-4f (Holotype)

Holotype: ESN 147071 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 ° 42.8'N, 136 ° 56.6'E

Toyohama Formation
Early Miocene

***Eucyrtidiellum disparile* Nagai & Mizutani, 1990**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 159, 594-595, Fig. 3-8 (Holotype), Figs. 3-6, 3-7 (Paratypes)

Holotype: HNHK05-C3-46, Paratypes: HNHK05-C3-41, HNHK03-A3-44 (Dept. Earth Sci., Nagoya Univ.)

Kamiaso, Hichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 ° 32.9'N, 137 ° 7.8'E

Mino Terrane
Late Early Jurassic to Middle Jurassic

***Eucyrtidiellum nodosum* Wakita, 1988**

Bull. Geol. Surv. Japan, Vol. 39, 408, Pl. 4, fig. 29 (Holotype), Pl. 5, fig. 16 (Paratype)

Holotype: GSJ F10631-25a, Paratype: GSJ F10695-44c (Geological Museum, Geological Survey of Japan)

Siliceous shale (sample no. R38141) in the melange in the

Okukanayama route, Hida-Kanayama area, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 ° 40.5'N, 137 ° 08.8'E
Melange and related rock body in the Mino Terrane
Late Jurassic

***Eucyrtidiellum ozaiense* (Aita) see *Eucyrtidium* (?) *ozaiense* Aita**

***Eucyrtidiellum pyramis* (Aita) see *Eucyrtidium* (?) *pyramis* Aita**

***Eucyrtidiellum quinatum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 67, Pl. 12, fig. 18 (Holotype), Pl. 12, fig. 16-17 (Paratypoid)

Holotype: ATJRMN-1129-8, Paratypoid: ATJRMN-1125-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 ° 49.8'N, 136 ° 55.0'E

Mino Terrane
Middle Jurassic

***Eucyrtidiellum semifactum* Nagai & Mizutani, 1990**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 159, 595, Fig. 3-1 (Holotype), Figs. 3-3, 3-2, 3-4 (Paratypes)

Holotype: HNHK05-B4-52, Paratypes: HNHK05-B4-55, HNHK05-B1-35, HNHK04-D5-62 (Dept. Earth Sci., Nagoya Univ.)

Kutsuwano, 9 km north from JR Mino-Ohta Station, Mugi-cho, Mugi-gun, Gifu Prefecture, Japan; 35 ° 32.6'N, 137 ° 0.8'E

Mino Terrane
Middle Jurassic

***Eucyrtidiellum unumaense* (Yao) see *Eucyrtidium*? *unumaense* Yao**

***Eucyrtidium* (?) *manokawaensis humilis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 32-33, Pl. 4, fig. 10 (Holotype)

Holotype: IGUT-US35-1061 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 35), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 22.1'E

Furebira Formation
Cretaceous

***Eucyrtidium* (?) *manokawaensis manokawaensis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 32, Pl. 4, fig. 9 (Holotype), Pl. 10, figs. 1a, b (Paratype)

Holotype: IGUT-US35-0671, Paratype: IGUT-US35-27T2 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 35), 4 km east of JR

Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 22.1'E
Furebira Formation
Cretaceous

***Eucyrtidium* (?) *manokawaensis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 32, Pl. 4, fig. 9 (Holotype), Pl. 4, fig. 10, Pl. 10, figs. 1a, b (Paratypes)
Holotype: IGUT-US35-0671, Paratypes: IGUT-US35-1061, IGUT-US35-27T2 (Inst. Geosci., Univ. Tsukuba)
The Usotan Section (sample US 35), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 22.1'E
Furebira Formation
Cretaceous

***Eucyrtidium* (?) *ozaiense* Aita, 1986**

Micropaleontol. Vol. 32, 109, Pl. 6, fig. 1 (Holotype), Pl. 6, figs. 2-4 (Paratype)
Holotype: IGPS 98851, Paratype: IGPS 98852 (Inst. Geol. Paleont., Tohoku Univ.)
Sample SHR-12, Shiraishi River Section, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 ° 27.7'N, 133 ° 05.4'E
Komikuchi Formation
Late Tithonian
(*Eucyrtidiellum* Baumgartner, 1984)

***Eucyrtidium* (?) *pyramis* Aita, 1986**

Micropaleontol. Vol. 32, 109-110, Pl. 6, fig. 10 (Holotype), Pl. 6, fig. 8 (Paratype)
Holotype: IGPS 98853, Paratype: IGPS 98854 (Inst. Geol. Paleont., Tohoku Univ.)
Sample GOD-4, Kaminogo Section, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 ° 27.0'N, 133 ° 01.5'E
Komikuchi Formation
Late Tithonian
(*Eucyrtidiellum* Baumgartner, 1984)

***Eucyrtidium?* *unumaense* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 39-40, Pl. 9, fig. 7 (Holotype), fig. 2 (Paratype)
Holotype: OCU MR 2308, Paratype: OCU MR 2327 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 ° 23.7'N, 136 ° 57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic
(*Eucyrtidiellum* Baumgartner, 1984)

***Eucyrtidium asanoi* Sakai, 1980**

Init. Repts. DSDP, Vol. 56-57, 709-710, Pl. 7, figs. 13a, 13b, 13c (Holotype)
Holotype: IGPS coll. cat. no. 73817 (Inst. Geol. Paleont., Tohoku Univ.)
Sample 436-36-4, 35-37 cm, Site 436, Northwest Pacific, Leg 56, Deep Sea Drilling Project; 39 ° 56.0'N, 145 ° 33.5'E
Neogene

***Eucyrtidium cheni* Takemura, 1992**

Proc. ODP, Sci. Results, Vol. 120, 746, Pl. 4, figs. 1-2 (Holotype), Pl. 4, figs. 3-4 (Paratypes)
Holotype: HUTE-R-4003, Paratype: HUTE-R-4004 (Geoscience Institute, Hyogo University of Teacher Education)
ODP Leg 120, Hole 748B, Kerguelen Plateau in the southern Indian Ocean. Sample 120-748B-12H-7, 45-47 cm; 58 ° 26.5'S, 78 ° 58.9'E
Oligocene

***Eucyrtidium delmontense nipponicum* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 109-110, Pl. X, figs. 8a, b
Reg. No. 113 (Loc. A4)
Locality A4, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 ° 34.7'N, 137 ° 09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Eucyrtidium ichikawai* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 112-113, Pl. XI, figs. 1a, b
Reg. No. 139 (Loc. A5)
Locality A5, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 ° 34.7'N, 137 ° 09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Eucyrtidium lene* Sugiyama, 1992**

Jour. Earth Planet. Sci. Nagoya Univ., Vol. 39, 23, Pl. 23, figs. 6a, 6b (Holotype), Pl. 23, figs. 7a-9 (Paratypes)
Holotype: ESN 146775, Paratype: ESN 146776, 146777, 146778 (Dept. Earth Sci., Nagoya Univ.)
Type section of the Nobori Formation of the Toyohama Group, a small scale on the Pacific coast, Muroto City, Kochi Prefecture, Shikoku, Japan; 33 ° 22.0'N, 134 ° 03.5'E
Nobori Formation
Pliocene

***Eucyrtidium nishimurae* Takemura & Ling, 1997**

Mar. Micropaleontol., Vol. 30, 113, Pl. II, figs. 1-2 (Holotype), Pl. II, figs. 3-6 (Paratypes)
Holotype: HUTE-R-4021, Paratypes: HUTE-R-4022, 4023

(Geoscience Institute, Hyogo University of Teacher Education)
ODP Leg 114, Site 702. Site 702, central part of the Islas
Orcadas Rise in the western South Atlantic Ocean. Sample
114-702B-5X-2, 50-52 cm; 50 °56.8'S, 26 °22.1'W
Eocene

***Eucyrtidium spinosum* Takemura, 1992**

Proc. ODP, Sci. Results, Vol. 120, 746, Pl. 5, figs. 7-8
(Holotype), Pl. 5, figs. 5-6 (Paratype)
Holotype: HUTE-R-4005, HUTE-R-4006 (Geoscience Institute,
Hyogo University of Teacher Education)
ODP Leg 120, Hole 748B, Kerguelen Plateau in the southern
Indian Ocean. Sample 120-748B-15H-3, 45-47 cm; 58 °26.5'S,
78 °58.9'E
Late Eocene to early Oligocene

***Eucyrtidium yatsuoense* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 110-111,
Pl. X, figs. 1a, b
Reg. No. 141 (Loc. A5)
Locality A5, Joyama mudstone, at the Joyama along the Kubusu
River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °
34.7'N, 137 °09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Euscenarium microcapitalium* Funakawa, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 180, 216-217, Fig.
10-1 (Holotype), Fig. 10-2 (Paratype)
Holotype: OCU CR-0042, Paratype: OCU CR-0043 (Dept.
Geosci., Osaka City Univ.)
Loc. 90081306, along the Morawan-gawa River route on the
western side of the Shiranuka Hills region, Ashoro-cho,
Ashoro-gun, Hokkaido, Japan; 43 °17.8'N, 143 °46.3'E
Middle hard shale member of the Morawan Formation in the
Kawakami Group
Late Oligocene

***Eusyringium (?) foremanae* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 64, Pl. 6, figs.
1a, b (Holotype), Pl. 13, fig. 2 (Paratype)
Holotype: IGPS 97587, Paratype: IGPS 97588 (Inst. Geol.
Paleont., Tohoku Univ.)
Sample My76-70 in Section PR along the Ponrubeshibe River,
Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °17.4'N, 142 °
43.4'E (Holotype)
Utafue Formation
Cretaceous

***Eusyringium (Eusyringoma) nipponicum* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 114-115,
Pl. X, figs. 10a, b, Pl. XI, figs. 2a, b
Reg. No. 112 (Loc. A4)
Locality A1 and 4, Joyama mudstone, at the Joyama along the

Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan;
36 °34.7'N, 137 °09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Eusyringium (Eusyringoma) yatsuoense* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 115, Pl.
XI, figs. 4a, b
Reg. No. 8 (Loc. A1)
Locality A1, Joyama mudstone, at the Joyama along the Kubusu
River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °
34.7'N, 137 °09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Eusyringium isozakiense* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12,
194-195, Pl. 4, fig. 5 (Holotype), Pl. 4, fig. 6-7, 11, 12
(Paratypes?)
Holotype: Reg. No. TKT 1008, Paratypes?: Reg. No. TKT 1001,
1019, 1009, 1015 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka
Univ.)
The Isozaki Formation, along the coast of Isozaki, Nakaminato
City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
Isozaki Formation
Late Miocene

***Eusyringium japonicum* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12,
193-194, Text-fig. 20, Pl. 4, fig. 3 (Holotype), Text-fig. 21, Pl. 4,
figs. 1-2 (Paratypes?)
Holotype: Reg. No. TKT 1001, Paratypes?: Reg. No. TKT 1004,
1005 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
The Isozaki Formation, along the coast of Isozaki, Nakaminato
City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
Isozaki Formation
Late Miocene

***Follicuculls (?) charveti* Caridroit & De Wever, 1984**

Geobios, Vol. 17, 641, Pl. 1, fig. 17 (Holotype)
Holotype: FSL 167060 (Univ. Claude-Bernard Lyon I,
collection Dept. Sci. Terre)
Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho,
Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E
Tatsuno Formation
Late Permian

***Follicuculls falx* Caridroit & De Wever, 1984**

Geobios, Vol. 17, 641-642, Pl. 1, fig. 4 (Holotype)
Holotype: FSL 167061 (Univ. Claude-Bernard Lyon I,
collection Dept. Sci. Terre)
Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho,
Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E
Tatsuno Formation

Late Permian

***Follicuculls hamatus* Caridroit & De Wever, 1984**

Geobios, Vol. 17, 642, Pl. 1, fig. 9 (Holotype)

Holotype: FSL 167062 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Follicuculls orthogonus* Caridroit & De Wever, 1984**

Geobios, Vol. 17, 642, Pl. 1, fig. 13 (Holotype)

Holotype: FSL 167064 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Follicucullus bipartitus* Caridroit & De Wever, 1984**

Geobios, Vol. 17, 640-641, Pl. 1, fig. 1 (Holotype)

Holotype: FSL 167059 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Follicucullus furca* Caridroit & De Wever, 1986**

Mar. Micropaleontol., Vol. 11, 64-65, Pl. I, fig. 18 (Holotype)

Holotype: UCB no. FSL167066 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Follicucullus japonicus* Ishiga, 1991**

Mem. Fac. Sci., Shimane Univ., 25, 108-111, Pl. 1, fig. 5 (Holotype), Pl. 1, figs. 1-4, 6-8 (Paratypes)

Holotype: KUE PR 54-33, Paratypes: KUE PR 46-49, 46-51, 46-55, 46-56, 46-57, 54-21, 54-38 (Dept. Earth Sci., Kyoto Univ. Edu.)

Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 °14.9'N, 136 °22.9'E

Ikuri-dani Formation

Late Permian

***Follicucullus monacanthus* Ishiga & Imoto, 1982**

Earth Sci. (Chikyū Kagaku), Vol. 36, 276-277, Pl. 4, fig. 15 (Holotype), Pl. 4, figs. 16-17 (Paratypes)

Holotype: KUE PR 35-15, Paratypes: KUE PR35-12, 36-3

(Dept. Earth Sci., Kyoto Univ. Edu.)

Funaeda Section, Funaeda, Yagi-cho, Funai-gun, Kyoto Prefecture, Japan; 36 °06.7'N, 135 °31.7'E

Tamba Group

Middle Permian

***Follicucullus sphaericus* Takemura, 1999**

Geodiversitas, Vol. 21, 760, 762-763, Fig. 5A (Holotype), Figs. 5B, 5D (Paratypes)

Holotype: HUTE-R-4024, Paratypes: HUTE-R-4025, 4026 (Geoscience Institute, Hyogo University of Teacher Education)

A limestone lens, Arrow rocks in the Whangaroa area, New Zealand; 34 °59.7'S, 172 °47.9'E

Waipapa Terrane

Late Permian

***Follicucullus whangaroaensis* Takemura, 1999**

Geodiversitas, Vol. 21, 760, 763, Fig. 5G (Holotype), Figs. 5H, 5I (Paratypes)

Holotype: HUTE-R-4027, Paratypes: HUTE-R-4028, 4029 (Geoscience Institute, Hyogo University of Teacher Education)

A limestone lens, Arrow rocks in the Whangaroa area, New Zealand; 34 °59.7'S, 172 °47.9'E

Waipapa Terrane

Late Permian

***Foremanhelena triangula* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 106, Pl. 2, fig. 18 (Holotype)

Holotype: UCB no. FSL167057 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Fukujius yamakoshii* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 47, Pl. 9, fig. 4 (Holotype), Pl. 9, fig. 5 (Paratype)

Holotype: ESN 145064, Paratype: ESN 145065 (Dept. Earth Sci., Nagoya Univ.)

Point of I-4 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Fusalfanus? konomoriensis* Aichison, Hada, Ireland & Yoshikura, 1996**

Jour. Southeast Asian Earth Sci., Vol. 14, 66, Pl. 1, figs. 15, 19 (Holotype)

A radiolarian-bearing outcrop, southern flank of Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °35.0'N, 133 °30.0'E

Unit G4 of Yokokurayama Formation, Kurosegawa Terrane

Late Silurian

***Fusalfanus osobudaniensis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 38-39, Pl. 5, fig. 2 (Holotype), Pl. 5, figs. 3-5 (Paratypes)

Holotype: ESN 145024, Paratypes: ESN145025-145027 (Dept. Earth Sci., Nagoya Univ.)

Point of O-3 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Futobari? jingamoriensis* Aichison, Hada, Ireland & Yoshikura, 1996**

Jour. Southeast Asian Earth Sci., Vol. 14, 65, Pl. 3, fig. 6 (Holotype)

Jingamori, Hidaka-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °32.2'N, 133 °20.6'E

Unit G4 of Yokokurayama Formation, Kurosegawa Terrane

Late Silurian

***Futobari? tosaensis* Aichison, Hada, Ireland & Yoshikura, 1996**

Jour. Southeast Asian Earth Sci., Vol. 14, 65, Pl. 3, fig. 12 (Holotype)

Jingamori, Hidaka-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °32.2'N, 133 °20.6'E

Unit G4 of Yokokurayama Formation, Kurosegawa Terrane

Late Silurian

***Futobari morishitai* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 35, Pl. 2, fig. 1 (Holotype), Pl. 1, fig. 5, Pl. 2, figs. 2-3 (Paratypes)

Holotype: ESN 145006, Paratypes: ESN145005, ESN145007-8 (Dept. Earth Sci., Nagoya Univ.)

Point of I-7 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 ° 13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Futobari solidus* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 34, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 2-4 (Paratypes)

Holotype: ESN 145001, Paratypes: ESN 145002-4 (Dept. Earth Sci., Nagoya Univ.)

Point of I-7 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 ° 13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Genetrix petrushevskayae* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 5-6, Pl. 3, figs. 1a-1c (Holotype), Pl. 3, figs. 2a-3 (Paratypes)

Holotype: ESN 147064, Paratypes: 147065, 147066 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E

Toyohama Formation

Early Miocene

***Glanta fragilis* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 181, Pl. 12, figs. 4a-4c (Holotype), Pl. 12, figs. 1-3, figs. 5a-5b (Paratypes)

Holotype: ESN 146042, Paratypes: ESN 146043-146046 (Dept. Earth Sci., Nagoya Univ.)

Sample No52B, 1.8 km southwest of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °11.9'E

G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone

Middle Devonian

***Glanta triangularis* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 182, Pl. 13, fig. 2 (Holotype), Pl. 13, fig. 1, figs. 3-4 (Paratypes)

Holotype: ESN 146049, Paratypes: ESN 146050-146052 (Dept. Earth Sci., Nagoya Univ.)

Sample NN22, 1.4 km southwest of Mt. Yokokura, Ochi -cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °12.3'E

G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone

Middle Devonian

***Glanta yokokurayamaensis* Umeda, 1998**

Paleont. Res. Vol.2, 101, 103, Fig. 5-10 (Holotype)

Holotype: OCU PR 0143 (Dept. Geosci., Osaka City Univ.)

Section C, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.5'N, 133 °12.3'E

Nakahata Formation of the Yokokurayama Group

Possible Eifelian (early Middle Devonian)

***Glomeropyle (?) galagala* Aita, 1999**

Geodiversitas, Vol. 21, 516, 518, 520, Figs. 11-A-C (Holotype)

Holotype: UTU107 (Geol. Dept., Utsunomiya Univ.)

Sample P04/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (early Ladinian)

***Glomeropyle aurora* Aita, 1999**

Geodiversitas, Vol. 21, 514-516, Figs. 8-A-C (Holotype), Figs. 8-D-F (Paratypes)

Holotype: UTU101, Paratypes: UTU102, UTU103 (Geol. Dept., Utsunomiya Univ.)

Sample PO4/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (Anisian to early Ladinian)

***Glomeropyle grantmackiei* Aita, 1999**

Geodiversitas, Vol. 21, 520, Figs. 11-D-F (Holotype), Figs. 12-A-B, F (Paratypes)

Holotype: UTU108, Paratypes: UTU109, UTU110 (Geol. Dept., Utsunomiya Univ.)

Sample PO4/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (early Ladinian)

***Glomeropyle mahinepuaensis* Aita, 1999**

Geodiversitas, Vol. 21, 520-521, 523, Figs. 13-A-B (Holotype), Figs. 13-D-E, Figs. 13-H-I (Paratypes)

Holotype: UTU111, Paratypes: UTU112, UTU113 (Geol. Dept., Utsunomiya Univ.)

Sample PO4/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (early Ladinian)

***Glomeropyle poinui* Aita, 1999**

Geodiversitas, Vol. 21, 516, Figs. 10-A-B (Holotype), Figs. 10-C-E (Paratypes)

Holotype: UTU104, Paratypes: UTU105, UTU106 (Geol. Dept., Utsunomiya Univ.)

Sample PO4/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (early Ladinian)

***Glomeropyle waipapaensis* Aita, 1999**

Geodiversitas, Vol. 21, 523, Figs. 14-A-B (Holotype)

Holotype: UTU114 (Geol. Dept., Utsunomiya Univ.)

Sample PO4/f103 (=MAH-3.5), Mahinepua Peninsula, North Island, New Zealand. Grid reference P04/88618928, Whangaroa sheet P04, New Zealand 1:50,000 topographical map series

NZMS 260; 34 °59.8'S, 173 °50.8'E

Waipapa Terrane

Middle Triassic (early Ladinian)

***Gomisterna hospes* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 9, Pl. 5, figs. 1a-1e (Holotype)

Holotype: ESN 147072 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E

Toyohama Formation

Early Miocene

***Gondwanaria cylindrica* Funakawa, 2000**

Micropaleontol., Vol. 46, 101, 105, Pl. 1, figs. 2a-2c (Holotype), Pl. Pl. 1, figs. 3a-3b (Paratype)

Holotype: OCUCR 0047, Paratype: OCUCR 0048 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Gondwanaria kiroensis* Funakawa, 2000**

Micropaleontol., Vol. 46, 105, Pl. 2, figs. 1a-1d (Holotype), Pl. 2, figs. 2a-2d (Paratype)

Holotype: OCUCR 0049, Paratype: OCUCR 0050 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Gongylothorax oblonga* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 27-28, Pl. 1, fig. 25 (Holotype), fig. 28 (Paratype)

Holotype: OCU MR 2144, Paratype: OCU MR 2139 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Gongylothorax sakawaensis* Matsuoka, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 74-75, Pl. 1, fig. 1 (Holotype), Pl. 1, fig. 2 (Paratype)

Holotype: OCU MR 2482, Paratype: OCU MR 2481 (Dept. Geosci., Osaka City Univ.)

Loc. VII-0503, southwestern part of the Sakawa area, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °28.3'N, 133 °13.7'E

Nishiyama Formation, Sakawa area, Shikoku
Late Jurassic

***Goodbodium elegans* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 43-44, Pl. 7, fig. 10 (Holotype), Pl. 8, figs. 1-3 (Paratypes)

Holotype: ESN 145050, Paratypes: ESN145051-145053 (Dept. Earth Sci., Nagoya Univ.)

Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Goodbodium nishiyamai* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 44, Pl. 8, fig. 4 (Holotype), Pl. 8, figs. 5-7 (Paratypes)

Holotype: ESN 145054, Paratypes: ESN145055-145057 (Dept. Earth Sci., Nagoya Univ.)

Point of I-3 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Gorgansium crassum* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 115-116, Pl. 1, fig. 23 (Holotype), Pl. 1, figs. 24-25 (Paratypes)

Holotype: UOK-R2-51-06, Paratypes: UOK-R2-51-07, UOK-R2-51-08 (Dept. Geol., Osaka Kyoiku Univ.)

Loc. 109, bedded chert, about 3 m in thickness, with frequent intercalation of tuffaceous layers, along the Kagikake Valley, Saku-cho, Minamisaku-gun, Nagano Prefecture, Japan; 36 °06.3'N, 138 °36.8'E (Holotype)

"Ryogami" Formation

Late Triassic to Early Jurassic

***Gorgansium gongyloideum* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 116, Pl. 1, fig. 21 (Holotype), Pl. 1, fig. 22 (Paratype)

Holotype: UOK-R2-51-01, Paratype: UOK-R2-51-02 (Dept. Geol., Osaka Kyoiku Univ.)

Loc. 230, black siliceous mudstone, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36 °04.8'N, 138 °41.0'E (Holotype)

"Ryogami" Formation

Early Jurassic

***Grandetortura nipponica* Sashida & Tonishi, 1991**

Micropaleontol., Vol. 37, 92, 94, Pl. 1, fig. 1 (Holotype), Pl. 1,

figs. 2-4, 7 (Paratypes)

Holotype: IGUT-KS3319, Paratypes: IGUT-KS3318, 3518, 3345, 3533 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Unit IV of the Unazawa Formation

Late Permian

***Haekelicyrtium breviora* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 155, Fig. 42-5 (Holotype), Fig. 42-6-8 (Paratypes)

Holotype: ESN 148023, Paratypes: ESN 148228, 148229, 148230 (Dept. Earth Sci., Nagoya Univ.)

Section P, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Rhaetian

***Haekelicyrtium teren* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 155-156, Fig. 42-2 (Holotype), Figs. 42-3, 4, 9 (Paratypes)

Holotype: ESN 148025, Paratype: ESN 148225, 148226, 148227 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Hagiastrum (?) pacificum* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 156-157, Fig. 43-2 (Holotype), Fig. 43-1 (Paratype)

Holotype: ESN 148232, Paratype: ESN 148231 (Dept. Earth Sci., Nagoya Univ.)

Section K, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian to Rhaetian

***Halidictyum haekelii* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 301, Pl. 2, fig. 12 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

Haliomma (Haliomilla) subglobosum Nakaseko, 1955

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 85, Pl. IV, figs. 2a, b

Reg. No. 51 (Loc. A2)

Localities A2 and 3, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group
Late Miocene

Haplentactinia ? ichikawai Caridroit & De Wever, 1984

Geobios, Vol. 17, 642-643, Pl. 1, fig. 28 (Holotype)

Holotype: FSL 167065 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation
Late Permian

Haplentactinia? ozawai Furutani, 1990

Jour. Earth Sci. Nagoya Univ., Vol. 37, 40-41, Pl. 6, fig. 3 (Holotype), Pl. 6, figs. 4-6 (Paratypes)

Holotype: ESN 145033, Paratypes: ESN145034-145036 (Dept. Earth Sci., Nagoya Univ.)

Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

Hataina ovata Huang, 1967

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 68, 178-180, Pl. 17, figs. 1-3 (Holotype), Pl. 17, figs. 4-6, Pl. 18, figs. 1-4, Pl. 19, figs. 1-6 (Paratypes)

Holotype: IGPS no. 88026 (Inst. Geol. Paleont., Tohoku Univ.)

Locality No. 409, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture, Kyushu, Japan; 28 °20.4'N, 130 °01.0'E

Somachi Formation
Pliocene

Helenifore planus Umeda, 1997

Earth Sci. (Chikyu Kagaku), Vol. 51, 418, Pl. 1, fig. 6 (Holotype), Pl. 1, Fig. 7 (Paratype)

Holotype: OCU PR 0043, Paratype: OCU PR 0044 (Dept. Geosci., Osaka City Univ.)

Acidic tuff (Sample 1C), 100 m southwest from Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °34.5'N, 133 °30.0'E

Yokokurayama Group in the Kurosegawa Terrane
Pridolian (late Late Silurian)

Helioentactinia? prismspinosa Wakamatsu, Sugiyama & Furutani, 1990

Jour. Earth Sci. Nagoya Univ., Vol. 37, 168-169, Pl. 6, fig. 1 (Holotype), Pl. 5, figs. 6-8, Pl. 6, fig. 2 (Paratype)

Holotype: ESN146011, Paratypes: ESN 146012-146016 (Dept. Earth Sci., Nagoya Univ.)

Sample JM53, 550 m southward from Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.7'N, 133 °12.9'E

G4 formation of the Yokokura-yama Group of the Kurosegawa Tectonic Zone
Early Devonian

Helioentactinia nazarovi Sashida & Tonishi, 1985

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 12-13, Pl. 4, fig. 1 (Holotype), Pl. 4, figs. 2-4 (Paratypes)

Holotype: IGUT 6010, Paratypes: IGUT 6011-6013 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

Hexacantium (Hexacantosa) nipponicum Nakaseko, 1955

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 84-85, Pl. III, figs. 5a, b, c

Reg. No. 183 (Loc. B1)

Localities A1, 2, 3, 4 and 5, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 °36.0'N, 137 °06.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

Hexasaturnalis hexagonus (Yao) see Spongosaturnalis? hexagonus Yao

Hexasaturnalis inuyamensis (Yao) see Spongosaturnalis? inuyamensis Yao

Hexasaturnalis minoensis (Yao) see Spongosaturnalis? minoensis Yao

Hexasaturnalis septispinus (Yao) see Spongosaturnalis? septispinus Yao

Hexasaturnalis tetraspinus (Yao) see Spongosaturnalis? tetraspinus Yao

Hexastylus bellaturus Ichikawa, 1950

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 295, Pl. 1, fig. 13 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 ° 08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

? *Hexastylus (Hexastylurus) tonamiensis* Nakaseko, 1955

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 82-83, Pl. V, figs. 2, 3a, b
Reg. No. 166 (Loc. B1)
Locality A1, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 ° 36.0'N, 137 ° 06.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Hilarisirex quadrangularis* Takemura & Nakaseko, 1982**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 128, 458-461, Pl. 70, figs. 1a-1f (Holotype), Pl. 70, figs. 2a-2c, Pl. 71, figs. 1a-2e (Paratypes)
Holotype: ATJRMN-1101-1, Paratypes: ATJRMN-1103-1, ATJRMN-1102-1, ATJRMN-1104-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
Manganese ore deposits, Inuyama area, Unuma, Kagamigahara City, Gifu Prefecture; 35 ° 23.8'N, 136 ° 57.5'E
Manganese ore deposits in the Mino Belt
Jurassic

***Hinedorcus holdsworthi* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1201, Figs. 12-5a, 5b (Holotype)
Holotype: ESN 146158 (Dept. Earth Sci., Nagoya Univ.)
Sample KIN 37, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 ° 25.4'N, 136 ° 46.9'E
Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
Early and Middle Triassic

***Holdsworthum japonicus* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 45-46, Pl. 8, fig. 8 (Holotype), Pl. 8, fig. 9-10, Pl. 9, fig. 1 (Paratypes)
Holotype: ESN 145058, Paratypes: ESN145059-145061 (Dept. Earth Sci., Nagoya Univ.)
Point of I-8 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 ° 13.0'N, 137 ° 31.5'E
Yoshiki Formation (s. l.)
Presumed to be latest Silurian or early Devonian

***Holocryptocanium barbui japonicum* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 154,

Pl. 3, figs. 5a, b, 6, 7a, b, Pl. 14, fig. 10 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Reg. No. MITK2502, Anan City, Tokushima Prefecture, Shikoku, Japan; 33 ° 51.7'N, 134 ° 38.0'E
Shimanto Group
Cretaceous (approximately Albian to Cenomanian)

***Hozmadia gifuensis* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1194, 1196, Figs. 9-6 (Holotype), Figs. 9-7-8 (Paratypes)
Holotype: ESN 146119, Paratypes: ESN 146117-146118 (Dept. Earth Sci., Nagoya Univ.)
Sample KIN 61, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 ° 25.4'N, 136 ° 46.9'E
Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
Middle Triassic

***Hozmadia ozawai* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1193-1194, Figs. 9-4a, 4b (Holotype), Fig. 9-5 (Paratype)
Holotype: ESN 146112, Paratype: ESN 146113 (Dept. Earth Sci., Nagoya Univ.)
Sample KIN 40, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 ° 25.4'N, 136 ° 46.9'E
Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
Early Triassic

***Hozmadia spinifera* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 157, Fig. 44-2 (Holotype), Fig. 44-1 (Paratype)
Holotype: ESN 148026, Paratype: ESN 148102 (Dept. Earth Sci., Nagoya Univ.)
Section C, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 ° 24.1'N, 136 ° 58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Anisian

***Hsuum (?) matsukoi* Isozaki & Matsuda, 1985**

Earth Sci. (Chikyu Kagaku), Vol. 39, 438-439, Pl. 3, fig. 1 (Holotype), Pl. 3 fig. 3 (Paratype)
Holotype: YUR 21, Paratype: YUR 24 (Dept. geol. Mineral. Sci., Yamaguchi Univ.)
Manganese micronodules in the bedded chert, along the southern bank of the Hida River, approximately 150 m east of the Kamiaso Bridge, Hisuikyo, Kamiaso area, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 ° 32.9'N, 137 ° 7.8'E
Uppermost part of the bedded chert sequence in the Mino Belt
Late Early to early Middle Jurassic (Late Pliensbachian to

Bajocian?)

***Hsuum altile* Hori R. & Otsuka, 1989**

Jour. Geosci., Osaka City Univ., Vol. 32, 180-181, Pl. 1, fig. 1 (Holotype), fig. 6 (Paratype)

Holotype: OCU MR 4020, Paratype: OCU MR 4025 (Dept. Geosci., Osaka City Univ.)

An outcrop along a valley, about 2 km north of Kanayama Village, Azumi-mura, Azumi-gun, Nagano Prefecture, Japan; 36 °7.6'N, 137 °27.5'E

Yukawa Complex

Early Jurassic

***Hsuum fukazawaense* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 17-18, Pl. 4, fig. 1 (Holotype), Pl. 4, figs. 4, 2, 5, 9, 10 (Paratypes)

Holotype: IGUT-KS 3294, Paratypes: IGUT-KS3283, 3302, 3301, 3292, 3298 (Inst. Geosci., Univ. Tsukuba)

Sample YOZ-4 in Yozawa Section, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °46.3'N, 139 °09.9'E (Holotype)

Unit I of Unazawa Formation

Early Jurassic

***Hsuum hisuikyoense* Isozaki & Matsuda, 1985**

Earth Sci. (Chikyu Kagaku), Vol. 39, 437-438, Pl. 2, fig. 11 (Holotype), Pl. 2, fig. 10 (Paratype)

Holotype: YUR 34, Paratype: YUR 33 (Dept. geol. Mineral. Sci., Yamaguchi Univ.)

Manganese micronodules in the bedded chert, along the southern bank of the Hida River, approximately 150 m east of the Kamiaso Bridge, Hisuikyo, Kamiaso area, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.9'N, 137 °7.8'E

Uppermost part of the bedded chert sequence in the Mino Belt

Late Early to early Middle Jurassic (Late Pliensbachian to Bajocian?)

***Hsuum infirmum* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 17, Pl. 3, figs. 1, 20 (Holotype), Pl. 3, figs. 2-3 (Paratypes)

Holotype: IGUT-KS0771, Paratypes: IGUT-KS0779, 0773 (Inst. Geosci., Univ. Tsukuba)

Sample TAK-A, Takarazawa Section, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °45.5'N, 139 °10.5'E (Holotype)

Fukazawa Formation

Early Jurassic

***Hsuum minoratum* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 16-17, Pl. 2, fig. 9 (Holotype), Pl. 2, figs. 6-8 (Paratypes)

Holotype: IGUT-KS0614, Paratypes: IGUT-KS0601, 0785, 3377 (Inst. Geosci., Univ. Tsukuba)

Sample TAK-A', Takarazawa Section, Itsukaichi-cho,

Nishitama-gun, Tokyo Prefecture, Japan; 35 °45.5'N, 139 °10.5'E (Holotype)

Fukazawa Formation

Early Jurassic

***Hsuum primum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 50, Pl. 5, figs. 17-18 (Holotype), Pl. 5, figs. 19-21 (Paratypes)

Holotype: ATJRMN-1127-12, Paratypes: ATJRMN-1133-3, 1111-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Ishigaum obesum* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 100, Pl. 1, fig. 9 (Holotype)

Holotype: UCL no. FSL167053 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Ishigaum trifustis* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 99-100, Pl. 1, fig. 11 (Holotype)

Holotype: UCL no. FSL167052 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Jacus wakitai* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 45-46, Pl. 3, figs. 19-21 (Holotype), Pl. 4, figs. 1-2 (Paratype)

Holotype: ATJRMN-1128-6, Paratype: ATJRMN-1128-7 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Kashiwara magna* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 15, Pl. 5, fig. 6 (Holotype), Pl. 5, figs. 4-5, 7-12 (Paratypes)

Holotype: IGUT 6080, Paratypes: IGUT 6081-6088 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu

System
Late Permian

***Katroma elliptica* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 116-117, Pl. 3, fig. 1 (Holotype), Pl. 3, figs. 2-4 (Paratypes)
Holotype: UOK-R2-02-01, Paratypes: UOK-R2-02-03, UOK-R2-02-02, UOK-R2-02-04 (Dept. Geol., Osaka Kyoiku Univ.)
Loc. 230, black siliceous mudstone, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36°04.8'N, 138°41.0'E (Holotype)
"Ryogami" Formation
Early Jurassic

***Katroma kurusuensis* Hori R., 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 553-554, Fig. 6, 1a-c (Holotype), Fig. 6, 5 (Paratype)
Holotype: OCU MR 4000, Paratype: OCU MR 4001 (Dept. Geosci., Osaka City Univ.)
Kurusu Section, Inuyama area, Inuyama City, Aichi Prefecture, Japan; 35°25.0'N, 136°58.0'E
Sedimentary complex of the Mino Terrane in the Inner Zone of Southwest Japan
Middle Early Jurassic (Sinemurian to Pliensbachian)

***Katroma triangularis* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 117-118, Pl. 3, fig. 5 (Holotype), Pl. 3, figs. 6-7 (Paratypes)
Holotype: UOK-R2-02-10, Paratypes: UOK-R2-02-11, UOK-R2-02-12 (Dept. Geol., Osaka Kyoiku Univ.)
Loc. 284-05, black siliceous mudstone, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36°05.0'N, 138°40.9'E (Holotype)
"Ryogami" Formation
Early Jurassic

***Latentibifistula asperspongiosa* Sashida & Tonishi, 1986**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 7, 7, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 4-6, 8, 11 (Paratypes)
Holotype: IGUT 7151, Paratypes: IGUT 7152-7153, 7155 (Inst. Geosci., Univ. Tsukuba)
Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35°43.3'N, 139°12.9'E
Lenticular chert body in shale of the Unit B of the Chichibu System
Late Permian

***Latentifistula similiculis* Caridroit & De Wever, 1986**

Mar. Micropaleontol., Vol. 11, 78-79, Pl. IV, fig. 4 (Holotype)
Holotype: UCB no. FSL167068 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)
Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho,

Sayou-gun, Hyogo Prefecture, Japan; 35°02.8'N, 134°28.1'E
Tatsuno Formation
Late Permian

***Laxtorum (?) carnicum* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 158, Fig. 41-17 (Holotype)
Holotype: ESN 148028 (Dept. Earth Sci., Nagoya Univ.)
Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Carnian

***Laxtorum (?) jurassicum* Isozaki & Matsuda, 1985**

Earth Sci. (Chikyū Kagaku), Vol. 39, 435-436, Pl. 1, fig. 1 (Holotype), Pl. 1, fig. 6 (Paratype)
Holotype: YUR 1, Paratype: YUR10 (Dept. geol. Mineral. Sci., Yamaguchi Univ.)
Manganese micronodules in the bedded chert, along the southern bank of the Hida River, approximately 150 m east of the Kamiasso Bridge, Hisuikyo, Kamiasso area, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35°32.9'N, 137°7.8'E
Uppermost part of the bedded chert sequence in the Mino Belt
Late Early to early Middle Jurassic (Late Pliensbachian to Bajocian?)

***Laxtorum hichisoense* Isozaki & Matsuda, 1985**

Earth Sci. (Chikyū Kagaku), Vol. 39, 436-437, Pl. 2, fig. 2 (Holotype), Pl. 2, fig. 5 (Paratype)
Holotype: YUR 16, Paratype: YUR 18 (Dept. geol. Mineral. Sci., Yamaguchi Univ.)
Manganese micronodules in the bedded chert, along the southern bank of the Hida River, approximately 150 m east of the Kamiasso Bridge, Hisuikyo, Kamiasso area, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35°32.9'N, 137°7.8'E
Uppermost part of the bedded chert sequence in the Mino Belt
Late Early to early Middle Jurassic (Late Pliensbachian to Bajocian?)

***Liosphaera (Craspedomma) antarctica* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 4-5, Pl. I, figs. 1 a,b,c, figs. 2 a,b,c
Reg. No. RAA 48 (St. No. 6), Reg. No. RAA 36 (St. No. 6) (Inst. Geol. Sci., Osaka Univ.)
Station No. 6 in the sea near Antarctica; 68°17.1'S, 31°38.0'E
Recent

***Lipmanella oligocenica* Funakawa, 2000**

Micropaleontol., Vol. 46, 107, Pl. 3, figs. 1a-1c (Holotype)
Holotype: OCUCR 0051 (Dept. Geosci., Osaka City Univ.)
Loc. 90081306, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43°17.8'N, 143°46.3'E

Middle hard shale member of the Morawan Formation in the Kawakami Group
Late Oligocene

***Lipmanella rawanensis* Funakawa, 2000**

Micropaleontol., Vol. 46, 107-108, Pl. 3, figs. 3a-3c (Holotype)
Holotype: OCUCR 0053 (Dept. Geosci., Osaka City Univ.)
Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E
Mudstone member of the Kiroro Formation in the Kawakami Group
Early Miocene

***Liriospyris insulae* Nishimura A., 1992**

Micropaleontol., Vol. 38, 330, Pl. 12, fig. 12 (Holotype), Pl. 3, figs. 5-6 (Paratypes)
Holotype: DSDP 384-9-1 (38-40 cm)-(2), A51/4, Paratypes: DSDP 384-9-1 (38-40 cm), LMMN AN0015-1; DSDP 384-9CC LMMN AN0019-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene. Lower part of Bekoma campechensis Zone

***Lithapium rigidum* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 297-298, Pl. 1, fig. 19 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Lithelius barbatus* Motoyama, 1996**

Micropaleontol., Vol. 42, 243, Plate 3, fig. 13 (Holotype)
Holotype: MPC-4959 (National Science Museum, Tokyo)
DSDP Site 302, Core 12, Section 1, Interval 50-52 cm; 40 ° 20.2'N, 136 °54.0'E
Near the Miocene-Pliocene boundary

***Lithocampe pentagonale* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 312-313, Pl. 3, fig. 15 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Lithocorys nipponica* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 311, Pl. 3, fig. 13 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine,

Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Lithocorys pseudocretacea* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 311-312, Pl. 3, fig. 20 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Lithomelissa trifoliolata* Funakawa, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 180, 217-218, Fig. 10-3 (Holotype), Fig. 10-4 (Paratype)
Holotype: OCU CR-0044, Paratype: OCU CR-0045 (Dept. Geosci., Osaka City Univ.)
Loc. 90081306, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.8'N, 143 °46.3'E
Middle hard shale member of the Morawan Formation in the Kawakami Group
Late Oligocene

***Lithopera renzae spiculosa* Funayama, 1988**

Tohoku Univ., Inst., Geol. Pal., Contr., No. 91, 32, Pl. 4, figs. 8a-b (Holotype)
Holotype: IGPS 99766 (Inst. Geol. Paleont., Tohoku Univ.)
Sample ISK18, Suzu area, Suzu City, Ishikawa Prefecture, Japan; 37 °27.7'N, 137 °17.2'E
Najimi Formation
Miocene

***Livarella gifuensis* Yoshida, 1986**

Jour. Earth Sci. Nagoya Univ., Vol. 34, 15, Pl. 2, fig. 6 (Holotype), Pl. 2, figs. 8-10 (Paratype)
Holotype: 35191/1046, Paratype: 36125/1046 (Dept. Earth Sci., Nagoya Univ.)
Loc. No. T1-46, Kagamigahara Section, Kagamigahara City, Gifu Prefecture, Japan; 35 °25.7'N, 136 °48.0'E
A large sheet of bedded chert in Mesozoic sedimentary complex
Probably early Rhetian

***Livarella longus* Yoshida, 1986**

Jour. Earth Sci. Nagoya Univ., Vol. 34, 14-15, Pl. 2, figs. 4-5 (Holotype), Pl. 2, fig. 3 (Paratype)
Holotype: 36228/2046, 36229/2046, Paratype: 34662/1013 (Dept. Earth Sci., Nagoya Univ.)
Loc. No. T1-46, Kagamigahara Section, Kagamigahara City, Gifu Prefecture, Japan; 35 °25.7'N, 136 °48.0'E
A large sheet of bedded chert in Mesozoic sedimentary complex
Probably early Rhetian

***Livarella validus* Yoshida, 1986**

Jour. Earth Sci. Nagoya Univ., Vol. 34, 14, Pl. 3, fig. 1 (Holotype), Pl. 3, figs. 2-3 (Paratypes)
 Holotype: 36131/1046, Paratypes: 36130/1046, 35459/1046 (Dept. Earth Sci., Nagoya Univ.)
 Loc. No. T1-46, Kagamigahara Section, Kagamigahara City, Gifu Prefecture, Japan; 35 °25.7'N, 136 °48.0'E
 A large sheet of bedded chert in Mesozoic sedimentary complex
 Probably early Rheatian

***Lochocyrtis (?) cavifundus* Sugiyama & Saito, 1994**

Bull. Geol. Surv. Japan, Vol. 45, 395, Pl. 2, figs. 1a-1b (Holotype)
 Holotype: GSJ F14604 (Geological Museum, Geological Survey of Japan)
 Sample (GSJ R59557), northwestern part of the Obi district, Nichinan City, Miyazaki Prefecture, Kyushu, Japan; 31 °38.0'N, 131 °15.2'E
 Southern Unit, Nichina Group
 At least from the Middle Eocene to Late Oligocene

Loopus primitiva* (Matsuoka & Yao) see *Pseudodictyomitra primitiva* Matsuoka & Yao**Lophocyrtis (?) pseudojaccia* Nishimura A., 1992**

Micropaleontol., Vol. 38, 342, Pl. 9, fig. 8 (Holotype), Pl. 9, fig. 7, 9 (Paratypes)
 Holotype: DSDP 384-10-6 (38-40 cm), LMMN AN0025-5, Paratypes: DSDP 384-10-2 (56-58 cm), LMMN AN0021-1; DSDP 384-10-2 (56-58 cm), LMMN AN0021-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
 DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
 Late Paleocene, Lower part of Bekoma campechensis Zone

***Lophophaena simplex* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 465-466, Fig. 8-1 (Holotype)
 Holotype: OCU CR-0003 (Dept. Geosci., Osaka City Univ.)
 Loc. Ny-89, Noyaushi River Route in Toyokoro Hills region, Toyokoro-mura, Nakagawa-gun, Hokkaido, Japan; 42 °50.0'N, 143 °22.7'E
 Taiki Formation
 Late Miocene

***Lophophaena triangula* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 466, 468, Fig. 8-3 (Holotype)
 Holotype: OCU CR-0004 (Dept. Geosci., Osaka City Univ.)
 Loc. Ny-81, Noyaushi River Route in Toyokoro Hills region, Toyokoro-mura, Nakagawa-gun, Hokkaido, Japan; 42 °50.1'N, 143 °22.8'E
 Taiki Formation
 Late Miocene

***Lychnocanium isozakiense* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 170, Pl. 1, fig. 2 (Holotype)
 Holotype: Reg. No. TKT 1006 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Lychnocanium nipponicum* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 168-170, Text-fig. 2, Pl. 1, figs. 1a, b (Holotype)
 Holotype: Reg. No. TKT 1005 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Lychnocanoma (?) costata* Nishimura A., 1992**

Micropaleontol., Vol. 38, 342, 344, Pl. 6, fig. 5 (Holotype), Pl. 6, fig. 4 (Paratype)
 Holotype: DSDP 384-10-5 (38-40 cm), LMMN AN0041-1, Paratype: DSDP 384-9-5 (38-40 cm), LMMN AN0017-1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
 DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
 Late Paleocene, Lower part of Bekoma campechensis Zone

***Lychnocanoma (?) pileus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 344, Pl. 6, fig. 7 (Holotype), Pl. 6, fig. 8 (Paratype)
 Holotype: DSDP 384-10-5 (38-40 cm), LMMN AN0024-3, Paratype: DSDP 384-10-3 (38-40 cm), LMMN AN0035-3 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
 DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
 Late Paleocene, Lower part of Bekoma campechensis Zone

***Lychnocanoma nipponica magnicornuta* Sakai, 1980**

Init. Repts. DSDP, Vol. 56-57, 710, Pl. 9, figs. 3a, 3b (Holotype)
 Holotype: IGPS no. 73818 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample 436-34-2, 45-47 cm, Site 436, Northwest Pacific, Leg 56, Deep Sea Drilling Project; 39 °56.0'N, 145 °33.5'E
 Neogene

***Lychnocanoma parallellipes* Motoyama, 1996**

Micropaleontol., Vol. 42, 248, 250, Plate 5, fig. 12 (Holotype)
 Holotype: MPC-4963 (National Science Museum, Tokyo)
 DSDP Site 302, Core 14; 40 °20.2'N, 136 °54.0'E

Late Miocene to earliest Pliocene

***Lysemelas olbia* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 160, Fig. 28-1 (Holotype), Fig. 43-6-10b (Paratypes)

Holotype: ESN 148029, Paratypes: ESN 148236, 148237, 148238, 148239, 148240 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Marimoum robustum* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 468, 470, Fig. 9-1 (Holotype)

Holotype: OCU CR-0006 (Dept. Geosci., Osaka City Univ.)

Loc. Yd-59, YudouRiver Route in Toyokoro Hills region, Toyokoro-mura, Nakagawa-gun, Hokkaido, Japan; 42 °41.2'N, 143 °27.0'E

Taiki Formation

Late Miocene

***Melittosphaera (Melittosphaera) hokurikuensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 70-71, Pl. I, figs. 7a, b

Reg. No. 176 (Loc. B1)

Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 °36.0'N, 137 °06.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Melittosphaera (Melittosphaera) magnaporulosa spinulosa* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 72, Pl. I, fig. 4

Reg. No. 17 (Loc. A1)

Locality A1, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Melittosphaera (Melittosphaera) tonamiensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 70, Pl. I, figs. 1a, b

Reg. No. 190 (Loc. B1)

Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 °36.0'N, 137 °06.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Melittosphaera (Phaenicosphaera) yatsuoensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 72-73, Pl. I, figs. 3a, b

Reg. No. 151 (Loc. A5)

Localities A1, 2, 3, 4 and 5, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Melittosphaera satoi* Nakaseko & Nishimura, 1974**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 23, 48, Pl. 1, figs. 8a, b (Holotype) (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample OK 13, Saigou-cho, Oki-gun, Shimane Prefecture, Japan; 36 °10.9'N, 133 °17.7'E

Dogo Group

Miocene

***Meschedea permica* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 15-16, Pl. 4, fig. 10 (Holotype), Pl. 4, figs. 11-12, Pl. 5, figs. 1-3 (Paratypes)

Holotype: IGUT 7020, Paratypes: IGUT 7021-7025 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Mesosaturnalis octospinus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 160, Fig. 45-1 (Holotype)

Holotype: ESN 148030 (Dept. Earth Sci., Nagoya Univ.)

Section HZ, near the Kamiaso Bridge, Hisuikyo area, Hichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °32.2'N, 137 °07.9'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Minocapsa cylindrica* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 735-736, Fig. 10, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0039, Paratypes: NU MR 0040~0043 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3

km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E
Imajo unit of the Jurassic complex
Early Jurassic

***Minocapsa globosa* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 736, Fig. 11, fig. 1a, b (Holotype), figs. 2-4 (Paratypes)
Holotype: NU MR 0044, Paratypes: NU MR 0045~0047 (Dept. Geology, Fac. Sci., Niigata Univ.)
A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E
Imajo unit of the Jurassic complex
Early Jurassic

***Mirifusus fragilis* Baumgartner, 1984**

Ecologiae Geol. Helv., Vol. 77, 770-771, Pl. 5, figs. 12,17,20 (Holotype)
Holotype: C 35812 (Naturhistorisches Museum, Basel, Switzerland)
Loc. 40, IN-7, Inuyama area, near Unuma, Kakamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
Mino Belt, Central Japan
Middle Jurassic

***Monosera gujoensis* Takemura & Nakaseko, 1986**

Jour. Paleontol., Vol. 60, 1022, Figs. 4.10, 4.11 (Holotype), Figs. 5.1, 5.2, 5.3 (Paratypes)
Holotype: ATJRMN-1107-2, Paratypes: ATJRMN-1108-3, 1108-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
Sample TKN-105, manganese ore deposits, Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Muelleritortis cive* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 161, Fig. 41-19 (Holotype), Fig. 41-20 (Paratype)
Holotype: ESN 148031, Paratype: ESN 148101 (Dept. Earth Sci., Nagoya Univ.)
Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Ladinian to Carnian

***Multimonilis japonicus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 161, Fig. 41-18 (Holotype)
Holotype: ESN 148032 (Dept. Earth Sci., Nagoya Univ.)
Section N, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N,

136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)
Carnian

***Napora latissima* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 45, Pl. 3, fig. 9 (Holotype), Pl. 3, figs. 4-6 (Paratypoid)
Holotype: ATJRMN-1109-1, Paratypoid: ATJRMN-1126-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Napora nipponica* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 44, Pl. 2, figs. 16-19 (Holotype), Pl. 2, figs. 20-21 (Paratypoid)
Holotype: ATJRMN-1127-3, Paratypoid: ATJRMN-1126-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Napora parva* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 45, Pl. 3, figs. 10-11 (Holotype), Pl. 3, figs. 12-14 (Paratypoid)
Holotype: ATJRMN-1128-1, Paratypoid: ATJRMN-1128-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Napora robusta* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 78, Pl. 8, fig. 4 (Holotype)
Holotype: Reg. No. MTMN 2301-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Sample MN 2301, along a railway track, 15 km northwest of the Shimoaso Station, Kawabe-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °31.3'N, 137 °06.2'E
Mino belt
Late Triassic (late Carnian)

***Napora saginata* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 44, Pl. 2, figs. 12-14 (Holotype), Pl. 2, fig. 15 (Paratypoid)
Holotype: ATJRMN-1126-1, Paratypoid: ATJRMN-1126-2

(Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Napora triangularis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 44-45, Pl. 3, figs. 1-3 (Holotype), Pl. 3, figs. 7-8 (Paratypoid)

Holotype: ATJRMN-1128-4, Paratypoid: ATJRMN-1127-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Nazaromistonella speciosus* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 53-54, Pl. 12, fig. 6 (Holotype), Pl. 12, figs. 5,7 (Paratypes)

Holotype: ESN 145088, Paratypes: ESN 145087,145089 (Dept. Earth Sci., Nagoya Univ.)

Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Nazarovella gracilis* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27,101, Pl. 1, fig. 17 (Holotype)

Holotype: UCB no. FSL167055 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Nazarovella inflata* Sashida & Tonishi, 1986**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 7, 10-11, Pl. 4, fig. 4 (Holotype), Pl. 4, figs. 1-3, 5-6, 10-12(Paratypes)

Holotype: IGUT 7201, Paratypes: IGUT 7203-7207, 7209, 7211 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Nazarovella scalae* Caridroit & De Wever, 1986**

Mar. Micropaleontol., Vol. 11, 83, Pl. V, fig. 3 (Holotype)

Holotype: UCB no. FSL167070 (Univ. Claude-Bernard Lyon I,

collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 °02.8'N, 134 °28.1'E

Tatsuno Formation

Late Permian

***Neoalibaillella antaixiangi* Yao & Kuwahara, 1999**

Jour. Geosci., Osaka City Univ., Vol. 42, 74-76, Pl. 2, fig. 3 (Holotype), fig. 2 (Paratype)

Holotype: OCU PR 0281, Paratype: OCU PR 0280 (Dept. Geosci., Osaka City Univ.)

The road side about 1.2 km north of Shangsi Village, about 230 km northeast of Chengdu, Sichuan Province, China; 32 °20'N, 105 °24'E

Dalong Formation

Late Permian

***Neoalibaillella gracilis* Takemura & Nakaseko, 1981**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 124, 213, Pl. 33, fig. 7 (Holotype), Pl. 33, figs. 8-10, Pl. 34, fig. 1 (Paratypes)

Holotype: ATPMTB-1203-1, Paratypes: ATPMTB-1202-1, 1203-2, 1203-3, 1203-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

Sample AT26, about 300 m east of Mt. Kurogara-dake, Kameoka City, Kyoto Prefecture, Japan; 34 °57.5'N, 135 °34.8'E

Tamba Group

Late Permian

***Neoalibaillella grypus* Ishiga, Kito & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 16, Pl. 2, fig. 4 (Holotype), Pl. 2, figs. 5-7 (Paratypes)

Holotype: KUE PR 33-3, Paratypes: KUE PR 33-1, 33-2, 33-5 (Dept. Earth Sci., Kyoto Univ. Edu.)

Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 °14.9'N, 136 °22.9'E

Ikuri-dani Formation

Late Permian

***Neoalibaillella optima* Ishiga, Kito & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 16-17, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 2-4 (Paratypes)

Holotype: KUE PR 33-11, Paratypes: KUE PR 26-5, 33-6, 33-8 (Dept. Earth Sci., Kyoto Univ. Edu.)

Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 °14.9'N, 136 °22.9'E

Ikuri-dani Formation

Late Permian

***Neoalibaillella ornithoformis* Takemura & Nakaseko, 1981**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 124, 211, 213, Pl. 33, fig. 1 (Holotype), Pl. 33, figs. 2-6 (Paratypes)

Holotype: ATPMTB-1103-1, Paratypes: ATPMTB-1102-1,

1103-2, 1201-1, 1201-2, 1204-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 Sample AT26, about 300 m east of Mt. Kurogara-dake, Kameoka City, Kyoto Prefecture, Japan; 34 °57.5'N, 135 °34.8'E
 Tamba Group
 Late Permian

***Neoalibaillella pseudogrypus* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 527-528, Fig. 9-1 (Holotype), Fig. 9-2-6 (Paratypes)
 Holotype: IGUT-KS0234, Paratypes: IGUT-KS0208, 0212, 0235, 0236, 0240 (Inst. Geosci., Univ. Tsukuba)
 Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E
 Unit IV of the Unazawa Formation
 Late Permian

***Neopylentonema procera* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 161-162, Figs. 46-3a, b (Holotype)
 Holotype: ESN 148033 (Dept. Earth Sci., Nagoya Univ.)
 Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
 Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
 Carnian

***Nofrema (?) gigantoceras* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1201, 1203, Fig. 12-1 (Holotype), Figs. 12-2-3 (Paratypes)
 Holotype: ESN 146156, Paratypes: ESN 146288, 146157 (Dept. Earth Sci., Nagoya Univ.)
 Sample KIN 61, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E
 Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
 Middle Triassic

***Novixitus variabilis* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 155, Pl. 10, figs. 7, 9, Pl. 16, fig. 9 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 Reg. No. MITK2502, Anan City, Tokushima Prefecture, Shikoku, Japan; 33 °51.7'N, 134 °38.0'E
 Shimanto Group
 Cretaceous (approximately Albian to Cenomanian)

***Obesacapsula magniglobosa* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 71-72, Pl.9, fig. 10 (Holotype), Pl. 2, figs. 4a-b (Paratype)
 Holotype: IGPS 99621, Paratype: IGPS 99622 (Inst. Geol.

Paleont., Tohoku Univ.)

Sample SOG-8, Sogatani Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.8'N, 133 °03.7'E (Holotype)
 Irazuyama Formation
 Jurassic (Callovian to Oxfordian)

***Octatormentum ? floriferum* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 533-534, 536, Fig. 10-2 (Holotype), Fig. 10-1, 3, 4 (Paratypes)
 Holotype: IGUT-KS3454, Paratypes: IGUT-KS3452, 3471, 3472 (Inst. Geosci., Univ. Tsukuba)
 Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E
 Unit IV of the Unazawa Formation
 Late Permian

***Oertlispongus diacanthus* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1217, Fig. 17-10 (Holotype), Figs. 17-11, 12 (Paratypes)
 Holotype: ESN 146229, Paratypes: ESN 146294, 146295 (Dept. Earth Sci., Nagoya Univ.)
 Sample KIN 45, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E
 Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
 Middle Triassic

***Orbiculiforma (?) kanayamaensis* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 172-173, Pl. 62, figs. 4a, b (Holotype), Pl. 64, fig. 4 (Paratype)
 Holotype: 5374/158, 5375/158, Paratype: 3769/109 (Dept. Earth Sci., Nagoya Univ.)
 Siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 °40.6'N, 137 °09.0'E
 Mazegawa Formation
 Late Jurassic

***Orbiculiforma (?) plana* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 62, Fig. 4-17 (Holotype), Fig. 4-18 (Paratype)
 Holotype: IGUT-NH1619, Paratype: IGUT-NH2272 (Inst. Geosci., Univ. Tsukuba)
 Sample YTZ-G, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
 Mesozoic accretionary complex in the Inner Zone of Southwest Japan
 Tithonian

***Orbiculiforma coronata* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 29, Pl. 5, fig. 14 (Holotype), Pl. 5, figs. 12-13, Pl. 10, figs. 2, 5

(Paratypes)

Holotype: IGUT-US8-0613, Paratypes: IGUT-US26-0586, IGUT-US23-0572, IGUT-US17-5T1 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (Holotype-sample US 8), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 21.8'E

Furebira Formation

Cretaceous

***Orbiculiforma igoi* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 29, Pl. 5, fig. 11 (Holotype), Pl. 10, fig. 8 (Paratype)

Holotype: IGUT-US17-0636, Paratype: IGUT-US17-18T2 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 17), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 21.8'E

Furebira Formation

Cretaceous

***Orbiculiforma sakaii* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 172, Pl. 62, figs. 1a-d (Holotype), Pl. 62, fig. 2 (Paratype)

Holotype: 5992/158, 5991/158, 5989/158, 5990/158, Paratype: 3737/109 (Dept. Earth Sci., Nagoya Univ.)

Siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 ° 40.6'N, 137 ° 09.0'E

Mazegawa Formation

Late Jurassic

***Orbiculiforma satoi* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 29, Pl. 5, fig. 9 (Holotype), Pl. 10, fig. 14 (Paratype)

Holotype: IGUT-US16-0518, Paratype: IGUT-US13-9T2 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (Holotype-sample US 16), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 21.8'E

Furebira Formation

Cretaceous

***Orbiculiforma tecta* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 30, Pl. 5, fig. 10 (Holotype)

Holotype: IGUT-US34-0660 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 34), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 ° 21.8'E

Furebira Formation

Cretaceous

***Ormistonella robusta* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 100-101, Pl. 2, fig. 9 (Holotype)

Holotype: UCB no. FSL167054 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35 ° 02.8'N, 134 ° 28.1'E

Tatsuno Formation

Late Permian

***Pachyoncus kamiasoensis* Mizutani & Kido, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 132, 257-258, Pl. 52, figs. 4a-4d (Holotype), Pl. 53, Figs. 1a-1c (Paratype)

Holotype: 22789/542, Paratype: 22785/324 (Dept. Earth Sci., Nagoya Univ.)

Hisuikyō Section (sample 542), Kamiaso, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 ° 32.0'N, 137 ° 07.7'E

Mesozoic-Paleozoic sedimentary complex of the Mino area, central Japan

Middle Jurassic

***Pactarentinia holdsworthi* Furutani, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 130, 109-110, Pl. 23, figs. 3a-3b (Holotype), Pl. 22, figs. 5-6, Pl. 23, figs. 1a-2, 4a-6 (Paratypes)

Holotype: ESN 144013, Paratypes: ESN 144009-144012, 144014-144016 (Dept. Earth Sci., Nagoya Univ.)

Sample Y-19(X), siliceous shale of the G4 Formation in the Gioniyama Group exposed on the southern slope of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 ° 31.5'N, 133 ° 11.9'E

Middle part of G4 of the "Gioniyama Series" in the Kurosegawa Tectonic Zone, Outer zone of Southwest Japan

Middle Devonian

***Pactarentinia igoi* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 61-62, Pl. 2, fig. 20 (Holotype), Pl. 2, figs. 21-22 (Paratypes)

Holotype: IGUT-TK0242, Paratypes: IGUT-TK0417, IGUT-TK0415 (Inst. Geosci., Univ. Tsukuba)

Sample 72507, Shibasudani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 ° 52.6'N, 136 ° 45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Pactarentinia intermedia* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 61, Pl. 2, fig. 9 (Holotype) Pl. 2, figs. 8, 10 (Paratypes)

Holotype: IGUT-TK0456, Paratypes: IGUT-TK0422, IGUT-TK0437 (Inst. Geosci., Univ. Tsukuba)

Sample 72507, Shibasudani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 ° 52.6'N, 136 ° 45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Pactarentinia koikei* Sashida, 1991**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 161, 691, Fig. 6-8 (Holotype), Fig. 6-9, Fig. 6-10, Fig. 6-11,12, Fig. 6-2 (Paratypes)

Holotype: IGUT-KS3893, Paratypes: IGUT-KS3894, 3707, 3706, 3709 (Inst. Geosci., Univ. Tsukuba)

Chert bed (OG-2), middle corse of the Oyamazawa Valley, about 5 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °58.5'N, 138 °45.8'E

Ogamata Formation

Early Triassic, Spathian

***Palaeohippium fukujiensis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 46, Pl. 9, fig. 2 (Holotype), Pl. 9, fig. 3 (Paratype)

Holotype: ESN 145062, Paratype: ESN145063 (Dept. Earth Sci., Nagoya Univ.)

Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Palaeopyramidium ramosum* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 62, Pl. 3, fig. 15 (Holotype), Pl. 3 figs. 14, 16-18 (Paratypes)

Holotype: IGUT-TK0141, Paratypes: IGUT-TK0381, IGUT-TK0026, IGUT-TK0385, IGUT-TK0382 (Inst. Geosci., Univ. Tsukuba)

Sample 72507, Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Palaeorubus hastingsensis* Ishiga, 1987**

Earth Sci. (Chikyu Kagaku), Vol. 41, 300-301, Pl. 2, fig. 8 (Holotype), Pl. 2, figs. 1-7, 9 (Paratypes)

Holotype: DGSU PR 1-26, Paratypes: DGSU PR 1-38, 31, 22, 30, 27, 25, 29, 39 (Dept. Geol., Fac. Sci., Shimane Univ.)

An extensive road-cutting along the Oxley Highway, Yarras, Hastings block, New South Wales, Australia (grid reference 352232 on the New South Wales Lands Department 1:25000 map Yarras); ? 36 °24'S, 152 °18'E

Lower formation of the Hastings block

Late Devonian

***Palaeosaturnalis (?) incomptus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 162, 165, Fig. 46-5

(Holotype)

Holotype: ESN 148034 (Dept. Earth Sci., Nagoya Univ.)
Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)

Carnian to Norian

***Palaeoscenidium fragilis* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 60, Pl. 1, fig. 26 (Holotype), Pl. 1, figs. 23-25 (Paratypes)

Holotype: IGUT-TK0449, Paratypes: IGUT-TK0458, IGUT-TK0451, IGUT-TK0448 (Inst. Geosci., Univ. Tsukuba)

Sample 72507, Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Palaeoscenidium hakogasensis* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 60, Pl. 1, fig. 20 (Holotype), Pl. 1, figs. 21-22 (Paratypes)

Holotype: IGUT-TK0140, Paratypes: IGUT-TK0199, IGUT-TK0224 (Inst. Geosci., Univ. Tsukuba)

Sample 72507 (Holotype) and samples 72508-72509 (Paratypes), Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Palaeoscenidium ishigai* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 166-167, Pl. 7, fig. 3 (Holotype), Pl. 7, figs. 1-2, figs. 4a-5 (Paratypes)

Holotype: ESN 146001, Paratypes: ESN 146002-146005 (Dept. Earth Sci., Nagoya Univ.)

Sample Kh-24, a roadcut at the southern side of Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °34.5'N, 133 °30.0'E

G4 Formation of the Silurian and Devonian strata in the Kurosegawa Tectonic Zone

Middle Devonian

***Palaeoscenidium simplum* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 59-60, Pl. 1, fig. 17 (Holotype), Pl. 1, figs. 18-19 (Paratypes)

Holotype: IGUT-TK0467, Paratypes: IGUT-TK0457, IGUT-TK0436 (Inst. Geosci., Univ. Tsukuba)

Sample 72507, Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle

Devonian)

***Palaeoumbraculum hidense* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 63, Pl. 3, fig. 22 (Holotype), Pl. 3, figs. 20-21, 23 (Paratypes)

Holotype: IGUT-TK0128, Paratypes: IGUT-TK0460, IGUT-TK0180, IGUT-TK0127 (Inst. Geosci., Univ. Tsukuba)

Sample 72503 (Holotype) and samples 72503, 72507 (Paratypes), Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6'N, 136 °45.1'E

Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Palinandromeda praepodbielensis* (Baumgartner) see *Andromeda praepodbielensis* Baumgartner**

***Pantanellium? virgeum* Sashida, 1991**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 161, 691,693, Fig. 7-13 (Holotype), Fig. 7-9, Fig. 7-10, Fig. 7-11, Fig. 7-12, Fig. 7-14 (Paratypes)

Holotype: IGUT-KS4209, Paratypes: IGUT-KS3616, 4232, 4238, 4236, 3603 (Inst. Geosci., Univ. Tsukuba)

Chert (OG-1), upper reach of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °57.6'N, 138 °45.0'E

Ogamata Formation

Early Triassic, Spathian

***Pantanellium foveatum* Mizutani & Kido, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 132, 256-257, Pl. 51, figs. 1a-1d (Holotype), Pl. 51, figs. 2a-2c (Paratype)

Holotype: 16395/535, Paratype: 12253/334 (Dept. Earth Sci., Nagoya Univ.)

Kashibara Section (sample 537), Kamiaso, Shichiso-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °31.8'N, 137 °07.2'E

Mesozoic-Paleozoic sedimentary complex of the Mino area, central Japan

Middle Jurassic

***Parahsuum (?) grande* Hori R. & Yao, 1988**

Jour. Geosci., Osaka City Univ., Vol. 31, 54-55, Pl. 2, fig. 7 (Holotype)

Holotype: OCU MR 2494 (Dept. Geosci., Osaka City Univ.)

Sample ITII5 of the Iwayakannon Section, right river side of Kiso, about 1 km southwest of Sakahogi railroad station of the Takayama Line, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.1'N, 136 °58.1'E

So-called Paleozoic strata (Kamiaso Unit)

Early Jurassic

***Parahsuum (?) magnum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 49, Pl. 5, figs. 12-14 (Holotype), Pl. 5, fig. 15 (Paratypoid)

Holotype: ATJRMN-1134-2, Paratypoid: ATJRMN-1118-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parahsuum cruciferum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 49, Pl. 5, figs. 9-10 (Holotype), Pl. 5, fig. 11 (Paratypoid)

Holotype: ATJRMN-1133-2, Paratypoid: ATJRMN-1111-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parahsuum dentatum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 48-49, Pl. 5, figs. 6-7 (Holotype), Pl. 5, fig. 8 (Paratypoid)

Holotype: ATJRMN-1118-2, Paratypoid: ATJRMN-1117-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parahsuum kanyoense* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 21, Pl. 1, fig. 14 (Holotype), Pl. 1, figs. 20, 15, 21, 22, 23, 24 (Paratypes)

Holotype: IGUT-KS0631, Paratypes: IGUT-KS0630, 0661, 0808, 0652, 0809, 0634 (Inst. Geosci., Univ. Tsukuba)

Sample TAK-4', Takarazawa Section, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °45.5'N, 139 °10.5'E (Holotype)

Fukazawa Formation

Early Jurassic

***Parahsuum levicostatum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, Pl. 4, figs. 18-20 (Holotype), Pl. 5, fig. 1 (Paratypoid)

Holotype: ATJRMN-1123-2, Paratypoid: ATJRMN-1117-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parahsuum longiconicum* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 20-21, Pl.

2, figs. 1, 6, 17 (Holotype), Pl. 2, figs. 2-4 (Paratypes)
 Holotype: IGUT-KS0588, Paratypes: IGUT-KS3385, 9950, 0723 (Inst. Geosci., Univ. Tsukuba)
 Sample TAK-5, Takarazawa Section, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35°45.5'N, 139°10.5'E (Holotype)
 Fukazawa Formation
 Early Jurassic

***Parahsuum ovale* Hori R. & Yao, 1988**

Jour. Geosci., Osaka City Univ., Vol. 31, 51-53, Pl. 1, fig. 3 (Holotype), fig. 4 (Paratype)
 Holotype: OCU MR 2481, Paratype: OCU MR 2482 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamihara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Early Jurassic

***Parahsuum parvum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 48, Pl. 5, fig. 2-4 (Holotype), Pl. 5, fig. 5 (Paratypoid)
 Holotype: ATJRMN-1121-3, Paratypoid: ATJRMN-1116-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E
 Mino Terrane
 Middle Jurassic

***Parahsuum simplum* Yao, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 61, Pl. 4, fig. 1 (Holotype)
 Holotype: OCU MR 2474 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Early Jurassic

***Parahsuum takarazawaense* Sashida, 1988**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 9, 19-20, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 7-13 (Paratypes)
 Holotype: IGUT-KS0669, Paratypes: IGUT-KS 0715, 0805, 0804, 0803, 0696, 0724, 0665 (Inst. Geosci., Univ. Tsukuba)
 Sample TAK-5', Takarazawa Section, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35°45.5'N, 139°10.5'E (Holotype)
 Fukazawa Formation
 Early Jurassic

***Parahsuum transiens* Hori R. & Yao, 1988**

Jour. Geosci., Osaka City Univ., Vol. 31, 53-54, Pl. 2, fig. 1

(Holotype)
 Holotype: OCU MR 2488 (Dept. Geosci., Osaka City Univ.)
 Sample ITIII0 of the Iwayakannon Section, right river side of Kiso, about 1 km southwest of Sakahogi railroad station of the Takayama Line, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35°25.1'N, 136°58.1'E
 So-called Paleozoic strata (Kamiaso Unit)
 Early Jurassic

***Parares cylindricus* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 46-47, Pl. 4, fig. 4 (Holotype), Pl. 4, fig. 3, Pl. 4, figs. 5-7 (Paratypoids)
 Holotype: ATJRMN-1129-2, Paratypoids: ATJRMN-1129-4, 1126-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E
 Mino Terrane
 Middle Jurassic

***Parares flexuosus* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 47, Pl. 4, figs. 8-10 (Holotype), Pl. 4, fig. 11 (Paratypoid)
 Holotype: ATJRMN-1126-6, Paratypoid: ATJRMN-1129-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E
 Mino Terrane
 Middle Jurassic

***Parasaturnalis diplocyclis* (Yao) see *Spongosaturnalis? diplocyclis* Yao**

***Parasaturnalis japonicus* (Yao) see *Spongosaturnalis? japonicus* Yao**

***Parasepsagon leptaleus* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1208, Figs. 14-5a, 5b (Holotype), Fig. 14-4 (Paratype)
 Holotype: ESN 146187, Paratype: ESN 146188 (Dept. Earth Sci., Nagoya Univ.)
 Sample KIN 49, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E
 Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
 Early Triassic

***Parentactinia nakatsugawaensis* Sashida, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 131, 172-173, Pl. 37, fig. 3 (Holotype), Pl. 37, figs. 1-2, 4-9 (Paratypes)
 Holotype: IGUT. 5817, Paratypes: IGUT. 5818-5819, 5820-5825 (Inst. Geosci., Univ. Tsukuba)

The upper reaches of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °57.6'N, 138 °45.0'E

Ogamata Formation

Early Triassic

***Parentactinia suparkai* Sashida & Kamata, 1999**

Jour. Paleont. Vol. 73, 769, Fig. 9-4 (Holotype), Fig. 9-3, Fig. 9-5 (Paratypes)

Holotype: IGUT-KS5271, Paratypes: IGUT-KS5289, KS5245 (Inst. Geosci., Univ. Tsukuba)

Bedded limestone, about 3 km west of Kefamenadu, West Timor, Indonesia; ? 09 °20'S, 124 °20'E

Aitututu Formation

Middle Triassic (Ladinian)

***Parentactinia vetustum* Furutani, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 130, 108-109, Pl. 21, figs. 5a-5b (Holotype), Pl. 21, fig. 4, Pl. 22, figs. 1a-4b (Paratypes)

Holotype: ESN 144004, Paratypes: ESN 144003, ESN 144005-144008 (Dept. Earth Sci., Nagoya Univ.)

Sample Y-19(X), siliceous shale of the G4 Formation in the Gionyama Group exposed on the southern slope of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.5'N, 133 °11.9'E

Middle part of G4 of the Gionyama Group in the Kurosegawa Tectonic Zone, Outer zone of Southwest Japan

Middle Devonian

***Parentactinia virgata* Sashida, 1991**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 161, 689, Fig. 6-7 (Holotype)

Holotype: IGUT-KS3699 (Inst. Geosci., Univ. Tsukuba)

Chert (OG-1), upper reach of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35 °57.6'N, 138 °45.0'E

Ogamata Formation

Early Triassic, Spathian

***Parvibrachiale yaoi* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 166, Figs. 43-14a, b (Holotype), Figs. 43-15, 19, 20 (Paratypes)

Holotype: ESN 148244, Paratypes: ESN 148245, 148246, 148246 (Dept. Earth Sci., Nagoya Univ.)

Section P, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.2'N, 136 °58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Rhaetian

***Parvicingula (?) obesa* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 52, Pl. 6, figs. 8-10, Pl. 6, figs. 11-12 (Paratypoid)

Holotype: ATJRMN-1111-4, Paratypoid: ATJRMN-1134-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parvicingula gigantocornis* Kishida & Hisada, 1985**

Mem. Osaka Kyoiku Univ., Ser. III, Vol. 34, 118, Pl. 4, fig. 1 (Holotype), Pl. 4, figs. 2-5 (Paratypes)

Holotype: UOK-R2-05-01, Paratypes: UOK-R2-05-02, UOK-R2-05-03, UOK-R2-05-04, UOK-R2-05-05 (Dept. Geol., Osaka Kyoiku Univ.)

Loc. 253, black bedded chert, along the Kanna River, Ueno-mura, Tano-gun, Gunma Prefecture, Japan; 36 °04.8'N, 138 °40.5'E (Holotype)

"Ryogami" Formation

Early Jurassic

***Parvicingula hamatonbetsensis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 30-31, Pl. 4, fig. 3 (Holotype), Pl. 10, fig. 7 (Paratype)

Holotype: IGUT-US35-0670, Paratype: IGUT-US17-19T2 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (Holotype-sample US 35), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 °22.1'E

Furebira Formation

Cretaceous

***Parvicingula mashitaensis* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 176-177, Pl. 58, fig. 1 (Holotype), Pl. 57, fig. 7, Pl. 61, fig. 7 (Paratypes)

Holotype: 5385/158, Paratypes: 3451/108, 4348/124 (Dept. Earth Sci., Nagoya Univ.)

Siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 °40.6'N, 137 °09.0'E

Mazegawa Formation

Late Jurassic

***Parvicingula nanoconica* Hori R. & Otsuka, 1989**

Jour. Geosci., Osaka City Univ., Vol. 32, 183-185, Pl. 2, fig. 1 (Holotype), fig. 6 (Paratype)

Holotype: OCU MR 4026, Paratype: OCU MR 4030 (Dept. Geosci., Osaka City Univ.)

An outcrop along a valley, about 2 km northwest of Kanayama Village, Azumi-mura, Azumi-gun, Nagano Prefecture, Japan; 36 °7.6'N, 137 °27.5'E

Yukawa Complex

Early Jurassic

***Parvicingula robusta* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 95, Fig. 9-10 (Holotype), Fig. 9-13 (Paratype)

Holotype: IGUT-NH1808, Paratype: IGUT-NH2176 (Inst. Geosci., Univ. Tsukuba)

Sample YTZ-T, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Tithonian

***Parvicingula usotanensis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 30, Pl. 4, fig. 4 (Holotype), Pl. 10, figs. 11a, b (Paratype)

Holotype: IGUT-US21-0549, Paratype: IGUT-US21-32T2 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 21), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 °21.8'E

Furebira Formation

Cretaceous

***Parvifavus clausus* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 61, Pl. 10, figs. 4-5 (Holotype), Pl. 10, figs. 2-3 (Paratypoid)

Holotype: ATJRMN-1119-1, Paratypoid: ATJRMN-1132-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parvifavus irregularis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 61-62, Pl. 10, figs. 10-11 (Holotype), Pl. 10, figs. 12-13 (Paratypoid)

Holotype: ATJRMN-1135-3, Paratypoid: ATJRMN-1123-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Parvifavus minoensis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 61, Pl. 10, fig. 6 (Holotype), Pl. 10, figs. 7-9 (Paratypoids)

Holotype: ATJRMN-1124-2, Paratypoids: ATJRMN-1117-6, 1120-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture,

Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Pegoxystris mizutanii* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1218, Fig. 17-8 (Holotype), Fig. 17-9 (Paratype)

Holotype: ESN 146221, Paratype: ESN 146223 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 37, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Pentabelus furutanii* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1215, Figs. 17-5a, 5b (Holotype), Fig. 17-3 (Paratype)

Holotype: ESN 146209, Paratype: ESN 146210 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 37, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Perichlamyidium tenuis* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 300, Pl. 2, fig. 4 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Peridium infundibuliforme* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 22-23, Pl. 3, fig. 1 (Holotype), Pl. 3 fig. 3 (Paratype)

Holotype: OCU CR-0014, Paratype: OCU CR-0015 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Peridium sphaerum* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 21-22, Pl. 2, fig. 1 (Holotype), Pl. 2, figs. 2,4 (Paratypes)

Holotype: OCU CR-0011, Paratypes: OCU CR-0012, 0013 (Dept. Geosci., Osaka City Univ.)

Loc. 90081501, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °18.3'N, 143 °45.3'E
Lower platy shale member of the Morawan Formation in the Kawakami Group
Late Oligocene

***Perispyridium gujohachimanense* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 42, Pl. 1, fig. 15 (Holotype), Pl. 1, figs. 16-22 (Paratypes)
Holotype: ATJRMN-1113-1, Paratypes: ATJRMN-1115-1, 1136-2, 1136-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Peritiviator (?) dimitricai* Nishimura A., 1992**

Micropaleontol., Vol. 38, 328, 330, Pl. 1, fig. 15 (Holotype), Pl. 1, fig. 16, Pl. 11, fig. 12 (Paratypes)
Holotype: DSDP 384-11-1 (130-132 cm), LMMN AN0027-5, Paratypes: DSDP 384-10-4 (38-40 cm), LMMN AN0038-3; DSDP 384-10-5 (38-40 cm)-(2), V35/1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene, Lower part of Bekoma campechensis Zone

***Perseus hachimanensis* Takemura & Nakaseko, 1983**

Mem. Fac. Sci., Kyoto Univ., Ser. Geol. & Min., Vol. 49, 116-117, Pl. 9, figs. 1a-f (Holotype), Pl. 9, figs. 2a-c, Pl. 2, figs. 1a-2d (Paratypes)
Holotype: ATJRMN-1105-1, Paratypes: ATJRMN-1106-1, 1105-2, 1105-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
Sample TKN-105, manganese ore deposits, Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Jurassic

***Phacostaurus (?) quadratus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 326-327, Pl. 12, fig. 1 (Holotype), Pl. 12, fig. 2, Pl. 2, fig. 4 (Paratypes)
Holotype: DSDP 384-6-1 (38-40 cm)-E, K43/1, Paratypes: DSDP 384-6-1 (38-40 cm)-(2), K50/2; DSDP 384-9-5 (38-40 cm), LMMN AN0017-3 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene. Bekoma campechensis to Bekoma bidartensis Zones.

***Plafkerium (?) antiquum* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1218-1219, Fig. 18-6 (Holotype), Figs. 18-4, 5 (Paratypes)
Holotype: ESN 146234, Paratype: ESN 146233, 146296 (Dept. Earth Sci., Nagoya Univ.)
Sample KIN 61, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E
Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
Early and Middle Triassic

***Planospinocyrtis kefaensis* Sashida & Kamata, 1999**

Jour. Paleont. Vol. 73, 777, 779, Fig. 7-14 (Holotype), Fig. 7-12, 13, 15 (Paratypes)
Holotype: IGUT-KS5299, Paratypes: IGUT-KS5322, KS5261, KS5278 (Inst. Geosci., Univ. Tsukuba)
Bedded limestone, about 3 km west of Kefamenadu, West Timor, Indonesia; ? 09 °20'S, 124 °20'E
Aitutu Formation
Middle Triassic (Ladinian)

***Plectopyramis pacifica* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 170-171, Text-fig. 3, Pl. 1, fig. 4 (Holotype), Text-fig. 4, Pl. 1, figs. 3a, 3b, 5 (Paratypes?)
Holotype: Reg. No. TKT1017, Paratypes?: Reg. No. TKT 1016, 1015 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
Isozaki Formation
Late Miocene

***Pleuropodium (?) tortuosum* Nishimura A., 1992**

Micropaleontol., Vol. 38, 346, 348, Pl. 7, fig. 8 (Holotype), Pl. 7, fig. 7 (Paratype)
Holotype: DSDP 384-7-4 (38-40 cm), LMMN AN0008-4, Paratype: DSDP 384-7-3 (38-40 cm), LMMN AN0007-8 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene, Uppermost part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Podocampe yatsuoensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 108-109, Pl. XI, figs. 8a, b
Reg. No. 149 (Loc. A5)
Locality A1 and 5, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Podocapsa daigoensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 217-218, Pl. 2-2, fig. 2-26

Odaira, northern part of Torinoko mountain block 5 km distant from a office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °46.0'N, 140 °19.7'E

***Podocyrtilis (Lampterium) mirabilis* Sugiyama & Saito, 1994**

Bull. Geol. Surv. Japan, Vol. 45, 394-395, Pl. 1, figs. 1a-1c (Holotype)

Holotype: GSJ F14597 (Geological Museum, Geological Survey of Japan.)

Sample (GSJ R59570), near the border of Kagoshima and Miyazaki Prefectures, Kushima City, Miyazaki Prefecture, Kyushu, Japan; 31 °35.3'N, 131 °13.6'E

Uchinokura Unit, Hyuga Group

At least within the Podocyrtilis mitra Zone (mE5), Middle Eocene

***Polyentactinia (?) biacus* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1213, Fig. 16-4 (Holotype), Fig. 16-3, Figs. 16-5a, 5b (Paratypes)

Holotype: ESN 146204, Paratype: ESN 146206, 205 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 50, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Polyentactinia (?) crux* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1213, 1215, Figs. 16-6a, 6b (Holotype), Figs. 16-7a, 7b (Paratype)

Holotype: ESN 146207, Paratype: ESN 146208 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 49, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Polyentactinia? phatthalungensis* Sashida & Igo, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 168, 1304-1305, Fig. 5-1 (Holotype), Fig. 5-3, Fig. 5-5, Fig. 5-6, Fig. 5-7, Fig. 5-9, Fig. 5-11, Fig. 5-12, Fig. 5-14, Fig. 5-15 (Paratypes)

Holotype: IGUT-KS0005, Paratypes: IGUT-KS0081, 0087, 0089, 0090, 0095, 0093, 0097, 0094 (Inst. Geosci., Univ. Tsukuba)

Khao Chiak lies 5 to 6 km west of the city area of Phatthalung, southern Peninsular Thailand; ? 07 °30'N, 100 °0'E

Triassic, Latest Spathian to earliest Anisian

***Polyfistula? grantmackiei* Sashida, 2000**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 21, 85-86, Fig. 6-1 (Holotype), Fig. 6-2, 3 (Paratypes)

Holotype: IGUT-KSST5619, Paratypes: IGUT-KSST5618, 5605 (Inst. Geosci., Univ. Tsukuba)

Siliceous shale sample NATW-1, Ban(=Village) Wang Yai, the Songkhla-Saba Yoi area, southernmost part of Peninsular Thailand; 6 °39.7'N, 100 °46.2'E

Wang Yai Siltstone

Early Carboniferous (Tournaisian)

***Porodiscus (Discospira) sublaevis* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 299, Pl. 2, fig. 1 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Porodiscus (Trematodiscus) minor* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 299, Pl. 2, fig. 2 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Porodiscus (Trematodiscus) yeharai* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 298-299, Pl. 1, fig. 15-16 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Porodiscus trigonus* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 299-230, Pl. 2, fig. 3 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Poulpus carcharus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 166, Fig. 27-14 (Holotype), Fig. 46-9 (Paratype)

Holotype: ESN 148035, Paratype: ESN 148109 (Dept. Earth Sci., Nagoya Univ.)

Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Carnian

***Poulpus nakasekoi* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1196, Figs. 10-3a, 3b (Holotype)

Holotype: ESN 146124 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 65, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Middle Triassic

***Poulpus nishimurae* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1196, 1198, Figs. 10-1a, 1b (Holotype), Figs. 10-2a, 2b (Paratype)

Holotype: ESN 146121, Paratype: ESN 146123 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 38, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)

Middle Triassic

***Praemosaturnalis (?) ormites* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 167, Fig. 46-10 (Holotype)

Holotype: ESN 148036 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Carnian

***Praemosaturnalis pseudokahleri* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 167, Fig. 45-9 (Holotype), Fig. 28-3, Fig. 45-8 (Paratypes)

Holotype: ESN 148037, Paratypes: ESN 184185, 148256 (Dept. Earth Sci., Nagoya Univ.)

Section H, northeast flank of the Sakahogi Synform, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35°25.2'N, 136°58.6'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Norian

***Praespongoecolia robusta* Umeda, 1997**

Earth Sci. (Chikyu Kagaku), Vol. 51, 423, Pl. 5, fig. 15 (Holotype), Pl. 5, Fig. 16 (Paratype)

Holotype: OCU PR 0118, Paratype: OCU PR 0119 (Dept. Geosci., Osaka City Univ.)

Acidic tuff (Sample 1J), 190 m southeast from Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33°34.5'N, 133°30.0'E

Yokokurayama Group in the Kurosegawa Terrane

Early Devonian

***Protoholoeciscus ochiensis* Umeda, 1998**

Paleont. Res. Vol. 2, 104, Fig. 8-1 (Holotype)

Holotype: OCU PR 0170 (Dept. Geosci., Osaka City Univ.)

Section C, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°31.5'N, 133°12.3'E

Nakahata Formation of the Yokokurayama Group

Possible Eifelian (early Middle Devonian)

***Protoholoeciscus spinosus* Umeda, 1998**

Paleont. Res. Vol. 2, 104, Fig. 7-13 (Holotype), Fig. 7-14 (Paratype)

Holotype: OCU PR 0164, Paratype: OCU PR 0165 (Dept. Geosci., Osaka City Univ.)

Section A, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°31.5'N, 133°11.9'E

Nakahata Formation of the Yokokurayama Group

Possible Eifelian (early Middle Devonian)

***Protunuma (?) ochiensis* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 26-27, Pl. 9, figs. 6a, 6b (Holotype), Pl. 9, figs. 4a, 4b, Pl. 4, figs. 8a, 8b (Paratypes)

Holotype: OCU MR 2683, Paratypes: OCU MR 2682, 2694 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°27.3'N, 133°07.0'E

Nishiyama Formation, Togano Formation (Karata, 1940) and their equivalent

Late Middle Jurassic to early Late Jurassic

***Protunuma fusiformis* Ichikawa & Yao, 1976**

Progress in Micropaleontology, Micropaleont. Press, New York, p. 116, Pl. 2, fig. 1 (Holotype)

Holotype: OCU MR 2086 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamihara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Protunuma japonicus* Matsuoka & Yao, 1985**

Jour. Geosci., Osaka City Univ., Vol. 28, 130-131, Pl. 3, fig. 6 (Holotype), fig. 7 (Paratype)

Holotype: OCU MR 2736, Paratype: OCU MR 2737 (Dept. Geosci., Osaka City Univ.)

Sample No. Y-VI906-14, road side about 500 m west of the

Kokokuji Temple, Kii-Yura-cho, Arida-gun, Wakayama Prefecture, Japan; 33 °58.3'N, 135 °07.4'E
Yura Formation
Late Jurassic

***Protunuma turbo* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 24-25, Pl. 8, figs. 17a, 17b (Holotype), Pl. 9, figs. 2a, 2b, Pl. 4, fig. 4 (Paratypes)
Holotype: OCU MR 2663, Paratypes: OCU MR 2672, 2675 (Dept. Geosci., Osaka City Univ.)
Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E
Nishiyama Formation, Togano Formation (Karata, 1940) and their equivalent
Late Middle Jurassic

***Prunulum japonicum* Nakaseko & Nishimura, 1974**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 23, 52, Pl. 3, fig. 7 (Holotype) (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Sample OK 6, Saigou-cho, Oki-gun, Shimane Prefecture, Japan; 36 °11.6'N, 133 °19.5'E
Dogo Group
Miocene

***Pseudoalbaillella aidensis* Nishimura K. & Ishiga, 1987**

Mem. Fac. Sci., Shimane Univ., 21, 174, Pl. 2, fig. 11 (Holotype), Pl. 2, figs. 10,12-13 (Paratypes)
Holotype: DGSU PR 1009, Paratypes: DGSU PR 1010-1012 (Dept. Geol., Fac. Sci., Shimane Univ.)
Sample F 521, about 4 km south of Hayashino in the Yanahara area, Aida-cho, Aida-gun, Okayama Prefecture, Japan; 34 °55.2'N, 134 °06.7'E
Maizuru Group
Middle Permian

***Pseudoalbaillella annulata* Ishiga, 1984**

Earth Sci. (Chikyu Kagaku), Vol. 38, 48-49, Pl. 1, fig. 6 (Holotype), Pl. 1, figs. 7-11 (Paratypes)
Holotype: KUE PR 38-11, Paratypes: KUE PR 38-7, 38-8, 38-9, 38-10, 38-12 (Dept. Earth Sci., Kyoto Univ. Edu.)
About 2.1 km northeast of Ohmori, Kita-ku, Kyoto City, Kyoto Prefecture, Japan; 35 °09'N, 135 °42'E
I-chert Formation of the Shuzan-Ohmori Synclinorium in the Tamba Group
Early Permian

***Pseudoalbaillella bulbosa* Ishiga, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 335, Pl. 1, fig. 8 (Holotype), Pl. 1, figs. 9-10 (Paratypes)
Holotype: KUE PR 45-4, Paratypes: KUE PR 45-7, 45-8 (Dept. Earth Sci., Kyoto Univ. Edu.)
1.5 km north of Maruyama, Sasayama-cho, Taki-gun, Hyogo

Prefecture, Japan; 35 °6.8'N, 135 °14.8'E
Tamba Group
Late Carboniferous-Early Permian

***Pseudoalbaillella elegans* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 337, Pl. 1, fig. 9 (Holotype), Pl. 1, figs. 10-12 (Paratypes)
Holotype: KUE PR 4-14, Paratypes: KUE PR 4-5, 4-6, 4-7 (Dept. Earth Sci., Kyoto Univ. Edu.)
Ashimi-dani C Section, along the Ashimi-dani River, Keihoku-cho, Kitakuwata-gun, Kyoto Prefecture, Japan; 35 °6.6'N, 135 °37.8'E
Tamba Group
Early Permian

***Pseudoalbaillella elongata* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 339-340, Pl. 4, fig. 1 (Holotype), Pl. 4, figs. 2-4 (Paratypes)
Holotype: KUE PR 8-36, Paratypes: KUE PR 8-34, 8-35, 8-40 (Dept. Earth Sci., Kyoto Univ. Edu.)
Cherts and siliceous shales, about 4 km north of a office of Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
Manajo Formation
Early Permian

***Pseudoalbaillella globosa* Ishiga & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 275, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 2-5 (Paratypes)
Holotype: KUE PR 34-1, Paratypes: KUE PR34-2, 34-6, 34-8, 34-11 (Dept. Earth Sci., Kyoto Univ. Edu.)
Chert formation, about 1.8 km north east of the Nabejiri-yama Mountain, Taga-cho, Inukami-gun, Shiga Prefecture, Japan; 35 °14.9'N, 136 °22.9'E
Ikuri-dani Formation
Middle Permian

***Pseudoalbaillella lanceolata* Ishiga & Imoto, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 275, Pl. 2, fig. 9 (Holotype), Pl. 2, figs. 8, 10, 11, 12 (Paratypes)
Holotype: KUE PR 32-103, Paratypes: KUE PR 31-15, 32-89, 32-100, 32-102 (Dept. Earth Sci., Kyoto Univ. Edu.)
Ashimi-dani D Section, along the Ashimi-dani River, Keihoku-cho, Kitakuwata-gun, Kyoto Prefecture, Japan; 35 °6.6'N, 135 °37.8'E
Tamba Group
Middle Permian

***Pseudoalbaillella lomentaria* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 338, Pl. 2, fig. 9 (Holotype), Pl. 2, figs. 10-13 (Paratypes)
Holotype: KUE PR 1-76, Paratypes: KUE PR 1-5, 1-16, 1-48, 1-103 (Dept. Earth Sci., Kyoto Univ. Edu.)
Cherts and siliceous shales, about 4 km north of a office of

Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
 Manajo Formation
 Early Permian

***Pseudoalbaillella longuscornis* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 337-338, Pl. 2, fig. 1 (Holotype), Pl. 2, figs. 2-3 (Paratypes)
 Holotype: KUE PR 2-19, Paratypes: KUE PR 2-21, 2-23 (Dept. Earth Sci., Kyoto Univ. Edu.)
 Cherts and siliceous shales, about 4 km north of a office of Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
 Manajo Formation
 Early Permian

***Pseudoalbaillella nodosa* Ishiga, 1982**

Earth Sci. (Chikyu Kagaku), Vol. 36, 334, Pl. 1, fig. 3 (Holotype), Pl. 1, figs. 4-5 (Paratypes)
 Holotype: KUE PR 44-13, Paratypes: KUE PR 44-10, 44-12 (Dept. Earth Sci., Kyoto Univ. Edu.)
 1.5 km north of Maruyama, Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °6.8'N, 135 °14.8'E
 Tamba Group
 Late Carboniferous

***Pseudoalbaillella ornata* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 339, Pl. 3, fig. 3 (Holotype), Pl. 3, figs. 4-7 (Paratypes)
 Holotype: KUE PR 13-5, Paratypes: KUE PR 11-26, 11-44, 11-120, 13-33 (Dept. Earth Sci., Kyoto Univ. Edu.)
 Cherts and siliceous shales, about 4 km north of a office of Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
 Manajo Formation
 Early Permian

***Pseudoalbaillella rhombothoracata* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 339, Pl. 3, fig. 9 (Holotype), Pl. 3, figs. 10-12 (Paratypes)
 Holotype: KUE PR 8-11, Paratypes: KUE PR 8-28, 8-29, 8-30 (Dept. Earth Sci., Kyoto Univ. Edu.)
 Cherts and siliceous shales, about 4 km north of a office of Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
 Manajo Formation
 Early Permian

***Pseudoalbaillella simplex* Ishiga & Imoto, 1980**

Earth Sci. (Chikyu Kagaku), Vol. 34, 337, Pl. 1, fig. 13 (Holotype), Pl. 1, figs. 14-18 (Paratypes)
 Holotype: KUE PR 5-7, Paratypes: KUE PR 5-1, 5-2, 5-9, 5-15, 5-30 (Dept. Earth Sci., Kyoto Univ. Edu.)
 Cherts and siliceous shales, about 4 km north of a office of

Sasayama-cho, Taki-gun, Hyogo Prefecture, Japan; 35 °06.5'N, 135 °13.0'E
 Manajo Formation
 Early Permian

***Pseudoalbaillella yanaharensis* Nishimura K. & Ishiga, 1987**

Mem. Fac. Sci., Shimane Univ., 21, 173-174, Pl. 2, fig. 1 (Holotype), Pl. 2, figs. 2-8 (Paratypes)
 Holotype: DGSU PR 1001, Paratypes: DGSU PR 1002-1008 (Dept. Geol., Fac. Sci., Shimane Univ.)
 Sample F 914a, about 3 km southwest of Fukumoto in the Yanahara area, Yoshii-cho, Akaiwa-gun, Okayama Prefecture, Japan; 34 °54.6'N, 134 °06.3'E
 Maizuru Group
 Middle Permian

***Pseudocanoptum ampulla* Suzuki, 1997**

N. Jb. Geol. Palaont. Mh., Vol. 1997, 366, 368, Figs. 5-5a-5b (Holotype), Fig. 3-4, Fig. 3-6a-6b (Paratypes)
 Holotype: KURS-0027, Paratypes: KURS-0077, 0079 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 Kisono, 7 km northwest from a office of Tsuwano-cho, Kanoashi-gun, Shimane Prefecture, Japan; 34 °30.4'N, 131 °42.7'E
 Kanoashi complex
 Early Jurassic

***Pseudocanoptum gracile* Suzuki, 1997**

N. Jb. Geol. Palaont. Mh., Vol. 1997, 366, Figs. 4-1a-1b (Holotype), Fig. 4-2-5 (Paratypes)
 Holotype: KURS-0029, Paratypes: KURS-0063, 0070, 0067, 0057 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
 Kisono, 7 km northwest from a office of Tsuwano-cho, Kanoashi-gun, Shimane Prefecture, Japan; 34 °30.4'N, 131 °42.7'E
 Kanoashi complex
 Early Jurassic

***Pseudocubus praeobeliscus* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 25-26, Pl. 4, fig. 1 (Holotype), Pl. 5, figs. 1-2 (Paratypes)
 Holotype: OCU CR-0016, Paratypes: OCU CR-0017, 0018 (Dept. Geosci., Osaka City Univ.)
 Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E
 Mudstone member of the Kiroro Formation in the Kawakami Group
 Miocene

***Pseudodictyomitra minoensis* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 178, Pl. 63, fig. 9 (Holotype), Pl. 58, fig. 4, Pl. 63, fig. 10 (Paratypes)
 Holotype: 3293/31, Paratypes: 4486/142, 5985/158 (Dept. Earth

Sci., Nagoya Univ.)

Siliceous shale and manganiferous siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 °40.6'N, 137 °09.0'E

Mazegawa Formation

Late Jurassic

***Pseudodictyomitra nakasekoi* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 60-61, Pl. 12, fig. 4 (Holotype), Pl. 12, figs. 5-6 (Paratypes)

Holotype: IGPS 97566, Paratypes: IGPS 97567, 97568 (Inst. Geol. Paleont., Tohoku Univ.)

Sample TA22-02 in Section TA along the Tannebetsu River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °12.3'N, 142 °49.8'E (Holotype)

Utafue Formation

Cretaceous

***Pseudodictyomitra okamurai* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 178-179, Pl. 60, fig. 3 (Holotype), Pl. 60, fig. 4, Pl. 60, fig. 5 (Paratypes)

Holotype: 4338/124, Paratype: 4331/124, 5572/142 (Dept. Earth Sci., Nagoya Univ.)

Siliceous shale and manganiferous siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 °40.6'N, 137 °09.0'E

Mazegawa Formation

Late Jurassic

***Pseudodictyomitra primitiva* Matsuoka & Yao, 1985**

Jour. Geosci., Osaka City Univ., Vol. 28, 131-132, Pl. 3, fig. 4 (Holotype), fig. 3 (Paratype)

Holotype: OCU MR 2729, Paratype: OCU MR 2728 (Dept. Geosci., Osaka City Univ.)

Sample No. Y-VI906-14, road side about 500 m west of the Kokokuji Temple, Kii-Yura-cho, Arida-gun, Wakayama Prefecture, Japan; 33 °58.3'N, 135 °07.4'E

Yura Formation

Late Jurassic

(Loopus Yang, 1993)

***Pseudodictyophimus hexaptesimus* Sugiyama, 1992**

Jour. Earth Planet. Sci. Nagoya Univ., Vol. 39, 20-21, Pl. 17, figs. 4a-4c (Holotype), Pl. 17, figs. 5a-5b (Paratypes)

Holotype: ESN 146734, Paratype: ESN 146765 (Dept. Earth Sci., Nagoya Univ.)

Type section of the Nobori Formation of the Toyohama Group, a small scale on the Pacific coast, Muroto City, Kochi Prefecture, Shikoku, Japan; 33 °22.0'N, 134 °03.5'E

Nobori Formation

Pliocene

***Pseudodictyophimus leptoretis* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 26-27, Pl. 6, fig. 3

(Holotype), Pl. 7, fig. 1 (Paratype)

Holotype: OCU CR-0019, Paratype: OCU CR-0020 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Pseudodictyophimus pyramidalis* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 27-28, Pl. 7, fig. 2 (Holotype), Pl. 7, fig. 3 (Paratype)

Holotype: OCU CR-0021, Paratype: OCU CR-0022 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Pseudodictyophimus sphaerotherax* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 28-29, Pl. 8, fig. 1 (Holotype)

Holotype: OCU CR-0023 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Late Oligocene to Early Miocene

***Pseudodictyophimus tanythorax* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 473, Fig. 12-2 (Holotype)

Holotype: OCU CR-0005 (Dept. Geosci., Osaka City Univ.)

Loc. Oik-7, Oikamanai River Route in Toyokoro Hills region, Churui-mura, Hiroo-gun, Hokkaido, Japan; 42 °36.6'N, 143 °26.6'E

Taiki Formation

Late Miocene

***Pseudoencyrtis cylindrata* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 85, 87, Fig. 8-1 (Holotype), Fig. 8-2 (Paratype)

Holotype: IGUT-NH1599, Paratype: IGUT-NH1789 (Inst. Geosci., Univ. Tsukuba)

Sample YTZ-L, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Kimmeridgian to Tithonian

***Pseudoeucyrtis levis* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 87, Fig. 8-7 (Holotype), Fig. 8-8 (Paratype)

Holotype: IGUT-NH2191, Paratype: IGUT-NH2172 (Inst. Geosci., Univ. Tsukuba)

Sample SKNZ-2, 1.35 km north of Mt. Minami, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.4'N, 140 °18.1'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Tithonian

***Pseudoeucyrtis reticularis* Matsuoka & Yao, 1985**

Jour. Geosci., Osaka City Univ., Vol. 28, 132-133, Pl. 3, fig. 15 (Holotype), fig. 16 (Paratype)

Holotype: OCU MR 2755, Paratype: OCU MR 2756 (Dept. Geosci., Osaka City Univ.)

Sample No. Y-VI906-14, road side about 500 m west of the Kokokuji Temple, Kii-Yura-cho, Arida-gun, Wakayama Prefecture, Japan; 33 °58.3'N, 135 °07.4'E

Yura Formation

Late Jurassic

***Pseudopoulpus acutipodium* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 40, Pl. 1, figs. 5-6 (Holotype), Pl. 1 figs. 7-8 (Paratypoid)

Holotype: ATJRMN-1128-15, Paratypoid: ATJRMN-1109-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Pseudopoulpus yamatoensis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 40, Pl. 1, figs. 1-3 (Holotype), Pl. 1, fig. 4 (Paratypoid)

Holotype: ATJRMN-1130-1, Paratypoid: ATJRMN-1130-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Pseudospongoprunum? chiangdaoensis* Sashida, 2000**

Jour. Paleont. Vol. 74, 805, Fig. 7-22 (Holotype), Fig. 7-20, 21 (Paratypes)

Holotype: IGUT-KS1090, Paratypes: IGUT-KS1082, IGUT-KS1983 (Inst. Geosci., Univ. Tsukuba)

Dark gray bedded chert sample FA-5-2, Unit 1, the FA Section, quarry in Ban(=Village) Huai Tin Tang, 20 km north of Chang Dao, northern Thailand: 19 °34'54" N, 99 °06'20" E

"Fang Chert"

Late Permian (Djulfian to Dorashamian)

***Pseudospongoprunum prototypum* Umeda, 1998**

Earth Sci. (Chikyu Kagaku), Vol. 52, 207-208, Fig. 4-6 (Holotype), Fig. 4-7 (Paratype)

Holotype: OCU PR 0196, Paratype: OCU PR 0197 (Dept. Geosci., Osaka City Univ.)

Section Yk2a, sample 8A, Yokokurayama area, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.6'N, 133 °12.4'E

Joryu Formation of the Yokokurayama area in the Kurosegawa Terrane

Possible Pridoli (late Late Silurian)

***Pseudospongoprunum sagittatum* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 173, Pl. 3, fig. 1 (Holotype), Pl. 3, figs. 2-3 (Paratypes)

Holotype: ESN 146037, Paratypes: ESN 146038-146040 (Dept. Earth Sci., Nagoya Univ.)

Sample 110305, 700 m southeast of Mt. Gion-yama, Gokase-cho, Nishiusuki-gun, Miyazaki Prefecture, Kyushu, Japan; 32 °37.7'N, 131 °11.6'E

G4 Formation of the Gion-yama Group in the Kurosegawa Tectonic Zone

Early Devonian

***Pseudospongoprunum tazukawaensis* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 173, Pl. 2, fig. 1 (Holotype), Pl. 2, figs. 2-3 (Paratypes)

Holotype: ESN 146032, Paratypes: ESN 146033-146035, 146011 (Dept. Earth Sci., Nagoya Univ.)

Sample Ts-15, along Tazukawa River, Katsuura-cho, Katsuura-gun, Tokushima Prefecture, Shikoku, Japan; 33 °53.1'N, 134 °27.7'E

G3 Formation of the Kurosegawa Tectonic Zone

Late Silurian

Pseudostylosphaera compactum* (Nakaseko & Nishimura) see *Archaeospongoprunum compactum* Nakaseko & Nishimura**Pseudostylosphaera helicitum* (Nakaseko & Nishimura) see *Archaeospongoprunum helicitum* Nakaseko & Nishimura*****Pseudostylosphaera japonicum* (Nakaseko & Nishimura) see *Archaeospongoprunum japonicum* Nakaseko & Nishimura*****Pseudostylosphaera spinulosum* (Nakaseko & Nishimura) see *Archaeospongoprunum spinulosum* Nakaseko & Nishimura*****Pseudostylosphaera tenue* (Nakaseko & Nishimura) see *Archaeospongoprunum tenue* Nakaseko & Nishimura*****Pseudostylosphaera kozuri* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1208-1209,

Fig. 13-7 (Holotype), Fig. 13-8 (Paratype)

Holotype: ESN 146191, Paratype: ESN 146290 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 38, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Pseudostylosphaera timorensis* Sashida & Kamata, 1999**

Jour. Paleont. Vol. 73, 770, Fig. 8-3 (Holotype), Fig. 8-4, Fig. 8-5, Fig. 8-6 (Paratypes)

Holotype: IGUT-KS5237, Paratypes: IGUT-KS5313, KS5280, KS5320 (Inst. Geosci., Univ. Tsukuba)

Bedded limestone, about 3 km west of Kefamenadu, West Timor, Indonesia; 9°09'20"S, 124°20'E

Aitututu Formation

Middle Triassic (Ladinian)

***Pseudotormentus kamigoriensis* De Wever & Caridroit, 1984**

Rev. Micropaleontol., Vol. 27, 101-102, 104, Pl. 2, fig. 3 (Holotype)

Holotype: UCB no. FSL167056 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35°02.8'N, 134°28.1'E

Tatsuno Formation

Late Permian

***Pterocanium (?) gigas* Nishimura A., 1992**

Micropaleontol., Vol. 38, 348, Pl. 13, fig. 7 (Holotype), Pl. 7, fig. 10 (Paratype)

Holotype: DSDP 384-7-4 (38-40 cm)-A, W47/1, Paratype: DSDP 384-6-4 (83-85 cm), LMMN AN0004-4 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, Uppermost part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Pterocanium (?) procerum* Nishimura A., 1992**

Micropaleontol., Vol. 38, 348, 350, Pl. 7, fig. 1 (Holotype), Pl. 7, fig. 2, Pl. 13, fig. 3 (Paratypes)

Holotype: DSDP 384-10-5 (38-40 cm), LMMN AN0024-6, Paratypes: DSDP 384-10-5 (38-40 cm), LMMN AN0040-2;

DSDP 384-10-4 (38-40 cm)-(1), G40/2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene. Lower part of Bekoma campechensis Zone

***Pterocodon (?) poculum* Nishimura A., 1992**

Micropaleontol., Vol. 38, 350, Pl. 8, fig. 1 (Holotype), Pl. 8, figs.

2-3 (Paratypes)

Holotype: DSDP 384-6-4 (83-85 cm), LMMN AN0004-5, Paratypes: DSDP 384-6-1 (38-40 cm), LMMN AN0029-1;

DSDP 384-6-1 (38-40 cm), LMMN AN0001-9 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, Upper part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Pterocyrtidium (?) borisenkoi* Nishimura A., 1992**

Micropaleontol., Vol. 38, 352, Pl. 13, fig. 17 (Holotype), Pl. 8, fig. 10 (Paratype)

Holotype: DSDP 384-6-4 (83-85 cm)-(2) Q40/3, Paratype: DSDP 384-6-3 (38-40 cm), LMMN AN0003-3 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, Bekoma campechensis to Bekoma bidartensis Zones

***Pterocyrtidium genriettae* Nishimura A., 1992**

Micropaleontol., Vol. 38, 352, 354, Pl. 8, fig. 12 (Holotype), Pl. 8, fig. 11, Pl. 13, fig. 21 (Paratypes)

Holotype: DSDP 384-10-4 (38-40 cm), LMMN AN0038-4, Paratypes: DSDP 384-10-4 (38-40 cm), LMMN AN0023-5;

DSDP 384-10-5 (38-40 cm)-(1) N46/1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, Lower part of Bekoma campechensis Zone

***Quadricaulis femoris* Caridroit & De Wever, 1986**

Mar. Micropaleontol., Vol. 11, 79, Pl. IV, fig. 16 (Holotype)

Holotype: UCB no. FSL167069 (Univ. Claude-Bernard Lyon I, collection Dept. Sci. Terre)

Locality Mt 1, 8 km north of Mikazuki, Mikazuki-cho, Sayou-gun, Hyogo Prefecture, Japan; 35°02.8'N, 134°28.1'E

Tatsuno Formation

Late Permian

***Quarticella (?) quinaria* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 60, Pl. 9, figs. 20-21 (Holotype), Pl. 10, fig. 1 (Paratypoid)

Holotype: ATJRMN-1121-6, Paratypoid: ATJRMN-1132-7 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E

Mino Terrane

Middle Jurassic

***Quarticella conica* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 59, Pl. 9, figs. 7-8

(Holotype), Pl. 9, figs. 9-10 (Paratypoid)

Holotype: ATJRMN-1131-2, Paratypoid: ATJRMN-1132-4 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Quarticella dura* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 60, Pl. 9, fig. 18 (Holotype), Pl. 9, figs. 16-17, 19 (Paratypoids)

Holotype: ATJRMN-1120-6, Paratypoid: ATJRMN-1132-9, 1132-6 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Quarticella levis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 59-60, Pl. 9, figs. 13-14 (Holotype), Pl. 9, figs. 11-12 (Paratypoid)

Holotype: ATJRMN-1122-1, Paratypoid: ATJRMN-1132-11 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Quarticella ovalis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 58, Pl. 8, figs. 17-19 (Holotype), Pl. 8, figs. 20-21 (Paratypoid)

Holotype: ATJRMN-1121-1, Paratypoid: ATJRMN-1111-6 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Quarticella spinosa* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 59, Pl. 9, figs. 1-4 (Holotype), Pl. 9, figs. 5-6 (Paratypoids)

Holotype: ATJRMN-1131-1, Paratypoid: ATJRMN-1132-8 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Reticulotubulus foremanae* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 64, Pl. 11, figs. 9-12 (Holotype)

Holotype: ATJRMN-1112-1 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Rhodosphaera magnapolurosa* Nakaseko, 1964**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 13, Pl. 2, figs. 5a, b (Holotype)

Holotype: Reg. No. RP 1073 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sediment in the northern part of the Japan Trench; 37 °29'N, 145 °53'E

Recent

***Rhodosphaera (Rhodosphaeromma) nipponica* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 75, Pl. I, figs. 5a, b, 6

Reg. No. 24 (Loc. A1); Reg. No. 23 (Loc. A1)

Localities A1, 2 and 3, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Rhopalastrum flabellum* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 303, Pl. 2, fig. 7 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Rhopalastrum kobayashii* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 302-303, Pl. 1, fig. 17 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Rhopalodictyum (Triactinosphaera) tonamiense* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 98, Pl. VII, figs. 6, 7

Reg. No. 166 (Loc. B1); Reg. No. 179 (Loc. B1)

Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 °36.0'N, 137 °06.0'E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Rhopalosyringium obiraensis* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 70-71, Pl. 8, figs. 4a, b (Holotype)
Holotype: IGPS 97644 (Inst. Geol. Paleont., Tohoku Univ.)
Sample My76-74 in Section PR along the Ponrubeshibe River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °17.4'N, 142 °43.4'E (Holotype)
Utafue Formation
Cretaceous

***Ristola altissima nodosa* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 98, Fig. 9-19 (Holotype)
Holotype: IGUT-NH2182 (Inst. Geosci., Univ. Tsukuba)
Sample SKNZ-2, 1.35 km north of Mt. Minami, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.4'N, 140 °18.1'E
Mesozoic accretionary complex in the Inner Zone of Southwest Japan
Tithonian to Berriasian

***Ristola nakatonbetsensis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 31, Pl. 4, figs. 7, 8 (Holotype)
Holotype: IGUT-US17-0525 (Inst. Geosci., Univ. Tsukuba)
The Usotan Section (sample US 17), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 °02.7'N, 142 °21.8'E
Furebira Formation
Cretaceous

***Saturnosphaera pileata* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 74, Pl. 5, figs. 3a, b (Holotype)
Holotype: Reg. No. MTIN 13-3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Red chert sample IN13, Unuma, Kagamigajara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.5'E
Mino Belt
Late Triassic

***Saturnosphaera triassica* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 74, Pl. 5, fig. 4 (Holotype)
Holotype: Reg. No. MTIN 13-4 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Red chert sample IN13, Unuma, Kagamigajara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.5'E

Mino Belt
Late Triassic

***Secuicollacta? exquisita* Wakamatsu, Sugiyama & Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 170-171, Pl. 1, fig. 5 (Holotype), Pl. 1, figs. 4a-7 (Paratypes)
Holotype: ESN 146023, Paratypes: ESN 146024-146026 (Dept. Earth Sci., Nagoya Univ.)
Sample G84-8, 2.4 km west of Mt. Gion-yama, Gokase-cho, Nishiusuki-gun, Miyazaki Prefecture, Kyushu, Japan. ; 32 °37.7'N, 131 °09.8'E
G1 Formation of the Gion-yama Group in the Kurosegawa Tectonic Zone
Early Silurian

***Secuicollacta horrida* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 50, Pl. 11, fig. 5 (Holotype)
Holotype: ESN 145079 (Dept. Earth Sci., Nagoya Univ.)
Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E
Yoshiki Formation (s. l.)
Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Secuicollacta itoigawai* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 50, Pl. 11, fig. 1 (Holotype), Pl. 11, figs. 2-4 (Paratypes)
Holotype: ESN 145075, Paratypes: ESN 145076-145078 (Dept. Earth Sci., Nagoya Univ.)
Point of O-1 (Holotype), along the eastern part of the Osobudani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E
Yoshiki Formation (s. l.)
Silurian (Presumed to be Wenlockian or Ludlovian, probably Wenlockian)

***Secuicollacta vulgaris* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 49, Pl. 10, fig. 5 (Holotype), Pl. 10, figs. 6-7, (Paratypes)
Holotype: ESN 145072, Paratypes: ESN 145073-145074 (Dept. Earth Sci., Nagoya Univ.)
Points of R-38303 (Holotype), O-5 (Paratype) and H-11 (Paratype), along a path of the east of Hitoegane in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; ? (Holotype), 36 °13.2'N, 137 °32.0'E (H-11, Paratype)
Yoshiki Formation (s. l.)
Silurian (Early Ludlovian or slightly later)

***Sertiseria batlax* Sugiyama, 1994**

Bull. Mizunami fossil Mus., No. 21, 3, Pl. 1, figs. 1a-1b (Holotype), Pl. 1, fig. 3a-3b (Paratype)

Holotype: ESN 147051, Paratype: 147053 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4, decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E

Toyohama Formation

Early Miocene

***Sethocapsa (?) subcrassitesta* Aita, 1986**

Micropaleontol. Vol. 32, 118, Pl. 4, fig. 16 (Holotype), Pl. 4, fig. 14, Pl. 4, fig. 15 (Paratypes)

Holotype: IGPS 98861, Paratypes: IGPS 98862, 98863 (Inst. Geol. Paleont., Tohoku Univ.)

Sample GOD-4, Kaminogo Section, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.0'N, 133 °01.5'E

Komikuchi Formation

Late Tithonian

***Sethocapsa ? nakaensis* Sashida & Uematsu, 1996**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 17, 62, 64, Fig. 5-11 (Holotype), Fig. 5-10, Fig. 5-12 (Paratypes)

Holotype: IGUT-KS2216, Paratypes: IGUT-KS2265, 2351 (Inst. Geosci., Univ. Tsukuba)

Limestone blocks, Tohidani, Kito-son, Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33 °46.2'N, 134 °08.1'E

Torinosu-type limestone

Late Jurassic, Tithonian

***Sethocapsa funatoensis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 73, Pl. 9, fig. 14 (Holotype), Pl. 9, fig. 15, Pl. 2, figs. 6a-b, Pl. 2, figs. 7a-b (Paratypes)

Holotype: IGPS 99629, Paratypes: IGPS 99630, 99631, 99632 (Inst. Geol. Paleont., Tohoku Univ.)

Sample SOG-1, Sogatani Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.2'N, 133 °03.7'E (Holotype)

Irazuyama Formation

Jurassic (Callovian to Early Tithonian)

***Sethocapsa hashimotoi* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 31-32, Pl. 6, fig. 6 (Holotype)

Holotype: IGUT-HCB19-1060 (Inst. Geosci., Univ. Tsukuba)

The Heichian Section (Sample HCB 19), 12 km southeast of JR Nakatonbetsu Station, along the road adjacent to the Heichian River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 44 °54.2'N, 142 °23.9'E

Manokawa Formation

Cretaceous

***Sethocapsa hexagona* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 74-75,

Fig. 6-12 (Holotype), Fig. 6-13 (Paratype)

Holotype: IGUT-NH2089, Paratype: IGUT-NH2125 (Inst. Geosci., Univ. Tsukuba)

Sample SKNZ-2, 1.35 km north of Mt. Minami, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.4'N, 140 °18.1'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Tithonian

***Sethocapsa horokanaiensis* Kawabata, 1988**

Bull. Osaka Mus. Nat. His., No. 43, 4, Pl. 1, fig. 9 (Holotype), Pl. 1, figs. 10, 12, Pl. 3, fig. 3 (Paratypes)

Holotype: OMNH MR 0005, Paratypes: OMNH MR 0006, 0008 (Osaka Museum of Natural History)

Sample Ho-03, Horokanai area, north of Asahikawa City, Hokkaido, Japan; 44 °04.7'N, 142 °13.9'E (Holotype)

Sorachi Group

Late Jurassic (Kimmeridgian to early Berriasian)

***Sethocapsa kaminogoensis* Aita, 1986**

Micropaleontol. Vol. 32, 114, 116, Pl. 4, fig. 5 (Holotype), Pl. 4, fig. 7, Pl. 5, figs. 1-4 (Paratypes)

Holotype: IGPS 98855, Paratypes: IGPS 98856, 98857 (Inst. Geol. Paleont., Tohoku Univ.)

Sample GOD-4, Kaminogo Section, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.0'N, 133 °01.5'E

Komikuchi Formation

Late Tithonian

***Sethocapsa pseudouterculus* Aita, 1986**

Micropaleontol. Vol. 32, 116, 118, Pl. 4, fig. 1 (Holotype), Pl. 3, fig. 12, Pl. 7, figs. 5a-b (Paratypes)

Holotype: IGPS 98858, Paratypes: IGPS 98859, 98860 (Inst. Geol. Paleont., Tohoku Univ.)

Sample GOD-4, Kaminogo Section, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.0'N, 133 °01.5'E

Komikuchi Formation

Late Tithonian

***Sethocapsa simplex* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 63, Pl. 5, figs. 8a-c (Holotype), Pl. 13, fig. 1 (Paratype)

Holotype: IGPS 97583, Paratype: IGPS 97584 (Inst. Geol. Paleont., Tohoku Univ.)

Sample My76-11 in Section KM along the Kumanosawa, a tributary of the Mukobetsu River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °14.8'N, 142 °48.7'E (Holotype)

Utafue Formation

Cretaceous

***Sethocapsa yahazuensis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 73-74, Pl. 9,

fig. 16 (Holotype), Pl. 9, fig. 17, Pl. 2, figs. 8a-b, fig. 9a-b (Paratypes)
 Holotype: IGPS 99633, Paratypes: IGPS 99634, 99635, 99636 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample IRZ-50, Irazu Valley Section IV, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °25.9'N, 133 °02.3'E (Holotype)
 Irazuyama Formation
 Jurassic (Callovian to Kimmeridgian)

***Sethocyrtis japonica* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 176, Text-fig. 9, Pl. 1, figs. 10a, b (Holotype)
 Holotype: Reg. No. TKT 1006 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Solenotryma(?) ichikawai* Matsuoka & Yao, 1985**

Jour. Geosci., Osaka City Univ., Vol. 28, 133-134, Pl. 3, fig. 5 (Holotype), fig. 12 (Paratype)
 Holotype: OCU MR 2745, Paratype: OCU MR 2748 (Dept. Geosci., Osaka City Univ.)
 Sample No. Y-VI906-14, road side about 500 m west of the Kokokuji Temple, Kii-Yura-cho, Arida-gun, Wakayama Prefecture, Japan; 33 °58.3'N, 135 °07.4'E
 Yura Formation
 Late Jurassic

***Solenotryma japonica* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 68, Pl. 7, figs. 10a, b (Holotype), Pl. 7, figs. 9a, b, Pl. 13, fig. 16, Pl. 13, fig. 17 (Paratypes)
 Holotype: IGPS 97625, Paratypes: IGPS 97626, 97627, 97628 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample CM23 in Section CM along the Chinomi River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °10.7'N, 142 °49.2'E (Holotype)
 Urakawa Formation
 Cretaceous

***Sphaerostylus (Sphaerostylus) yatsuoensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 79, Pl. III, figs. 1a, b
 Reg. No. 101 (Loc. A4)
 Localities A1, 2 and 4, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 °34.7'N, 137 °09.0'E
 Higashibessyo Formation, Yatsuo Group
 Late Miocene

***Spirocyrtis elegans* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 196-197, Pl. 3, fig. 12 (Holotype), Pl. 3, fig. 13, 14 (Paratypes?)
 Holotype: Reg. No. TKT 1012, Paratype: Reg. No. TKT 1014, 1017 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Spongiocanium pacificum* Nishimura H., 1990**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 11, 169, Fig. 36-11 (Holotype), Fig. 36-12, Fig. 36-13, Fig. 36-14 (Paratypes)
 Holotype: IGUT HN6013-03, Paratypes: IGUT HN6013-01, 6013-07, 6014-01 (Inst. Geosci., Univ. Tsukuba)
 Loc. B83, siliceous clay dredged from deep-sea sediments at Lat. 0 °58'S, Long. 18 °W, depth 5,359 m; 0 °58'S, 18 °W
 Recent

***Spongiopodium virgeum* Nishimura H., 1990**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 11, 135, Fig. 27-3 (Holotype), Fig. 27-1, Fig. 27-2 (Paratypes)
 Holotype: IGUT HN6020-05, Paratypes: IGUT HN 6019-14, 6019-07 (Inst. Geosci., Univ. Tsukuba)
 Loc. B78, siliceous clay dredged from deep-sea sediments at Lat. 0 °55.96'S, Long. 166 °15.77'W, depth 5,405 m; 0 °56.0'S, 166 °15.8'W
 Oligocene-Recent

***Spongocapsula conica* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 103, Fig. 10-12 (Holotype), Fig. 10-14 (Paratype)
 Holotype: IGUT-NH1728, Paratype: IGUT-NH1778 (Inst. Geosci., Univ. Tsukuba)
 Sample YTZ-T, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
 Mesozoic accretionary complex in the Inner Zone of Southwest Japan
 Tithonian

***Spongocapsula daigoensis* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 103, Fig. 10-15 (Holotype), Fig. 10-17 (Paratype)
 Holotype: IGUT-NH1705, Paratype: IGUT-NH1604 (Inst. Geosci., Univ. Tsukuba)
 Sample YTZ-O, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
 Mesozoic accretionary complex in the Inner Zone of Southwest Japan
 Tithonian

***Spongocapsula ovum* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 103, 105, Fig. 10-18 (Holotype), Fig. 10-19 (Paratype)

Holotype: IGUT-NH1733, Paratype: IGUT-NH1494 (Inst. Geosci., Univ. Tsukuba)
 Sample YTZ-S, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
 Mesozoic accretionary complex in the Inner Zone of Southwest Japan
 Tithonian

***Spongocoelia kamitakarensis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 48-49, Pl. 10, fig. 2 (Holotype), Pl. 10, figs. 3-4 (Paratypes)
 Holotype: ESN 145069, Paratypes: ESN 145070-145071 (Dept. Earth Sci., Nagoya Univ.)
 Point of O-5 (Holotype), along a path of the east of Hitoegane in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E
 Yoshiki Formation (s. l.)
 Silurian (Early Ludlovian or slightly later)

***Spongocoelia parvus* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 47-48, Pl. 9, fig. 7 (Holotype), Pl. 9, fig. 6, Pl. 10, fig. 1 (Paratypes)
 Holotype: ESN 145067, Paratypes: ESN 145066, 145068 (Dept. Earth Sci., Nagoya Univ.)
 Point of O-5 (Holotype), along a path of the east of Hitoegane in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °12.6'N, 137 °31.5'E
 Yoshiki Formation (s. l.)
 Silurian (Early Ludlovian or slightly later)

***Spongoplegma variabilium* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 54, Pl. 1, figs. 1a, 1b (Holotype)
 Sample NG1219, Sekizawa Section, Nakajo-cho, Kitakanbara-gun, Niigata Prefecture, Japan: 38 °01.9'N, 139 °24.7'E
 Teradomari Formation
 Miocene

***Spongosaturnalis? diplocyclis* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 33-34, Pl. 8, fig. 2 (Holotype), figs. 6, 9, 10 (Paratypes)
 Holotype: OCU MR 2056, Paratypes: OCU MR 2057, 2058, 2059 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic
 (Parasaturnalis Kozur & Mostler, 1972)

***Spongosaturnalis? hexagonus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 31, Pl. 6, fig. 2 (Holotype), fig. 1 (Paratype)

Holotype: OCU MR 2041, Paratype: OCU MR 2042 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic
 (Hexasaturnalis Kozur & Mostler, 1983)

***Spongosaturnalis? inuyamensis* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 30-31, Pl. 5, fig. 1 (Holotype), figs. 3, 4 (Paratype)
 Holotype: OCU MR 2031, Paratypes: OCU MR 2032, 2033 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic
 (Hexasaturnalis Kozur & Mostler, 1983)

***Spongosaturnalis? japonicus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 34-35, Pl. 9, fig. 1 (Holotype), figs. 2, 4 (Paratype)
 Holotype: OCU MR 2063, Paratypes: OCU MR 2064, 2065 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic
 (Parasaturnalis Kozur & Mostler, 1972)

***Spongosaturnalis? minoensis* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 32-33, Pl. 7, fig. 4 (Holotype), fig. 5 (Paratype)
 Holotype: OCU MR 2050, Paratype: OCU MR 2051 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)
 Middle Jurassic
 (Hexasaturnalis Kozur & Mostler, 1983)

***Spongosaturnalis? septispinus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 32, Pl. 6, fig. 6 (Holotype), fig. 4 (Paratype)
 Holotype: OCU MR 2047, Paratype: OCU MR 2048 (Dept. Geosci., Osaka City Univ.)
 The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
 So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic
(Hexasaturnalis Kozur & Mostler, 1983)

***Spongosaturnalis? suboblungus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 29, Pl. 3, fig. 4 (Holotype), figs. 3, 5 (Paratype)

Holotype: OCU MR 2017, Paratypes: OCU MR 2018, 2019 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

(*Acanthocircus* Squinabol, 1903 emend. Donofrio & Mostler, 1978)

***Spongosaturnalis? tetraspinus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 29-30, Pl. 4, fig. 6 (Holotype), fig. 5 (Paratype)

Holotype: OCU MR 2024, Paratype: OCU MR 2025 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

(Hexasaturnalis Kozur & Mostler 1983)

***Spongosaturnalis bispinus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 28, Pl. 2, fig. 1 (Holotype), figs. 2, 5, 6 (Paratypes)

Holotype: OCU MR 2008, Paratypes: OCU MR 2009, 2010, 2011 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

(*Acanthocircus* Squinabol, 1903 emend. Donofrio & Mostler, 1978)

***Spongosaturnalis imperfectus* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 26-27, Pl. 1, figs. 1a-b (Holotype: OCU MR 2001 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

(*Acanthocircus* Squinabol, 1903 emend. Donofrio & Mostler, 1978)

***Spongosaturnalis protoformis* Yao, 1972**

Jour. Geosci., Osaka City Univ., Vol. 15, 27-28, Pl. 1, fig. 2

(Holotype), figs. 3, 4, 6 (Paratypes)

Holotype: OCU MR 2002, Paratypes: OCU MR 2003, 2004, 2005 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

(*Acanthocircus* Squinabol, 1903 emend. Donofrio & Mostler, 1978)

***Spongosilicarmiger mostleri* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1199-1200, Fig. 11-13 (Holotype), Fig. 11-14 (Paratype)

Holotype: ESN 146160, Paratype: ESN 146159 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 45, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Middle Triassic

***Spongosilicarmiger scabiturritus* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1200, Fig. 11-10 (Holotype), Figs. 11-11-12 (Paratypes)

Holotype: ESN 146162, Paratypes: ESN 146161, 146163 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 45, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35°25.4'N, 136°46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Middle Triassic

***Spongosilicarmiger spelae* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 168, Fig. 46-12 (Holotype)

Holotype: ESN 148038 (Dept. Earth Sci., Nagoya Univ.)

Section D, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Anisian

***Spongostaurus (?) hokkaidoensis* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 49, Pl. 9, fig. 12 (Holotype), Pl. 9, fig. 14, Pl. 2, fig. 6, Pl. 9, fig. 13 (Paratypes)

Holotype: IGPS 97480, Paratypes: IGPS 97481, 97482, 97486 (Inst. Geol. Paleont., Tohoku Univ.)

Sample CA21 in Section CA along a tributary of the Chinomi River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42°10.7'N, 142°48.8'E (Holotype)

Urakawa Formation
Cretaceous

***Spongostephanidium longispinosum* Sashida, 1991**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 161, 694-695, Fig. 7-1 (Holotype), Fig. 7-2, Fig. 7-3, Fig. 7-4, Fig. 7-5, Fig. 7-6, Fig. 7-7, Fig. 7-8 (Paratypes)

Holotype: IGUT-KS3643, Paratypes: IGUT-KS3663, 3664, 3653, 3675, 3698, 3661, 3669 (Inst. Geosci., Univ. Tsukuba)
Chert (OG-1), upper reach of the Nakatsu River, about 7 km of Nakatsugawa Village, Otaki-mura, Chichibu-gun, Saitama Prefecture, Japan; 35°57.6'N, 138°45.0'E

Ogamata Formation
Early Triassic, Spathian

***Spongoxystris hadra* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 169, Fig. 46-16 (Holotype), Fig. 46-15 (Paratype)

Holotype: ESN 148039, Paratype: ESN 148113 (Dept. Earth Sci., Nagoya Univ.)

Section C, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiasso Unit of Wakita (1988)

Anisian

***Spongurus (?) irregularis* Nishimura A., 1992**

Micropaleontol., Vol. 38, 327-328, Pl. 12, fig. 3 (Holotype), Pl. 12, fig. 7, Pl. 2, fig. 8 (Paratypes)

Holotype: DSDP 384-7-6 (36-38 cm)-(2), W53/1, Paratypes: DSDP 384-7-6 (36-38 cm)-(2), T52/3; DSDP 384-7-4(38-40 cm), LMMN AN0008-6; DSDP 384-9-3 (38-40 cm), LMMN AN0037-1 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, *Bekoma campechensis* to *Bekoma bidartensis* Zones

***Spongurus splendidus* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 298, Pl. 2, fig. 11 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35°47.0'N, 139°08.7'E

Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Spongurus (Spongurantha) ovatus* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, Pl. V, fig. 7
Reg. No. 31 (Loc. A1)

Locality A1, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36°

34.7'N, 137°09.0'E

Higashibessyo Formation, Yatsuo Group
Late Miocene

***Spongurus (Spongurus) yatsuoensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 90, Pl. V, figs. 6a, b

Reg. No. 68 (Loc. A3)

Localities A1, 2 and 3, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36°34.7'N, 137°09.0'E

Higashibessyo Formation, Yatsuo Group
Late Miocene

***Srakaesphaera minuta* Sashida, 1997**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 18, 12-13, Fig. 6-3 (Holotype), Fig. 6-1-2 (Paratypes)

Holotype: IGUT-KS0677, Paratypes: IGUT-KS0674, 0676 (Inst. Geosci., Univ. Tsukuba)

Sample Sake 16, red bedded chert near Ban Bo Rae and black siliceous shale near Ban Sap Phu in the Sra Kaeo area, Thailand; ? 13°30'N, 102°0'E

Informally the Sra Kaeo Group
Late Permian

***Stauracontium (Stauracontium) yatsuoense* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 82, Pl. V, figs. 5a, b

Reg. No. 122 (Loc. A4)

Localities A4 and 5, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36°34.7'N, 137°09.0'E

Higashibessyo Formation, Yatsuo Group
Late Miocene

***Staurocontium minoense* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 71, Pl. 2, fig. 10 (Holotype)

Holotype: Reg. No. MTIN 13-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Red chert sample IN13, Unuma, Kagamigajara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.5'E

Mino Belt
Late Triassic

***Staurodoras variabilis* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 71-72, Pl. 3, fig. 5 (Holotype)

Holotype: Reg. No. MTSM 802-3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34°27.0'N, 136°53.4'E

Tsuji Group in the southern part of the Chichibu belt
Late Triassic

***Staurosphaera triloba* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 72, Pl. 5, fig. 1 (Holotype)

Holotype: Reg. No. MTSM 802-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34 °27.0'N, 136 °53.4'E

Tsuiji Group in the southern part of the Chichibu belt

Late Triassic

***Steganocubus incrassatus* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 30-31, Pl. 9, fig. 1 (Holotype) Pl. 9, figs. 2-6 (Paratypes)

Holotype: OCU CR-0024, Paratypes: OCU CR-0025-0029 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.0'N, 143 °47.8'E

Mudstone member of the Kiroro Formation in the Kawakami Group

Early Miocene

***Steganocubus irregularis* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 31-32, Pl. 10, fig. 1 (Holotype), Pl. 10, figs. 3-4 (Paratypes)

Holotype: OCU CR-0030, Paratypes: OCU CR-0031, 0032 (Dept. Geosci., Osaka City Univ.)

Loc. 90081402, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43 °17.7'N, 143 °47.3'E

Upper tuffaceous mudstone member of the Morawan Formation in the Kawakami Group

Late Oligocene

***Steganocubus lipus* Sugiyama, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 169, 58, 60, Figs. 12-1a-1b (Holotype), Figs. 12-2a-2b, Figs. 12-3a-3b, Figs. 12-4a-4b (Paratypes)

Holotype: ESN 146508, Paratypes: ESN146509, 146510, 146511 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-27, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E

Oidawara Formation

Early to Middle Miocene

***Steganocubus subtilis* Sugiyama, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 169, 56, 58, Figs. 10-1a-1d (Holotype), Figs. 10-2a-2b, Figs. 10-3a-3b, Figs. 10-4a-4b, Figs. 11-1a-1b (Paratypes)

Holotype: ESN 146504, Paratypes: ESN 146505, 146403, 146506, 146507 (Dept. Earth Sci., Nagoya Univ.)

Sample TH-4 (Holotype), decapod-bearing calcareous nodules, Minamichita-cho, Chita-gun, Aichi Prefecture, Japan; 34 °42.8'N, 136 °56.6'E (Holotype)

Toyohama Formation

Late Early Miocene

***Stichocampe (?) magnacornus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 354, Pl. 13, fig. 4 (Holotype), Pl. 9, fig. 16 (Paratype)

Holotype: DSDP 384-6-4 (83-85 cm)-A, M49/1, Paratype: DSDP 384-6-4 (83-85 cm), LMMN AN0004-7 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene, Lower part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Stichocapsa (?) yamizoensis* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 89, Fig. 8-17 (Holotype), Fig. 8-18 (Paratype)

Holotype: IGUT-NH1666, Paratype: IGUT-NH1819 (Inst. Geosci., Univ. Tsukuba)

Sample YTZ-F, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Tithonian

***Stichocapsa altiforamina* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 33, Pl. 5, fig. 2 (Holotype), Pl. 5, figs. 1, 3, Pl. 10, figs. 4a, 4b, 6 (Paratypes)

Holotype: IGUT-US32-0654, Paratypes: IGUT-US10-0623, IGUT-US14-0505, IGUT-US17-4T2, IGUT-US35-2T1 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 32), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 °02.7'N, 142 °21.9'E

Furebira Formation

Cretaceous

***Stichocapsa asiatica* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 313-314, Pl. 3, fig. 9 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Stichocapsa biconica* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 733, Fig. 8, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0030, Paratypes: NU MR 0031~0034 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3

km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E
Imajo unit of the Jurassic complex
Early Jurassic

***Stichocapsa cepula circula* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 315, Pl. 3, fig. 21 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Stichocapsa convexa* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 35-36, Pl. 6, fig. 1 (Holotype), Pl. 5, fig. 16 (Paratype)
Holotype: OCU MR 2245, Paratype: OCU MR 2250 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic

***Stichocapsa elegans* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 731-732, Fig. 7, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)
Holotype: NU MR 0025, Paratypes: NU MR 0026~0029 (Dept. Geology, Fac. Sci., Niigata Univ.)
A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E
Imajo unit of the Jurassic complex
Early Jurassic

***Stichocapsa himedaruma* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 74-75, Pl. 3, figs. 1a-b (Holotype), Pl. 3, fig. 3, Pl. 10, figs. 1-2 (Paratypes)
Holotype: IGPS 99639, Paratypes: IGPS 99640, 99641, 99642 (Inst. Geol. Paleont., Tohoku Univ.)
Sample TKN-04, Takano Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °24.1'N, 129 °58.2'E (Holotype)
Irazuyama Formation
Jurassic (Callovian to Oxfordian)

***Stichocapsa japonica* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 36-37, Pl. 6, fig. 10 (Holotype), fig. 9, Pl. 7, fig. 6 (Paratypes)
Holotype: OCU MR 2255, Paratypes: OCU MR 2260, 2263 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu

Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic

***Stichocapsa modesta* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 313, Pl. 3, fig. 10 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Stichocapsa nanjoensis* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 733-734, Fig. 9, fig. 1 (Holotype), figs. 2-4 (Paratypes)
Holotype: NU MR 0035, Paratypes: NU MR 0036~0038 (Dept. Geology, Fac. Sci., Niigata Univ.)
A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E
Imajo unit of the Jurassic complex
Early Jurassic

***Stichocapsa naradaniensis* Matsuoka, 1984**

Jour. Geosci., Osaka City Univ., Vol. 27, 145-146, Pl. 2, figs. 1a, 1b (Holotype), Pl. 2, figs. 2a, 2b, Pl. 2 figs. 4a, 4b (Paratypes)
Holotype: OCU MR 2701, Paratypes: OCU MR 2702, 2704 (Dept. Geosci., Osaka City Univ.)
Locality D-32, along a road cutting parallel to the upper stream of the Yanase River, 700 m south of Kooku, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °28.8'N, 133 °13.3'E
Naradani Formation in the Sakawa area
Late Jurassic

***Stichocapsa nodosa* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 75, Pl. 3, figs. 4a-b (Holotype), Pl. 3, figs. 5a-b, 6a-b (Paratypes)
Holotype: IGPS 99643, Paratypes: IGPS 99644, 99645 (Inst. Geol. Paleont., Tohoku Univ.)
Sample TKN-18, Takano Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °24.1'N, 129 °58.2'E (Holotype)
Irazuyama Formation
Jurassic (Oxfordian)

***Stichocapsa oblongula minuta* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 314-315, Pl. 3, fig. 23 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Stichocapsa odairaensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 218, Pl. 2-7, fig. 2-32

Odaira, northern part of Torinoko mountain block 5 km distant from a office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °46.0'N, 140 °19.7'E

***Stichocapsa plicata* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 727, 729, Fig. 5, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0014, Paratypes: NU MR 0015~0018 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E

Imajo unit of the Jurassic complex

Early Jurassic

***Stichocapsa plicata plicata* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 729, Fig. 5, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0014, Paratypes: NU MR 0015~0018 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E

Imajo unit of the Jurassic complex

Early Jurassic

***Stichocapsa plicata semiplicata* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 729-731, Fig. 6, fig. 1a, b (Holotype), figs. 2-6 (Paratypes)

Holotype: NU MR 0019, Paratypes: NU MR 0020~0024 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35 °48.5'N, 136 °07.4'E

Imajo unit of the Jurassic complex

Early Jurassic

***Stichocapsa praepulchella* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 88-89, Fig. 8-13 (Holotype)

Holotype: IGUT-NH1776, Paratype: IGUT-NH2055 (Inst. Geosci., Univ. Tsukuba)

Sample YTZ-T, YTZ Section near Odaira, Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E

Mesozoic accretionary complex in the Inner Zone of Southwest Japan

Tithonian to Berriasian

***Stichocapsa robusta* Matsuoka, 1984**

Jour. Geosci., Osaka City Univ., Vol. 27, 146, Pl. 2, figs. 7a, 7b (Holotype), Pl. 2, fig. 8, Pl. 2, figs. 10a, 10b (Paratypes)

Holotype: OCU MR 2712, Paratypes: OCU MR 2713, 2715 (Dept. Geosci., Osaka City Univ.)

Locality D-32, along a road cutting parallel to the upper stream of the Yanase River, 700 m south of Kooku, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °28.8'N, 133 °13.3'E

Naradani Formation in the Sakawa area

Late Jurassic

***Stichocapsa suavis* Tumanda, 1989**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 10, 33, Pl. 4, fig. 15 (Holotype)

Holotype: IGUT-US10-0624 (Inst. Geosci., Univ. Tsukuba)

The Usotan Section (sample US 10), 4 km east of JR Shimotonbetsu Station, along the road adjacent to the Usotan River, Hamatonbetsu-cho, Esashi-gun, Hokkaido, Japan; 45 ° 02.7'N, 142 °21.8'E

Furebira Formation

Cretaceous

***Stichocapsa subjucunda* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 314, Pl. 3, fig. 22 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Stichocapsa tegiminis* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 34-35, Pl. 5, fig. 11 (Holotype), fig. 12 (Paratype)

Holotype: OCU MR 2273, Paratype: OCU MR 2283 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Stichocapsa yamizoensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 218-219, Pl. 2-, fig. 2-34

Odaira, northern part of Torinoko mountain block 5 km distant from a office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36 °46.0'N, 140 °19.7'E

***Stichomitra* (?) *tairai* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 72, Pl. 10, fig. 3 (Holotype), Pl. 10, fig. 4, Pl. 3, figs. 7a-b, 8a-b (Paratypes)

Holotype: IGPS 99623, Paratypes: IGPS 99624, 99625, 99626

(Inst. Geol. Paleont., Tohoku Univ.)

Sample IRZ-3, Irazu Valley Section III, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.1'N, 133 °03.4'E (Holotype)

Irazuyama Formation

Jurassic (Late Callovian to Kimmeridgian)

***Stichomitra (?) takanoensis* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 73, Pl. 3, figs. 10a-b (Holotype), Pl. 10, fig. 6 (Paratype)

Holotype: IGPS 99627, Paratype: IGPS 99628 (Inst. Geol. Paleont., Tohoku Univ.)

Sample FNT-03, Funato Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.5'N, 133 °04.5'E (Holotype)

Irazuyama Formation

Jurassic (Callovian to Oxfordian)

***Stichomitra doliolum* Aita, 1986**

Micropaleontol. Vol. 32, 120, 122, Pl. 3, fig. 1 (Holotype), Pl. 3, fig. 2 (Paratype)

Holotype: IGPS 98864, Paratype: IGPS 98865 (Inst. Geol. Paleont., Tohoku Univ.)

Sample SHR-12, Shiraishi River Section, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.7'N, 133 °05.4'E

Komikuchi Formation

Late Tithonian

***Stichomitra foraminosa* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 55, Pl. 3, figs. 5a, b (Holotype), Pl. 3, figs. 6a, b (Paratype)

Holotype: IGPS 97529, Paratype: IGPS 97474 (Inst. Geol. Paleont., Tohoku Univ.)

Sample TA10-02 in Section TA along the Tannebetsu River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °11.9'N, 142 °49.5'E (Holotype)

Efue Formation

Cretaceous

***Stichomitra tosaensis* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 162, Pl. 11, fig. 3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Reg. No. MIKO2504, Kushinoura, Suzaki City, Kochi Prefecture, Shikoku, Japan; 33 °23.4'N, 133 °18.3'E

Shimanto Group

Cretaceous (approximately Albian to Cenomanian)

***Stylocapsa (?) hemicostata* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 17-18, Pl. 6, figs. 8a, 8b (Holotype), Pl. 6, figs. 9a, 9b, Pl. 2, fig. 1 (Paratypes)

Holotype: OCU MR 2601, Paratypes: OCU MR 2600, 2611 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of

Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E

Nishiyama Formation, Togano Formation (Kurata, 1940) and their equivalent

Late Middle Jurassic to early Late Jurassic

***Stylocapsa (?) spiralis* Matsuoka, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 77-78, Pl. 3, fig. 1 (Holotype), Pl. 3, fig. 3 (Paratype)

Holotype: OCU MR 2511, Paratype: OCU MR 2518 (Dept. Geosci., Osaka City Univ.)

Loc. VII-0503, southwestern part of the Sakawa area, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °28.3'N, 133 °13.7'E

Nishiyama Formation, Sakawa area

Late Jurassic

***Stylocapsa catenarum* Matsuoka, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 75-76, Pl. 2, fig. 1 (Holotype), Pl. 2, fig. 5 (Paratype)

Holotype: OCU MR 2498, Paratype: OCU MR 2493 (Dept. Geosci., Osaka City Univ.)

Loc. VII-0503, southwestern part of the Sakawa area, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °28.3'N, 133 °13.7'E

Nishiyama Formation, Sakawa area

Late Jurassic

***Stylocapsa lacrimalis* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 16-17, Pl. 7, figs. 9a, 9b (Holotype), Pl. 7, figs. 5a, 5b, Pl. 1, figs. 13a, 13b (Paratypes)

Holotype: OCU MR 2587, Paratypes: OCU MR 2588, 2599 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E

Nishiyama Formation, Togano Formation (Kurata, 1940) and their equivalent

Late Middle Jurassic to early Late Jurassic

***Stylocapsa tecta* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 14-16, Pl. 5, figs. 8a, 8b (Holotype), Pl. 5, figs. 10a, 10b, Pl. 1, fig. 11 (Paratypes)

Holotype: OCU MR 2567, Paratypes: OCU MR 2562, 2574 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E

Nishiyama Formation, Togano Formation (Kurata, 1940) and their equivalent

Late Middle Jurassic to early Late Jurassic

***Stylosphaera coronata macrosphaera* Nishimura A., 1992**

Micropaleontol., Vol. 38, 325-326, Pl. 11, figs. 1a-b (Holotype), Pl. 1, figs. 3-4 (Paratypes)

Holotype: DSDP 384-10-4 (38-40 cm)-(2), Paratypes: DSDP 384-10-5 (38-40 cm), LMMN AN0024-7, DSDP 384-10-3 (38-40 cm), LMMN AN0037-2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)

DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W

Late Paleocene. Bekoma campechensis Zone

***Syringocapsa coliforme* Hori R., 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 556-558, Fig. 8, 1 (Holotype), Fig. 8, 9 (Paratype)

Holotype: OCU MR 4008, Paratype: OCU MR 4016 (Dept. Geosci., Osaka City Univ.)

Iwayakannon Section, Inuyama area, Sakahogi-cho, Kamo-gun, Gifu Prefecture, Japan; 35 °25.1'N, 136 °58.1'E

Sedimentary complex of the Mino Terrane in the Inner Zone of Southwest Japan

Latest Triassic (Rhaetian) to early Early Jurassic (Sinemurian?)

***Sycioscenium velamen* Sugiyama, 1992**

Bull. Mizunami fossil Mus., DR. Junji ITOIGAWA memorial volume, No. 19, 217, Pl. 21, figs. 1a, 1b (Holotype), Pl. 21, figs. 2a-4b (Paratypes)

Holotype: ESN 147001, Paratypes: ESN 147002, 147003, 147004 (Dept. Earth Sci., Nagoya Univ.)

Sample OD-26, 1 km northwest from JR Mizunami Station, Mizunami City, Gifu Prefecture, Japan; 35 °22.4'N, 137 °15.0'E

Oidawara Formation

Middle Miocene

***Takoum hexagonum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 66, Pl. 12, figs. 5-7 (Holotype), Pl. 12, figs. 8-9 (Paratypoid)

Holotype: ATJRMN-1129-1, Paratypoid: ATJRMN-1126-7 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Tetraditryma praeplena* Baumgartner, 1984**

Ecologiae Geol. Helv., Vol. 77, 787-788, Pl. 9, figs. 9, 13, 13a (Holotype), Pl. 9, fig. 8 (Paratype)

Holotype: C 35871, Paratype: C 35870 (Naturhistorisches Museum, Basel, Switzerland)

Loc. 40, IN-7, Inuyama area, near Unuma, Kakamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

Mino Belt, Central Japan

Middle Jurassic

***Tetragregnon japonicum* Sashida & Tonishi, 1985**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 6, 13-14, Pl. 4, fig. 7 (Holotype), Pl. 4, figs. 5-6, 8-9 (Paratypes)

Holotype: IGUT 6040, Paratypes: IGUT 6041-6044 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Lenticular chert body in shale of the Unit B of the Chichibu System

Late Permian

***Tetrarchiplagia compacta* Sashida & Kamata, 1999**

Jour. Paleont. Vol. 73, 777, Fig. 9-18 (Holotype), Fig. 9-19 (Paratype)

Holotype: IGUT-KS5213, Paratype: IGUT-KS5317 (Inst. Geosci., Univ. Tsukuba)

Bedded limestone, about 3 km west of Kefamenadu, West Timor, Indonesia; ? 09 °20'S, 124 °20'E

Aitututu Formation

Middle Triassic (Ladinian)

***Tetrarchiplagia simplex* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1191, Figs. 9-1a, 1b (Holotype)

Holotype: ESN 146426 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 38, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early and Middle Triassic

***Tetrarhopalus? sabayoiensis* Sashida, 2000**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 21, 91, Fig. 7-12 (Holotype), Fig. 7-13 (Paratypes)

Holotype: IGUT-KSST0387, Paratype: IGUT-KSST0400 (Inst. Geosci., Univ. Tsukuba)

Siliceous shale sample NATW-1, Ban (=Village) Wang Yai, the Songkhla-Saba Yoi area, southernmost part of Peninsular Thailand; 6 °39.7'N, 100 °46.2'E

Wang Yai Siltstone

Early Triassic (Spathian)

***Tetrarhopalus itoigawai* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1207-1208, Fig. 13-5 (Holotype), Figs. 4a-4b, Figs. 6a, 6b (Paratypes)

Holotype: ESN 146173, Paratypes: ESN 146175, 146289 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 50, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Tetratormentum acutum* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 532-533, Fig. 10-10 (Holotype), Fig. 10-7 (Paratype)

Holotype: IGUT-KS0948, Paratype: IGUT-KS0945 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Unit IV of the Unazawa Formation

Late Permian

***Tetratormentum globiforme* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 533, Fig. 10-11 (Holotype), Fig. 10-12 (Paratype)

Holotype: IGUT-KS0923, Paratype: IGUT-KS0946 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 ° 12.9'E

Unit IV of the Unazawa Formation

Late Permian

***Thaisphaera minuta* Sashida & Igo, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., No. 168, 1306-1307, Fig. 4-8 (Holotype), Fig. 4-11, Fig. 4-12, Fig. 4-13 (Paratypes)

Holotype: IGUT-KS0004, Paratypes: IGUT-KS0073, 0072, 0075 (Inst. Geosci., Univ. Tsukuba)

Khao Chiak lies 5 to 6 km west of the city area of Phatthalung, southern Peninsular Thailand; ? 07 ° 30'N, 100 ° 0'E

Triassic, latest Spathian to earliest Anisian

***Thanarla pacifica* Nakaseko & Nishimura, 1981**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 30, 163, Pl. 7, figs. 3a, b, 6, 9, Pl. 15, fig. 14 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Reg. No. MITK1509, Shimohara, Anan City, Tokushima Prefecture, Shikoku, Japan; 33 ° 48.6'N, 134 ° 34.8'E

Shimanto Group

Early Cretaceous (approximately Hauterivian)

***Thecosphaera akitaensis* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 62, Pl. 1, figs. 4a, 4b

Sample AK-78, Nishikurosawa Section, Oga City, Akita Prefecture, Japan; 39 ° 58.8'N, 139 ° 44.0'E.

Nishikurosawa Formation

Middle Miocene - Pliocene

***Thecosphaera concentrica* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, Pl. 1, figs. 6a, 6b

Sample HK-2839, Masuporo Formation, Hokkaido, Japan

Masuporo Formation

Middle Miocene - Pliocene

***Thecosphaera dedoensis* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 61, Pl. 1, figs. 2a, 2b

Sample AK-144, Kitaura-Anden Section, Oga City, Akita Prefecture, Japan; 39 ° 58.2'N, 139 ° 50.8'E

Wakimoto Formation

Middle Miocene - Pliocene

***Thecosphaera japonica* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 61-62, Pl. 1, figs. 3a, 3b

Sample AK-428, Kawazoe Anticline Section, Yuwa-cho, Kawabe-gun, Akita Prefecture, Japan; 39 ° 37.0'N, 140 ° 11.1'E

Funakawa Formation

Late Miocene - Pliocene

***Thecosphaera microsphaera* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 63, Pl. 1, figs. 7a, 7b

Sample HK-2836, Masuporo Formation, Hokkaido, Japan

Masuporo Formation

Middle Miocene

***Thecosphaera pseudojaponica* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 62, Pl. 1, figs. 8a, 8b

Sample HK-153, Tobetsu Formation, Hokkaido, Japan

Tobetsu Formation

Late Miocene - Pliocene

***Thecosphaera (Thecosphaera) miocenica* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 73-74, Pl. II, figs. 1a, b

Reg. No. 176 (Loc. B1)

Locality A2, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima

along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 ° 36.0'N, 137 ° 06.0'E

Higashibessyo Formation, Yatsuo Group

Late Miocene

***Thecosphaera (Thecosphaeromma) antarctica* Nakaseko, 1959**

Spec. Publ. Seto Marine Biol. Lab., Biol. Results, Jap. Antarct. Res. Exped., No. 2, 8-9, Pl. II, figs. 7, 10a, b

Reg. No. RAA 48 (St. No. 6), Reg. No. RAA 27 (St. No. 9) (Inst. Geol. Sci., Osaka Univ.)

Station Nos. 5, 6, 7, 9 and 10 in the sea near Antarctica; No. 5: 68 ° 17'S, 31 ° 38'E; No. 6: 68 ° 17.1'S, 31 ° 38.0'E; No. 7: 68 ° 19.1'S, 31 ° 22.0'; No. 9: 68 ° 31'S, 37 ° 12'E; No. 10: 68 ° 33'S, 36 ° 45'E

Recent

***Thecosphaera tochiensis* Nakaseko, 1971**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 20, 62, Pl. 1, figs. 5a, 5b
 Sample KT-99, Tokigawa Formation, Japan
 Tokigawa Formation
 Middle Miocene - Pliocene

***Theocampe yaoi* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 53-54, Pl. 3, figs. 2a-c (Holotype), Pl. 3, figs. 3a, b, Pl. 11, fig. 2 (Paratypes)
 Holotype: IGPS 97518, Paratypes: IGPS97516, 97519 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample TA08-03 in Section TA along the Tannebetsu River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °11.9'N, 142 ° 49.5'E (Holotype)
 Urakawa Formation
 Cretaceous

***Theocapsa elongata* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 185, Pl. 3, fig. 4 (Holotype), Pl. 3, fig. 5 (Paratype?)
 Holotype: Reg. No. TKT1016, Paratype?: Reg. No. TKT 1012 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Theocapsa himiensis* Nakaseko, 1963**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 12, 184-185, Text-fig. 15, Pl. 3, figs. 3a, b (Holotype), Pl. 3, fig. 1, 2 (Paratypes?)
 Holotype: Reg. No. TKT1006, Paratypes?: Reg. No. TKT 1010, 1003 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
 The Isozaki Formation, along the coast of Isozaki, Nakaminato City, Ibaraki Prefecture, Japan; 36 °22.9'N, 140 °37.5'E
 Isozaki Formation
 Late Miocene

***Theocapsa parva* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 306, Pl. 3, fig. 4 (Univ. Mus., Univ. Tokyo)
 Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
 Takaiwa Member, Shiromaru Zone
 Late Paleozoic to Early Jurassic

***Theocapsa pentagona* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 75-76, Pl. 10, fig. 5 (Holotype), Pl. 4, figs. 1a-b (Paratype)
 Holotype: IGPS 99646, Paratype: IGPS 99647 (Inst. Geol.

Paleont., Tohoku Univ.)

Sample IRZ-14, Irazu Valley Section I, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °26.0'N, 133 °02.9'E (Holotype)
 Irazuyama Formation
 Jurassic (Callovian to Oxfordian)

***Theocapsomma constricta* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 76, Pl. 4, figs. 5a-b (Holotype), Pl. 4, figs. 3a-b, 4a-b, 6a-b (Paratypes)
 Holotype: IGPS 99648, Paratypes: IGPS 99649, 99650, 99651 (Inst. Geol. Paleont., Tohoku Univ.)
 Sample TKN-34, Takano Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °24.2'N, 129 °58.1'E (Holotype)
 Irazuyama Formation
 Jurassic (Oxfordian)

***Theoconus (Theoconus) nipponicus* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 107-108, Pl. IX, figs. 2a, b
 Reg. No. 181 (Loc. B1)
 Locality A1, 2, and 5, Joyama mudstone, at the Joyama along the Kubusu River; Locality B1, Noshidojima mudstone, at the Nishidojima along the Yamada River, Yamada-mura, Nei-gun, Toyama Prefecture, Japan; 36 °36.0'N, 137 °06.0'E
 Higashibessyo Formation, Yatsuo Group
 Late Miocene

***Theocorys kerguelensis* Takemura & Ling, 1998**

Paleont. Res., Vol. 2, 160, 162, Figs. 3-8-9 (Holotype), Figs. 3-10-13 (Paratypes)
 Holotype: HUTE-R-4011, Paratypes: HUTE-R-4012, 4013 (Geoscience Institute, Hyogo University of Teacher Education)
 ODP Leg. 120, Site 748, Southern Kerguelen Plateau in the western part of the Raggatt Basin, east of the Banzare Bank.
 Sample 120-748B-19H-4, 45-47 cm; 58 °26.5'S, 78 °58.9'E
 Middle Eocene

***Theocorys minuta* Takemura & Ling, 1998**

Paleont. Res., Vol. 2, 162, 164, Figs. 3-16-17 (Holotype), Fig. 3-18-21 (Paratypes)
 Holotype: HUTE-R-4014, Paratypes: HUTE-R-4015, 4016 (Geoscience Institute, Hyogo University of Teacher Education)
 ODP Leg. 120, Site 748, Southern Kerguelen Plateau in the western part of the Raggatt Basin, east of the Banzare Bank.
 Sample 120-748B-16H-1, 45-47 cm; 58 °26.5'S, 78 °58.9'E
 Late Middle Eocene to Late Eocene

***Theocorys mitakensis* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 305-306, Pl. 3, fig. 3 (Univ. Mus., Univ. Tokyo)
 Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °

47.0°N, 139 °08.7°E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Theocorys saginata* Takemura & Ling, 1998**

Paleont. Res., Vol. 2, 164, 166, Figs. 4-7-8 (Holotype), Figs. 4-9-14 (Paratypes)
Holotype: HUTE-R-4017, Paratypes: HUTE-R-4018, 4019, 4020 (Geoscience Institute, Hyogo University of Teacher Education)
ODP Leg. 120, Site 748, Southern Kerguelen Plateau in the western part of the Raggatt Basin, east of the Banzare Bank.
Sample 120-748B-9H-1, 45-47 cm; 58 °26.5'S, 78 °58.9'E
Late Early Oligocene to Late Oligocene

***Theocorys (Theocorys) hokurikuensis* Nakaseko, 1955**

Sci. Rep., South and North Coll., Osaka Univ., No. 4, 107, Pl. VIII, figs. 5a, b
Reg. No. 122 (Loc. A4)
Locality A4, Joyama mudstone, at the Joyama along the Kubusu River, Yatsuo-cho, Nei-gun, Toyama Prefecture, Japan; 36 ° 34.7°N, 137 °09.0°E
Higashibessyo Formation, Yatsuo Group
Late Miocene

***Thyrsoyrtis (?) annikae* Nishimura A., 1992**

Micropaleontol., Vol. 38, 356, Pl. 7, fig. 4 (Holotype), Pl. 7. figs. 5-6 (Paratypes)
Holotype: DSDP 384-9-6 (38-40 cm), LMMN AN0018-1, Paratypes: DSDP 384-9-6 (38-40 cm), LMMN AN0018-2; DSDP 384-10-4 (38-40 cm), LMMN AN0038-5 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7°N, 51 °39.8°W
Late Paleocene, lower part of Bekoma campechensis Zone

***Tiborella agria* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1220, Fig. 18-2 (Holotype), Figs. 18-1, 3 (paratypes)
Holotype: ESN 146231, Paratypes: ESN 146232, 146230 (Dept. Earth Sci., Nagoya Univ.)
Sample KIN 40, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4°N, 136 °46.9°E
Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka(1988) and Kamiaso Unit of Wakita (1988)
Early Triassic

***Tlecerina? apsomae* Sashida, 2000**

Jour. Paleont. Vol. 74, 801, Fig. 9-19 (Holotype), Fig. 9-20, 21 (Paratype)
Holotype: IGUT-KS2043, Paratype: IGUT-KS2008 (Inst. Geosci., Univ. Tsukuba)
Dark gray bedded chert sample HTT-24, Unit 8, the HTT

Section, quarry in Ban(=Village) Huai Tin Tang, 20 km north of Chang Dao, northern Thailand: 19 °34'54" N, 99 °06'20" E
"Fang Chert"
Middle Triassic (Anisian)

***Tlecerina exilis* Furutani, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 130, 111, Pl. 25, fig. 4 (Holotype), Pl. 25, figs. 5-8, Pl. 26, figs. 1a-1b (Paratypes)
Holotype: ESN 144024, Paratypes: ESN 144025-144029 (Dept. Earth Sci., Nagoya Univ.)
Sample Y-19(X), siliceous shale of the G4 Formation in the Gioniyama Group exposed on the southern slope of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.5°N, 133 °11.9°E
Middle part of G4 of the "Gioniyama Series" in the Kurosegawa Tectonic Zone, Outer zone of Southwest Japan
Middle Devonian

***Tlecerina fenestrata* Furutani, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 130, 111-113, Pl. 27, fig. 3 (Holotype), Pl. 27, figs. 2, 4 (Paratypes)
Holotype: ESN 144031, Paratypes: ESN 144030, 144032 (Dept. Earth Sci., Nagoya Univ.)
Sample Y-19(X), siliceous shale of the G4 Formation in the Gioniyama Group exposed on the southern slope of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.5°N, 133 °11.9°E
Middle part of G4 of the "Gioniyama Series" in the Kurosegawa Tectonic Zone, Outer zone of Southwest Japan
Middle Devonian

***Tlecerina horrida* Furutani, 1983**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 130, 110-111, Pl. 25, figs. 1a-1b (Holotype), Pl. 23, fig. 7, Pl. 24, figs. 1-3c, Pl. 25, figs. 2a-3 (Paratypes)
Holotype: ESN 144021, Paratypes: ESN 144017-144020, 144022-144023 (Dept. Earth Sci., Nagoya Univ.)
Sample Y-19(X), siliceous shale of the G4 Formation in the Gioniyama Group exposed on the southern slope of Mt. Yokokura, Ochi-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °31.5°N, 133 °11.9°E
Middle part of G4 of the "Gioniyama Series" in the Kurosegawa Tectonic Zone, Outer zone of Southwest Japan
Middle Devonian

***Tlecerina isensis* Kurihara & Sashida, 2000**

Micropaleontol., Vol. 46, 62, Pl. 2, fig. 14 (Holotype), Pl. 2, figs. 13, 15 (Paratypes)
Holotype: IGUT-TK0428, Paratypes: IGUT-TK0010, IGUT-TK0029 (Inst. Geosci., Univ. Tsukuba)
Sample 72507 (Holotype) and samples 72507, 72508(Paratypes), Shibusadani, Kuzuryu area, Izumi-mura, Ohno-gun, Fukui Prefecture, Japan; 35 °52.6°N, 136 °45.1°E
Kamianama Group

Emisian to Eifelian (late Early Devonian to early Middle Devonian)

***Transsuum medium* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 51, Pl. 6, figs. 1-2 (Holotype), Pl. 5, figs. 25-26 (Paratypes)

Holotype: ATJRMN-1120-1, Paratypes: ATJRMN-1134-1, 1120-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E

Mino Terrane

Middle Jurassic

***Triaenosphaera minutus* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 530, Fig. 8-1 (Holotype), Fig. 8-2-6 (Paratypes)

Holotype: IGUT-KS3489, Paratypes: IGUT-KS0437, 3478, 3488, 3490, 3497 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Unit IV of the Unazawa Formation

Late Permian

***Trialatus praerobustus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 170, Fig. 47-1 (Holotype), Fig. 47-2 (Paratype)

Holotype: ESN 148040, Paratype: ESN 148117 (Dept. Earth Sci., Nagoya Univ.)

Section Q, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Carnian

***Trialatus pristinus* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 170, Fig. 47-4 (Holotype), Fig. 47-3 (Paratype)

Holotype: ESN 148041, Paratype: ESN 148118 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Carnian

***Triassobipedis (?) aetoides* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1203, Figs. 10-6a-6c (Holotype), Fig. 10-7 (Paratype)

Holotype: ESN 146148, Paratype: ESN 146147 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 50, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Triassocampe deweveri* (Nakaseko & Nishimura) see *Dictyomitrella deweveri* Nakaseko & Nishimura**

***Triassocampe eruca* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 172, Fig. 47-8 (Holotype), Fig. 47-7 (Paratype)

Holotype: ESN 148044, Paratype: ESN 148121 (Dept. Earth Sci., Nagoya Univ.)

Section E, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Anisian

***Triassocampe myterocorys* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1198, Fig. 11-1 (Holotype), Fig. 11-2-3b (Paratypes)

Holotype: ESN 146133, Paratypes: ESN 146287, 146136 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 45, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Middle Triassic

***Triassocampe nova* Yao, 1982**

Jour. Geosci., Osaka City Univ., Vol. 25, 59-60, Pl. 2, fig. 1 (Holotype), fig. 2 (Paratype)

Holotype: OCU MR 2466, Paratype: OCU MR 2465 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Late Triassic

***Tricolocampe fukudomii* Suzuki, 1997**

N. Jb. Geol. Palaont. Mh., Vol. 1997, 364, Fig. 5-1 (Holotype), Fig. 3-1a-3b (Paratypes)

Holotype: KURS-0025, Paratypes: KURS-0049, 0043, 0039

Kisono, 7 km northwest from a office of Tsuwano-cho, Kanoashi-gun, Shimane Prefecture, Japan; 34 °30.4'N, 131 °42.7'E

Kanoashi complex

Early Jurassic

***Tricolocapsa(?) fera* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 726-727, Fig. 4, fig. 1a, b (Holotype), figs. 2-3 (Paratypes)

Holotype: NU MR 0011, Paratypes: NU MR 0012~0013 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35°48.5'N, 136°07.4'E

Imajo unit of the Jurassic complex

Early Jurassic

***Tricolocapsa (?) lacrima* Sugiyama, 1997**

Bull. Mizunami fossil Mus. No. 24, 172, Figs. 47-10a, b (Holotype)

Holotype: ESN 148046 (Dept. Earth Sci., Nagoya Univ.)

Section R, near the Momotaru Shrine, Inuyama City, Aichi Prefecture, Japan; 35°24.1'N, 136°58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Carnian

***Tricolocapsa(?) megaglobosa* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 724-726, Fig. 3, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0006, Paratypes: NU MR 0007~0010 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35°48.5'N, 136°07.4'E

Imajo unit of the Jurassic complex

Middle Jurassic

***Tricolocapsa? fusiformis* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 33-34, Pl. 4, fig. 12 (Holotype), Pl. 5, fig. 1 (Paratype)

Holotype: OCU MR 2235, Paratype: OCU MR 2238 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35°23.7'N, 136°57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Tricolocapsa conexa* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 20-22, Pl. 3, fig. 3 (Holotype), Pl. 7, figs. 12a, 12b, Pl. 7, figs. 13a, 13b (Paratypes)

Holotype: OCU MR 2635, Paratypes: OCU MR 2622, 2618 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°27.3'N, 133°07.0'E

Nishiyama Formation, Togano Formation (Kurata, 1940) and their equivalent

Late Middle Jurassic to early Late Jurassic

***Tricolocapsa kuziensis* Kanomata, 1960**

Jour. Coll. Arts and Sciences, Chiba, Vol. 3, 219, Pl. 2-12, fig. 2-37

Odaira, northern part of Torinoko mountain block 5 km distant from an office of Daigo-cho, Kuji-gun, Ibaraki Prefecture, Japan; 36°46.0'N, 140°19.7'E

***Tricolocapsa laticostata* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 76-77, Pl. 10, fig. 8 (Holotype), Pl. 10, fig. 9 (Paratype)

Holotype: IGPS 99652, Paratype: IGPS 99653 (Inst. Geol. Paleont., Tohoku Univ.)

Sample SOG-1, Sogatani Section, Mt. Irazu area, Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33°27.2'N, 133°03.7'E (Holotype)

Irazuyama Formation

Jurassic (Callovian to Oxfordian)

***Tricolocapsa matsukai* Sashida, 1999**

Jour. Asian Earth Sci., Vol. 17, 566, Pl. 1, fig. 4 (Holotype), Pl. 1, fig. 5 (Paratype)

Holotype: IGUT-KS5079, Paratype: IGUT-KS5076 (Inst. Geosci., Univ. Tsukuba)

Rotti Island, about 15 km southwest of Timor Island, Indonesia; 10°43'S, 123°04'E

Wai Luli Formation

Middle Jurassic (late Bajocian to Callovian)

***Tricolocapsa minoensis* Matsuoka, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 161, 723-724, Fig. 2, fig. 1a, b (Holotype), figs. 2-5 (Paratypes)

Holotype: NU MR 0001, Paratype: NU MR 0002-0005 (Dept. Geology, Fac. Sci., Niigata Univ.)

A manganese band (MNA-10), along a road cutting about 2.3 km northwest of Sugatani Village, Kouno-mura, Nanjo-gun, Fukui Prefecture, Japan; 35°48.5'N, 136°07.4'E

Imajo unit of the Jurassic complex

Early Jurassic

***Tricolocapsa multispinosa* Sashida, 1999**

Jour. Asian Earth Sci., Vol. 17, 566, Pl. 1, fig. 6 (Holotype), Pl. 1, fig. 7 (Paratype)

Holotype: IGUT-KS5059, Paratype: IGUT-KS5060 (Inst. Geosci., Univ. Tsukuba)

Rotti Island, about 15 km southwest of Timor Island, Indonesia; 10°43'S, 123°04'E

Wai Luli Formation

Middle Jurassic (late Bajocian to Bathonian)

***Tricolocapsa plicarum* Yao, 1979**

Jour. Geosci., Osaka City Univ., Vol. 22, 32-33, Pl. 4, fig. 1 (Holotype), fig. 6 (Paratype)

Holotype: OCU MR 2224, Paratype: OCU MR 2225 (Dept. Geosci., Osaka City Univ.)

The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamigahara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E

So-called Paleozoic strata (Kamiaso Unit)

Middle Jurassic

***Tricolocapsa tetragona* Matsuoka, 1983**

Jour. Geosci., Osaka City Univ., Vol. 26, 22-23, Pl. 8, figs. 5a, 5b (Holotype), Pl. 8, figs. 8a, 8b, Pl. 3, fig. 8 (Paratypes)

Holotype: OCU MR 2636, Paratypes: OCU MR 2641, 2658 (Dept. Geosci., Osaka City Univ.)

Shiraishigawa 1 Section, along a road cutting, 1.5 km east of Shiraishigawa, Niyodo-mura, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.3'N, 133 °07.0'E

Nishiyama Formation, Togano Formation (Kurata, 1940) and their equivalent

Late Middle Jurassic

***Tricolocapsa (Tricolocapsium) elegans* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 307, Pl. 3, fig. 8 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Tricolocapsa (Tricolocapsium) pseudopilula* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 306-307, Pl. 3, fig. 6 (Holotype) (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Tricolocapsa (Tricolocapsium) rotundata* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 306, Pl. 3, fig. 5 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Tricolocapsa (Tricolocapsula) decrescens* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 307-308, Pl. 3, fig. 18 (Univ. Mus., Univ. Tokyo)

Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 °47.0'N, 139 °08.7'E

Takaiwa Member, Shiromaru Zone

Late Paleozoic to Early Jurassic

***Tricolocapsa yaoi* Matsuoka, 1986**

Jour. Geosci., Osaka City Univ., Vol. 29, 106-107, Pl. 3, fig. 1 (Holotype), Pl. 2, fig. 1, Pl. 3, fig. 4 (Paratypes)

Holotype: OCU MR 2764, Paratypes: OCU MR 2772, 2767 (Dept. Geosci., Osaka City Univ.)

Kawanouchi-1 Section, along a cliff of an abandoned mine in Kawanouchi, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Shikoku, Japan; 33 °27.8'N, 133 °16.4'E

Togano Group

Middle Late Jurassic

***Trilonche japonica* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 72, Pl. 4, fig. 10 (Holotype)

Holotype: Reg. No. MTSM 802-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 802, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34 °27.0'N, 136 °53.4'E

Tsuiji Group in the southern part of the Chichibu belt

Late Triassic

***Trilonche trifoliolata* Umeda, 1997**

Earth Sci. (Chikyu Kagaku), Vol. 51, 422, Pl. 5, fig. 1 (Holotype), Pl. 5, Fig. 2 (Paratype)

Holotype: OCU PR 0111, Paratype: OCU PR 0112 (Dept. Geosci., Osaka City Univ.)

Acidic tuff (Sample 1F), 170 m southeast from Mt. Konomori, Kochi City, Kochi Prefecture, Shikoku, Japan; 33 °34.5'N, 133 °30.0'E

Yokokurayama Group in the Kurosegawa Terrane

Early Devonian

***Tripilidium rotundum* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 81-82, Pl. 8, fig. 1 (Holotype)

Holotype: Reg. No. MTTK 1707-1 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample TK 1707 (dark grey chert), a road-cut along the left bank of the Naka River, a few kilometers north of Wajiki-cho, Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33 °52.0'N, 134 °30.0'E

Nakagawa Group

Late Triassic (late Carnian and Norian)

***Triplanospongos musashiensis* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 536, 539, Fig. 9-7 (Holotype), Fig. 9-8-12 (Paratypes)

Holotype: IGUT-KS0371, Paratypes: IGUT-KS0370, 0372, 0766, 0826 (Inst. Geosci., Univ. Tsukuba)

Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 °43.3'N, 139 °12.9'E

Unit IV of the Unazawa Formation
Late Permian

***Tripocalpis cassidus* Nishimura A., 1992**

Micropaleontol., Vol. 38, 330-331, Pl. 3, fig. 8 (Holotype), Pl. 12, fig. 12 (Paratype)

Holotype: DSDP 384-10-6 (38-40 cm) LMMN AN0025-7, Paratype: DSDP 384-10-5 (38-40 cm)-C, R51/2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, lower part of Bekoma campechensis Zone

***Tripocalpis simplex* Nishimura A., 1992**

Micropaleontol., Vol. 38, 331, Pl. 3, fig. 10 (Holotype), Pl. 12, fig. 13 (Paratype)

Holotype: DSDP 384-10-6 (38-40 cm) LMMN AN0025-8, Paratype: DSDP 384-10-5 (38-40 cm)-C, V47/2 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura) DSDP Site 384, in the North American Basin in the northwest Atlantic; 40°21.7'N, 51°39.8'W

Late Paleocene, lower part of Bekoma campechensis Zone

***Tripocyclia japonica* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 73, Pl. 4, fig. 5 (Holotype)

Holotype: Reg. No. MTTK-1707-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample TK 1707 (dark grey chert), a road-cut along the left bank of the Naka River, a few kilometers north of Wajiki-cho, Naka-gun, Tokushima Prefecture, Shikoku, Japan; 33°52.0'N, 134°30.0'E

Nakagawa Group

Late Triassic (late Carnian and Norian)

***Tripodocyrtis elegans* Funakawa, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 174, 474-476, Fig. 13-1 (Holotype)

Holotype: OCU CR-0001 (Dept. Geosci., Osaka City Univ.)

Loc. Ny-89, Noyaushi River Route in Toyokoro Hills region, Toyokoro-mura, Nakagawa-gun, Hokkaido, Japan; 42°50.0'N, 143°22.7'E

Taiki Formation

Late Miocene

***Tripodocyrtis umbellaris* Funakawa, 1995**

Jour. Geosci., Osaka City Univ., Vol. 38, 32-33, Pl. 10, fig. 5 (Holotype), Pl. 10, fig. 6 (Paratype)

Holotype: OCU CR-0033, Paratype: OCU CR-0034 (Dept. Geosci., Osaka City Univ.)

Loc. MW-125, along the Morawan-gawa River route on the western side of the Shiranuka Hills region, Ashoro-cho, Ashoro-gun, Hokkaido, Japan; 43°17.0'N, 143°47.8'E

Mudstone member of the Kiroro Formation in the Kawakami

Group
Early Miocene

***Triversus japonicus* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 62, Pl. 10, figs. 19-20 (Holotype), Pl. 10, figs. 16-18 (Paratypoid)

Holotype: ATJRMN-1134-6, Paratypoid: ATJRMN-1119-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E

Mino Terrane

Middle Jurassic

***Triversus spinifer* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 63, Pl. 10, fig. 21-23 (Holotype), Pl. 11, figs. 1-2 (Paratypoid)

Holotype: ATJRMN-1135-4, Paratypoid: ATJRMN-1135-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E

Mino Terrane

Middle Jurassic

***Turanta ancoriformis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 65, Pl. 11 figs. 13-15 (Holotype), Pl. 11, figs. 16-18 (Paratypoid)

Holotype: ATJRMN-1129-7, Paratypoid: ATJRMN-1127-8 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E

Mino Terrane

Middle Jurassic

***Turanta crassa* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 65, Pl. 11, fig. 21 (Holotype), Pl. 11, figs. 19-20 (Paratypoid)

Holotype: ATJRMN-1140-1, Paratypoid: ATJRMN-1127-7 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35°49.8'N, 136°55.0'E

Mino Terrane

Middle Jurassic

***Turanta okamurai* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 65, Pl. 12, figs. 1-2 (Holotype), Pl. 12, figs. 3-4 (Paratypoid)

Holotype: ATJRMN-1127-6, Paratypoid: ATJRMN-1127-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture,

Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Uberinterna virgispinosum* Sashida & Tonishi, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 151, 531-532, Fig. 8-7 (Holotype), Fig. 8-8-12 (Paratypes)
Holotype: IGUT-KS3496, Paratypes: IGUT-KS0301, 3453, 3487, 3492 (Inst. Geosci., Univ. Tsukuba)
Chert formation, river-bed of the Aki River near Kashiwara, Itsukaichi-cho, Nishitama-gun, Tokyo Prefecture, Japan; 35 ° 43.3'N, 139 °12.9'E
Unit IV of the Unazawa Formation
Late Permian

***Unuma echinatus* Ichikawa & Yao, 1976**

Progress in Micropaleontology, Micropaleont. Press, New York, p. 112-114, Pl. 1, fig. 5 (Holotype)
Holotype: OCU MR 2081 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamihara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic

***Unuma typicus* Ichikawa & Yao, 1976**

Progress in Micropaleontology, Micropaleont. Press, New York, p. 112, Pl. 1, fig. 1 (Holotype)
Holotype: OCU MR 2077 (Dept. Geosci., Osaka City Univ.)
The right river side of Kiso, about 1.2 km east of Unuma railroad station of the Takayama Line, Kagamihara City, Gifu Prefecture, Japan; 35 °23.7'N, 136 °57.7'E
So-called Paleozoic strata (Kamiaso Unit)
Middle Jurassic

***Vallupus japonicus* Kawabata, 1988**

Bull. Osaka Mus. Nat. His., No. 43, 5-6, Pl. 1, fig. 1 (Holotype), Pl. 1, figs. 2-3, Pl. 3, fig. 1 (Paratypes)
Holotype: OMNH MR 0001, Paratypes: OMNH MR 0002, 0003 (Osaka Museum of Natural History)
Sample Ko-10, Horokanai area, north of Asahikawa City, Hokkaido, Japan; 44 °04.7'N, 142 °14.4'E
Sorachi Group
Late Jurassic (Late Tithonian to early Berriasian)

***Veles vulgaris* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 173, Fig. 47-12 (Holotype), Fig. 47-13 (Paratype)
Holotype: ESN 148047, Paratype: ESN 148124 (Dept. Earth Sci., Nagoya Univ.)
Section G, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of

Wakita (1988)
Carnian

***Velicucullus (?) palaeocenica* Nishimura A., 1992**

Micropaleontol., Vol. 38, 331, Pl. 3, fig. 7 (Holotype), Pl. 3, fig. 9 (Paratype)
Holotype: DSDP 384-6-1 (38-40 cm), LMMN AN0001-14, Paratype: DSDP 384-7-1 (83-85 cm), LMMN AN0005-5 (Laboratory of the Microfossil's study of Matsumoto, Nagano by A. Nishimura)
DSDP Site 384, in the North American Basin in the northwest Atlantic; 40 °21.7'N, 51 °39.8'W
Late Paleocene, Upper part of Bekoma campechensis Zone to Bekoma bidartensis Zone

***Xipha nodosa* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 173-174, Fig. 47-15 (Holotype)
Holotype: ESN 148048 (Dept. Earth Sci., Nagoya Univ.)
Section G, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Carnian

***Xipha pessagnoii* (Nakaseko & Nishimura) see *Dictyomitra pessagnoii* Nakaseko & Nishimura**

***Xiphosphaera huzimotoi* Ichikawa, 1950**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, Vol. 7, pt. 5, 294, Pl. 1, fig. 14 (Univ. Mus., Univ. Tokyo)
Along the path from Mitake to Unazawa, west of Mitake Shrine, Okutama-cho, Nishitama-gun, Tokyo Prefecture, Japan; ? 35 ° 47.0'N, 139 °08.7'E
Takaiwa Member, Shiromaru Zone
Late Paleozoic to Early Jurassic

***Xitus gifuensis* Mizutani, 1981**

Bull. Mizunami fossil Mus., No. 8, 180-181, Pl. 59, fig. 3 (Holotype), Pl. 59, figs. 2a, 1 (Paratypes)
Holotype: 6017/142, Paratypes: 4445/142, 6007/142 (Dept. Earth Sci., Nagoya Univ.)
Siliceous shale, along the Maze River, Kanayama-cho, Masuda-gun, Gifu Prefecture, Japan; 35 °40.6'N, 137 °09.0'E
Mazegawa Formation
Late Jurassic

***Xitus reticulatus* Hori N., 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B, Vol. 20, 76, Fig. 7-1 (Holotype), Fig. 7-2 (Paratype)
Holotype: IGUT-NH1654, Paratype: IGUT-NH2079 (Inst. Geosci., Univ. Tsukuba)
Sample YTZ-C, YTZ Section near Odaira, Daigo-cho, Kuji-gun,

Ibaraki Prefecture, Japan; 36 °45.5'N, 140 °19.6'E
Mesozoic accretionary complex in the Inner Zone of Southwest Japan
Tithonian

***Xitus takayanagii* Taketani, 1982**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 52, 62-63, Pl. 5, figs. 6a, b (Holotype), Pl. 12, figs. 12-13 (Paratypes)
Holotype: IGPS 97577, Paratypes: IGPS 97578, 97579 (Inst. Geol. Paleont., Tohoku Univ.)
Sample My76-74 in Section PR along the Ponrubeshibe River, Urakawa-cho, Urakawa-gun, Hokkaido, Japan; 42 °17.4'N, 142 °43.4'E (Holotype)
Utafue Formation
Cretaceous

***Yamatoum caudatum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 57, Pl. 8, figs. 7-8 (Holotype), Pl. 8, fig. 9 (Paratypoid)
Holotype: ATJRMN-1131-6, Paratypoid: ATJRMN-1132-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Yamatoum connicinum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 57, Pl. 8, fig. 4 (Holotype), Pl. 8, figs. 5-6 (Paratypoid)
Holotype: ATJRMN-1115-2, Paratypoid: ATJRMN-1131-3 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Yamatoum elegans* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 55-56, Pl. 7, figs. 14-16 (Holotype), Pl. 7, figs. 17-18 (Paratypoid)
Holotype: ATJRMN-1118-3, Paratypoid: ATJRMN-1127-9 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Yamatoum komamiensis* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 56, Pl. 7, figs. 19-20 (Holotype), Pl. 7, fig. 21-22 (Paratypoid)
Holotype: ATJRMN-1131-5, Paratypoid: ATJRMN-1132-2 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)

A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Yamatoum spinosum* Takemura, 1986**

Palaeontographica, Abt. A., Vol. 195, 56-57, Pl. 8, figs. 1-2 (Holotype), Pl. 8, fig. 3 (Paratypoid)
Holotype: ATJRMN-1132-1, Paratypoid: ATJRMN-1111-5 (Dept. Geol. Mineral., Fac. Sci., Kyoto Univ.)
A manganese carbonate ore nodule (sample TKN-105), Gujo-hachiman area, Hachiman-cho, Gujo-gun, Gifu Prefecture, Japan; 35 °49.8'N, 136 °55.0'E
Mino Terrane
Middle Jurassic

***Yeharaia annulata* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 82-83, Pl. 10, fig. 1 (Holotype)
Holotype: Reg. No. MTMN 2311-3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)
Sample MN 2311, a road-cut along the Hida River, 0.8 km east of the Kamiaso Station, Hichiso-mura, Kamo-gun, Gifu Prefecture, Japan; 35 °32.1'N, 137 °08.0'E
Mino Belt
Late Triassic

***Yeharaia compsa* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 174, Fig. 47-20 (Holotype), Fig. 47-19 (Paratype)
Holotype: ESN 148049, Paratype: ESN 148129 (Dept. Earth Sci., Nagoya Univ.)
Section B, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Ladinian

***Yeharaia cornigera* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 174, Fig. 47-16 (Holotype), Fig. 47-17 (Paratype)
Holotype: ESN 148050, Paratype: ESN 148126 (Dept. Earth Sci., Nagoya Univ.)
Section A, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E
Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)
Anisian to Ladinian

***Yeharaia elegans* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 82, Pl.

10, fig. 2 (Holotype)

Holotype: Reg. No. MTSM 803-2 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample SM 803, along the beach of Ogura Island, Toba City, Mie Prefecture, Japan; 34 °27.0'N, 136 °53.4'E

Tsuiji Group in the southern part of the Chichibu belt

Late Triassic

***Yeharaia japonica* Nakaseko & Nishimura, 1979**

Sci. Rep., Coll. General Education, Osaka Univ., Vol. 28, 83, Pl. 10, fig. 6 (Holotype)

Holotype: Reg. No. MTMN 2311-3 (Inst. Geol. Sci., Coll. Gen. Edu., Osaka Univ.)

Sample MN 2311, a road-cut along the Hida River, 0.8 km east of the Kamiaso Station, Hichiso-mura, Kamo-gun, Gifu Prefecture, Japan; 35 °32.1'N, 137 °08.0'E

Mino Belt

Late Triassic

***Yeharaia mascula* Sugiyama, 1997**

Bull. Mizunami fossil Mus., No. 24, 174, Fig. 47-21 (Holotype), Fig. 47-22 (Paratype)

Holotype: ESN 148051, Paratype: ESN 148130 (Dept. Earth Sci., Nagoya Univ.)

Section A, near the Momotarou Shrine, Inuyama City, Aichi Prefecture, Japan; 35 °24.1'N, 136 °58.0'E

Underlain by the Mino Terrane (Mizutani, 1990) belonging to the Complex 3 of Otsuka (1988) and the Kamiaso Unit of Wakita (1988)

Ladinian

***Zadrappolus? hitoeganensis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 37-38, Pl. 4, fig. 5 (Holotype), Pl. 4, fig. 6, Pl. 5, fig. 1 (Paratypes)

Holotype: ESN 145021, Paratypes: ESN145022-145023 (Dept. Earth Sci., Nagoya Univ.)

Point of H-7 (Holotype), along a path of the east of Hitoegane in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.2'N, 137 °32.0'E

Yoshiki Formation (s. l.)

Silurian (Early Ludlovian or slightly later)

***Zadrappolus spinosus* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 37, Pl. 4, fig. 4 (Holotype), Pl. 4, figs. 1-3 (Paratypes)

Holotype: ESN 145020, Paratypes: ESN145017-145019 (Dept. Earth Sci., Nagoya Univ.)

Point of H-11 (Holotype), along a path of the east of Hitoegane in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.2'N, 137 °32.0'E

Yoshiki Formation (s. l.)

Silurian (Early Ludlovian or slightly later)

***Zadrappolus tenuis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 36-37, Pl. 3, fig. 3 (Holotype), Pl. 3, figs. 4-5 (Paratypes)

Holotype: ESN 145014, Paratypes: ESN145015-145016 (Dept. Earth Sci., Nagoya Univ.)

Point of I-8 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Zadrappolus yoshikiensis* Furutani, 1990**

Jour. Earth Sci. Nagoya Univ., Vol. 37, 35-36, Pl. 2, fig. 6 (Holotype), Pl. 2, figs. 4-6, Pl. 3, 1-2 (Paratypes)

Holotype: ESN 145011, Paratypes: ESN145009-145010, ESN145012-145013 (Dept. Earth Sci., Nagoya Univ.)

Point of I-7 (Holotype), Ichinotani Valley in the Fukuji area, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan; 36 °13.0'N, 137 °31.5'E

Yoshiki Formation (s. l.)

Presumed to be latest Silurian or early Devonian

***Zamolxis dunitricai* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1191, 1193, Figs. 9-2a, 2b (Holotype), Figs. 9-3a, 3b (Paratype)

Holotype: ESN 146129, Paratype: ESN 146127 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 40, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early Triassic

***Zevius perarmatus* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1204-1205, Figs. 12-6a, 6b (Holotype)

Holotype: ESN 146155 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 37, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and Kamiaso Unit of Wakita (1988)

Early and Middle Triassic

***Zevius yaoi* Sugiyama, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., No. 167, 1204, Fig. 12-4 (Holotype), Fig. 12-7 (Paratype)

Holotype: ESN 146152, Paratype: ESN 146153 (Dept. Earth Sci., Nagoya Univ.)

Sample KIN 38, Mt. Kinkazan, approximately at the center of Gifu City, Gifu Prefecture, Japan; 35 °25.4'N, 136 °46.9'E

Paleozoic-Mesozoic sedimentary complexes of the Mino Terrane, and belongs to the Complex 3 of Otsuka (1988) and

Kamiaso Unit of Wakita (1988)
Early and Middle Triassic

***Zhamoidellum mikamense* Aita, 1987**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Vol. 58, 74, Pl. 10,
fig. 10 (Holotype), Pl. 10, fig. 11 (Paratype)

Holotype: IGPS 99637, Paratype: IGPS 99638 (Inst. Geol.
Paleont., Tohoku Univ.)

Sample IRZ-3, Irazu Valley Section III, Mt. Irazu area,
Higashitsuno-mura, Takaoka-gun, Kochi Prefecture, Shikoku,
Japan; 33°26.1'N, 133°03.4'E (Holotype)

Irazuyama Formation

Jurassic (Callovian to Kimmeridgian)

Cenozoic Smaller Benthic Foraminifera

Shiro Hasegawa

Department of Earth Sciences, Faculty of Science,
Kumamoto University, Kumamoto 860-8555, Japan

Ammobaculites akabiraensis Asano, 1954

Geol. Soc. Japan, Jour., v. 60, no. 701, 48, Text-figs. 1a, b.
Holotype: IGPS no. 75292, Paratype: (Text-fig. 2).
Sorachi River-cliff, 3 km SE of the Akabira Railway Station on
the Nemuro Line, Akabira City, Hokkaido, Japan
Wakkanabe Formation
Late Eocene

Ammobaculites amarus Hada, 1957

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4,
30, Figs. 10a-d.
Holotype: (unknown)
Either two brackish-water lakes, Hijirippu or Mochirippu, lying
on the southeast Pacific coast of Hokkaido, Japan
Recent

Ammobaculites formosensis Nakamura, 1937

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 133, Pl. 10, Figs. 1a, b.
Holotype: IGPS no. 60852.
Well No. 1, Hozan oilfield, northern Taiwan (Formosa)
Lower Byoritu beds (about 833.2-886.4 m in depth)
Tertiary

Ammobaculites yumotoensis Asano, 1949

Jour. Paleontol., v. 23, no. 5, 474, Fig. 1, no. 1a, b.
Holotype: IGPS no. 67029.
500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun
(Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan (37°
00.5'N, 140°51.3'E)
Asagai Formation
Oligocene

Ammodiscoides hanzawai Murata & Sugahara, 1960

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 4, 299,
Pl. 32, Figs. 5-7.
Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 13.
Sumitomo Ariake Well, Ariake Bay, Kumamoto Pref., Japan
(32°55'N, 130°28'E)
Paleogene

Ammodiscoides japonicus Asano & Inomata, 1952

Illust. Cat. Japan. Small. Foram., suple. 1, 3, Figs. 9-11.
Holotype: IGPS no. 75255.
Araya, Kawaguchi-mura (Araya, Kawaguchi-machi),
Kitaonuma-gun, Niigata Pref., Japan (37°18.0'N, 138°51.6'E)
Araya Formation
Miocene

Ammodiscus ariakensis Murata & Sugahara, 1960

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 4, 298,
Pl. 32, Figs. 8, 9.
Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 12.
Yamaguchi, Kazusa-machi, Minamitakaki-gun, Nagasaki Pref.
(Shimabara Peninsula), Japan (32°38'N, 130°11'E)
Paleogene

Ammodiscus datensis Fujita & Ito, 1957

Geol. Soc. Japan, Jour., v. 63, no. 744, Pl. 10, figs. 7a, b.
(Erroneously given for *Ammodiscus ovata* Fujita & Ito, 1957 (p.
507) as *Ammodiscus datensis* in the plate explanation.)

Ammodiscus osumiensis Kuwano, 1960

Res. Inst. Nat. Resour., Misc., Rep., nos. 52-53, 142, Pl. 6, figs.
3, 3c.
Holotype: Res. Inst. Nat. Resour., YK-H0006, Paratype: Res.
Inst. Nat. Resour., YK-P0011 & P0012 (Pl. 6, figs. 4, 4c, 5, 5c).
Loc. 3, a road-side outcrop, 400 m E of Tanoura, Sata-machi,
Kimotsuki-gun, Kagoshima Pref., Japan
Nichinan Group (uppermost part)
Eocene

Ammodiscus ovata Fujita & Ito, 1957

Geol. Soc. Japan, Jour., v. 63, no. 744, 507, Pl. 10, figs. 7a, b.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50104.
The cliff at the banks of the Ubugasawa River at Uchinobaba,
Koori-machi, Date-gun, Fukushima Pref., Japan
Koori Member, Date Formation
Miocene
(Erroneously given as *Ammodiscus datensis* in the plate
explanation.)

Ammonia sandakanensis Ujjié, 1977

Geol. Paleontol. Southeast Asia, v. 18, 93, Textfig. 1c; Pl. 16,
figs. 1a-c.
Holotype: NSM, Micropal. Coll. 934, Paratypes: NSM,
Micropal. Coll. 935, 1023 & 1024 (Pl. 16, figs. 2a-c; Pl. 20, figs.
10, 11).
Southern coast of Sandakan Peninsula near Baharu, Sabah State,
North Borneo, Malaysia
Sandakan Formation
Middle Miocene

Ammonia shutoi Ujjié, 1977

Geol. Paleontol. Southeast Asia, v. 18, 94, Pl. 17, fig. 1; text-fig.
10.
Holotype: NSM, Micropal. Coll. 939, Paratypes: NSM,
Micropal. Coll. 1025-1027 (Pl. 21, figs. 1, 2, 4).
Sungai Manila Settlement, 20 km NW of Sandakan, Sabah State,
North Borneo, Malaysia
Sandakan Formation
Middle Miocene

***Angulodiscorbis quadrangularis* Uchio, 1952**

Japanese Jour. Geol. Geogr., v. 22, 156, Pl. 7, figs. 4a-c.

Holotype: UMUT CF 3044.

Beach at Yaene, Ogago-mura (Ookagou, Hachijo-machi), Hachijo Island, ca. 300 km S of Tokyo, Japan (33 °05'N, 139 °48'E)

Water depth: 0 m

Recent

***Angulogerina ikebei* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 396, Pl. 34, figs. 8a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Kami-tajiri, Tajiri-mura, Kariha-gun (Kariwa-gun), Niigata Pref., Japan

Haizume Formation

Pliocene

***Angulogerina japonica* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 615, Pl. 17(6), fig. 17.

Holotype: IGPS no. 21431.

St. 5, Urashima-sho, Wakasa Bay, Japan Sea

Water depth: 198 m

Recent

***Angulogerina kawabeensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 112, Pl. 42, figs. 1a, b.

Holotype: IGPS no. 85251.

Iwamisannai-mura, Kawabe-gun, Akita Pref., Japan

Wakimoto Formation

Upper Miocene?-Pliocene

***Angulogerina kokozuraensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 428, Fig. 1, no. 50.

Holotype: IGPS no. 67040, Paratypes: (Fig. 1, nos. 51-53).

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36 °51.5'N, 140 °48.0'E)

Kokozura Formation

Middle Miocene

***Anomalina asanoi* Murata, 1951**

Kyushu Inst. Technol., Bull., no. 1, 96, Pl. 1, text-figs. 3a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. no. MM-245, 500 m SE of Fumoto, Mukasa-mura, Higashi-morogata-gun, Miyazaki Pref., Japan (31 °55.0'N, 131 °20.0'E)

Kuraoka Formation, Miyazaki Group

Late Miocene

***Anomalina floscularia* Yokoyama, 1890**

Palaeontographica, v. 36, 194, Pl. 24, figs. 19a-c.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City),

Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Anomalina hamanaoensis* Ishiwada, 1958**

Geol. Survey Japan, Rep., no. 180, 18, Text-figs. 3a-c; Pl. 1, figs. 24a, b; Text-figs. 3a-c.

Holotype: Geol. Surv. Japan PF 57024, Paratype: (Pl. 1, figs. 25-27).

Loc. F11, southern part of the main basin of the brackish lake Hamana-ko, Shizuoka Pref., Japan

Water depth: 1.4 m

Recent

***Anomalina kojimaensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 389, Pl. 42, figs. 3a, b.

Holotype: IGMSH coll. (not numbered).

100 m in depth of the boring well at Nishitakasaki, Nadazaki-machi, Kojima-gun, Okayama Pref., Japan (34 °32'45.11"N, 133 °53'32.41"E)

Upper Bihoku Group

Miocene

***Anomalina nipponica* Asano & Inomata, 1952**

Illust. Cat. Japan. Small. Foram., suple. 1, 17, Figs. 95, 96 .

Holotype: IGPS no. 75256.

800 m E of the railway-bridge at Nobe, Muikaichi-mura, Koshi-gun (Muikaichi-machi, Nagaoka City), Niigata Pref., Japan (37 °18.9'N, 138 °49.5'E)

Shiraiwa Formation

Pliocene

***Anomalinoides sasai* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 128, Pl. 11, figs. 4a-c.

Holotype: IGPS no. 98179.

Sample KUM32, Kumanosawa, Yubari City, Hokkaido, Japan Poronai Formation

Late Eocene-Oligocene

***Ashbrookia tuberculata* Ujiie, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 167, Pl. 29, figs. 1a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 29, figs. 2, 3a-c).

Loc. 8, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 116 m

Recent

***Astacolus etigoensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 207, Pl. 29(6), fig. 23.

Holotype: IGPS no. 21472.

Natsukawa-dani, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan
Natsukawa Formation
Pliocene

***Astrononion aomoriense* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 5, Figs. 27, 28.

Holotype: IGPS no. 66118.

Kuniyoshi, Higashimeya-mura, Nakatsugaru-gun (Kuniyoshi, Hirosaki City), Aomori Pref., Japan (40°35.1'N, 141°20.2'E)

Higashimeya Formation

Late Pliocene

***Astrononion hamadaense* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 6, Figs. 29-31.

Holotype: IGPS no. 66119.

A sea-cliff at Hamada, Tanabu-machi, Shimokita-gun (Hamada, Yokohama-machi, Kamikita-gun), Aomori Pref., Japan (41°08.0'N, 141°16.6'E)

Hamada Formation

Pliocene

***Astrononion hanyudaense* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 107, Pl. 35, figs. 8a, b.

Holotype: IGPS no. 85179.

A core at 152.0 m in Hanyuda R-1 Well of Teikoku Oil Company, at Hanyuda-mura, Nakakanbara-gun (Hanyuda, Tagami-machi, Minamikanbara-gun), Niigata Pref., Japan

Shiroiwa Formation

Pliocene

***Astrononion hayamaense* Kurihara, 1971**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 83, 140, Pl. 15, figs. 8a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68051.

No. 7454, sea-side exposure at Manase, Hayama-machi, Miura-gun, Kanagawa Pref., Japan

Morito Formation, Hayama Group

Early Miocene

***Astrononion umbilicatum* Uchio, 1952**

Japanese Assoc. Petroleum Technol., Jour., v. 17, no. 1, 36, Text-figs. 1a, b.

Holotype: UMUT CF 3044.

Uchi-nagaya, Mobara-machi, Chosei-gun (Uchinagaya, Mobara City), Chiba Pref., Japan

Kasamori Formation

Early Pleistocene

***Astrorhiza crassatina* Brady var. *asper* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 24, Fig. 1.

Holotype: (unknown).

Vicinity of Hagi, Yamaguchi Pref., Japan
Recent

***Baggina nagasakiensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 58, Pl. 9, figs. 9a, b.

Holotype: IGPS no. 77191, Paratype: (Pl. 9, figs. 10a, b).

IGPS loc. no. Ns-3 (Takashima Coal-field), Okinoshima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32°41.5'N, 129°46.8'E)

Okinoshima Formation

Eocene

***Baggina notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 10, Pl. 3, figs. 17a-c.

Holotype: IGPS no. 75280.

IGPS loc. no. Iw-16, Gonda, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37°21.4'N, 137°07.2'E)

Higashi-innai Formation

Miocene

***Baggina saitoi* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 51, Pl. 8, figs. 16a, b.

Holotype: IGPS no. 77178.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33°19.7'N, 129°55.8'E)

Kishima Formation

Oligocene

***Baggina sphaerica* Ujiie, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 86, Pl. 2, figs. 12a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50202, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50203 (Pl. 2, fig. 13).

Loc. C, Shibaoka, Minano-machi, Chichibu-gun, Saitama Pref., Japan

Nenokami Formation

Early Miocene

***Baggina totomiensis* Makiyama, 1931**

Kyoto Imp. Univ., Coll. Sci., Mem., Ser. B, v. 7, no. 1, 52, Text-fig. 4.

Holotype: Geol. Inst. Kyoto Univ.(?)

800 m E of Asuka, Taruki-mura, Ogasa-gun (Asuka, Kakegawa City), Shizuoka Pref., Japan (34°48.0'N, 138°00.0'E)

Dainichi sand

Pliocene

***Barkerina osumiensis* Kuwano var. *sataensis* Kuwano, 1960**

Res. Inst. Nat. Resour., Misc., Rep., nos. 52-53, 142, Pl. 6, figs. 13, 13a.

Holotype: Res. Inst. Nat. Resour., YK-H0008, Paratype: Res. Inst. Nat. Resour., YK-P0016 (Pl. 6, figs. 14, 14a).
Loc. 3, a road-side outcrop, 400 m E of Tanoura, Sata-machi, Kimotsuki-gun, Kagoshima Pref., Japan
Nichinan Group (uppermost part)
Eocene

***Barkerina osumiensis* Kuwano, 1960**

Res. Inst. Nat. Resour., Misc., Rep., nos. 52-53, 142, Pl. 6, fig. 8.
Holotype: Res. Inst. Nat. Resour., YK-H0007, Paratypes: Res. Inst. Nat. Resour., YK-P0013-15 (Pl. 6, figs. 9-11).
Loc. 3, a road-side outcrop, 400 m E of Tanoura, Sata-machi, Kimotsuki-gun, Kagoshima Pref., Japan
Nichinan Group (uppermost part)
Eocene

***Bifarina japonica* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 606, Pl. 16(5), fig. 12.
Holotype: IGPS no. 21444.
Soyo-maru St. no. 347, Kii Channel, central Japan
Water depth: 126 m
Recent

***Bifarina tonohamaensis* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 32, Pl. 4, figs. 8a, b.
Holotype: IGPS no. 67142.
Ko-23, cliff of the tributary of the Nahari River in the northwestern part of Tano-cho, Aki-gun, Kochi Pref., Japan (33°25'38"N, 134°00'14"E)
Ananai Formation
Pliocene

***Bifarinella ryukyuensis* Cushman & Hanzawa, 1936**

Cushman Lab. Foram. Res., Contr., v. 12, pt. 2, 46, Pl. 8, figs. 7, 8.
Holotype: U.S.N.M. 23141.
500 m N of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Pref. (Kikai-jima), Japan
Ryukyu Limestone
Pleistocene

***Bigenerina speciosa* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 97, Pl. 19(3), fig. 5.
Syntype: IGPS no. 21417.
St.94, Sengkol, Bantam, West Java, Indonesia
Formation III
Miocene

***Bigenerina taiwanica* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 136, Pl. 10, figs. 9a, b.

Holotype: IGPS no. 60860.
Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)
Lower Byoritu beds (lowest part)
Tertiary

***Biloculinella japonica* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 79, Pl. 9, fig. 24.
Holotype: IGPS no. 66840.
Soyo-maru St. no. 297, off Tanegashima, Kagoshima Pref., Japan
Water depth: 516 m
Recent

***Bolivina asanoi* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 373, Pl. 5, figs. 10a, b.
Holotype: UMUT CF 3022.
Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan
Momiyama Sandstone Member, Kanuma Formation
Middle Miocene

***Bolivina bradyi* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 603, Pl. 16(5), fig. 2.
Holotype: IGPS no. 21424.
Soyo-maru St. no. 352, west coast of Kii peninsula, central Japan
Water depth: 154 m
Recent

***Bolivina elliptica* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 91, Pl. 15, fig. 1.
Holotype: NSM, Micropal. Coll. 953, Paratypes: NSM, Micropal. Coll. 954, 1033 (Pl. 15, fig. 2; Pl. 20, fig. 2).
Along the Labuk Road on the Sandakan Peninsula, North Boreno, Malaysia
Sandakan Formation
Miocene

***Bolivina euplectella* Yokoyama, 1890**

Palaeontographica, v. 36, 191, Pl. 24, figs. 13, 14.
Holotype: (unknown)
Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
Poronai shale (Poronai Formation)
Cretaceous (Oligocene)

***Bolivina formosana* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 140, Pl. 12, figs. 2a, b.
Holotype: IGPS no. 60873.
Intosi, Tikuto-gai, Tikuto-gun, Shitiku Pref., northern Taiwan

(Formosa)
Lower Byoritu beds
Tertiary

***Bolivina fujimotoi* Ujiié, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 82, Pl. 2, fig. 4.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50232,
Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50233
(Pl. 2, fig. 5).
Loc. A, Oobuchi, Minano-machi, Chichibu-gun, Saitama Pref.,
Japan
Tomita Formation
Early Miocene

***Bolivina hadai* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 388, Pl. 18, fig. 3.
Holotype: Fac. Tech., Univ, Tokyo, TU1012.
St. 104, off the mouth of the River Shinano, Niigata Pref., Japan
Sea (38 °53.5"N, 139 °20'15.5"E)
Water depth: 43 m
Recent

***Bolivina hadai* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 388, Pl. 18, fig. 4.
Paratype: Fac. Tech., Univ, Tokyo, TU1013.
St. 112, off the mouth of the River Shinano, Niigata Pref., Japan
Sea (38 °11'58.4"N, 139 °20'22.8"E)
Water depth: 48 m
Recent

***Bolivina hanzawai* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 330, Pl. 37, figs. 9a,
b.
Holotype: IGPS no. 21383A.
800 m E of Asuka, Taruki-mura, Ogasa-gun (Asuka, Kakegawa
City), Shizuoka Pref., Japan (34 °48.0'N, 138 °0.2'E)
Dainichi sand
Late Pliocene

***Bolivina himiensis* Chiji & Nakaseko, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 663, 519, Figs. 1a, b.
Holotype: Geol. Inst. Kyoto Univ. (not numbered).
Ajikawa, Goishi-mura, Himi-gun (Ajikawa, Himi City), Toyama
Pref., Japan (36 °54.1'N, 136 °55.9'E)
Takado mudstone (Nakanami Formation)
Miocene

***Bolivina hongoensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 388, Pl. 40, figs.
5a, b.
Holotype: IGMSH coll. (not numbered).
Road cliff at Hongo, Tetsuta-machi, S of Niimi City (Hongo,
Tetsuta-cho, Atetsu-gun), Okayama Pref., Japan
Upper Bihoku Group

Miocene

***Bolivina küiensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 19, Pl. 4, fig. 8.
Holotype: IGPS no. 77171.
Soyo-maru St. no. 347, Kii Channel, central Japan
Water depth: 126 m
Recent

***Bolivina küiensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 19, Pl. 4, fig. 7.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Soyo-maru St. no. 345, off Muroto-zaki, Kochi Pref., Japan
Water depth: 199-165 m
Recent

***Bolivina longicostata* LeRoy leei Ujiié, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 91, Pl. 15, fig. 8.
Holotype: NSM, Micropal. Coll. 958, Paratypes: NSM,
Micropal. Coll. 959 & 1034 (Pl. 15, fig. 9; Pl. 20, fig. 1).
Along the Labuk Road on the Sandakan Peninsula, North
Boreno, Malaysia
Sandakan Formation
Miocene

***Bolivina marginata* Cushman masudai Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 10, Pl.
2, fig. 13.
Holotype: IGPS no. 75281, Paratype: (Pl. 2, fig. 14).
IGPS loc. no. IW-13, Yokoyama, Nishiumi-mura, Suzu-gun
(Yokoyama, Suzu City), Ishikawa Pref. (Noto Peninsula), Japan
(37 °31.4'N, 137 °18.9'E)
Higashi-innai Formation
Miocene

***Bolivina nagaoui* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 60, Pl. 9, fig.
11.
Holotype: IGPS no. 77198, Paratype: (Pl. 9, fig. 12).
IGPS loc. no. Ns-4 (Takashima Coal-field), Iojima, Iojima-cho,
Nishisonogi-gun, Nagasaki Pref., Japan (32 °42.2'N, 129 °46.8'E)
Iojima Formation
Oligocene

***Bolivina otukai* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 35, Pl. 3, figs.
7a, b.
Holotype: UMUT CF 3012.
Sea-cliff, about 500 m N of Kazusaminato Railway Station on
West Boso Line, Futtsu City, Chiba Pref. (Boso Peninsula),
Japan (35 °13.4'N, 139 °52.4'E)
Iwasaka fine sandstone (middle part)
Pliocene

***Bolivina pseudodiformis* Asano, 1938**

Asano, 1950, Illust. Cat. Japan. Small. Foram., pt. 2, 9, Fig. 37.

Neotype: IGPS no. 66941.

Sea-cliff at Nihima-ura, Kanazawa-machi (Kanazawa-ku), Yokohama City, Kanagawa Pref., Japan (35 °19.5'N, 139 °39.2'E)

Kanazawa Formation

Pliocene

(Holotype (IGPS no. 66941) designated by Asano (1938) was lost.)

***Bolivina retia* Oki, 1989**

South Pacific Study, v. 10, no. 1, 109, Pl. 9, figs. 7a, f.

Holotype: ESK F-8677, Paratypes: ESK F-8679-8681 (Pl. 9, figs. 7c-e).

St. 139, bay mouth of Kagoshima Bay, Kagoshima Pref., Japan (31 °9.0'N, 130 °40.5'E)

Water depth: 105 m

Recent

***Bolivina retia* Oki, 1989**

South Pacific Study, v. 10, no. 1, 109, Pl. 9, fig. 7b.

Paratype: ESK F-8678.

St. 103, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °17.9'N, 130 °44.6'E)

Water depth: 175 m

Recent

***Bolivina sintikuensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 140, Pl. 12, figs. 1a, b.

Holotype: IGPS no. 60874.

Tikukooku, Koko-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)

Upper Byoritu beds

Tertiary

***Bolivina striatula* Cushman *nishikanbaraensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 111, Pl. 40, figs. 14a, b.

Holotype: IGPS no. 85236.

A core at depth of 339.5 m in Sone R-1 Well of Teikoku Oil Company, Sone-mura, Nishikabara-gun, Niigata Pref., Japan

Wanazu Formation

Pliocene

***Bolivina subangularis* Brady var. *ogasaensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 331, Pl. 37, fig. 8.

Holotype: IGPS no. 21384.

Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation, Kakegawa Group

Late Pliocene

***Bolivina substriatula* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 23, Pl. 4, fig. 14.

Holotype: IGPS no. 77172, Paratype: (Pl. 4, fig. 13).

Soyo-maru St. no. 347, Kii Channel, central Japan

Water depth: 126 m

Recent

***Bolivina substriatula* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 23, Pl. 4, fig. 11.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 228, off Ashizuri-misaki, Japan

Water depth: 201 m

Recent

***Bolivina substriatula* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 23, Pl. 4, fig. 12.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 225, Tosa Bay, Japan

Water depth: 349 m

Recent

***Bolivina tainanensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 90, Pl. 5, figs. 7a, b.

Holotype: IGPS no. 63730.

At 191.5 m in the Kyuson No.1 Well of Taiwan Mining Company, Kyusorin, Tamai-syo, Sinka-gun, Tainan Pref., southern Taiwan (Formosa)

Koteiko beds

Tertiary

***Bolivina tikutoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 140, Pl. 12, figs. 3a, b.

Holotype: IGPS no. 60875.

Intosi, Tikuto-gai, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Bolivina tokiokai* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 389, Pl. 18, figs. 5a, b.

Holotype: Fac. Tech., Univ. Tokyo, TU1014.

St. 60, off the mouth of the River Shinano, Niigata Pref. Japan, Japan Sea (38 °55.1'N, 139 °11'9.3"E)

Water depth: 64 m

Recent

***Bolivina tosaensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 23, Pl. 4, figs. 3a, b.

Holotype: IGPS no. 77173.

Soyo-maru St. no. 340, Tosa Bay

Water depth: 480 m

Recent

***Bolivina tosaensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 23, Pl. 4, fig. 4.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 495, SW of Oki Islands, Japan Sea

Water depth: 146 m

Recent

***Bolivina yabei* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 31, Pl. 4, figs. 9a, b.

Holotype: IGPS no. 67146.

Ko-25, a cliff, 100 m E of Nobori, Hane-mura, Aki-gun (Nobori, Hane-cho, Muroto City), Kochi Pref., Japan (33°22'09"N, 134°3'33"E)

Nobori Formation

Pliocene

***Bolivinina quadrilatera* (Schwager) *cuneata* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 608, Pl. 16(5), figs. 19a, b.

Holotype: IGPS no. 21427.

Road cutting between Takaya and Watanai, Fujisawa City, Kanagawa Pref., Japan (35°20.2'N, 139°30.2'E)

Tomioka Formation

Pliocene

***Bolivinopsis hiratai* Uchio, 1953**

Japanese Jour. Geol. Geogr., v. 23, 153, Pl. 14, fig. 5.

Holotype: UMUT CF 3049.

Loc. II-112, Shoryuji, Nakagawa-mura, Isumi-gun (Shoryuji, Isumi-machi), Chiba Pref. (Boso Peninsula), Japan

Otaidai Formation

Pliocene

***Bolivinopsis itchodaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 66, Pl. 11, figs. 11a, b.

Holotype: IGPS no. 77210.

No. Ku, About 1 km W of Kanyama, Itchoda-mura (Kanyama, Kawaura-machi), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°19.5'N, 130°04.2'E)

Sakasegawa Formation

Eocene

***Brizalina kaiensis* Akimoto, 1991**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 61, no. 1, 89, Pl. 1,

figs. 1a-e.

Holotype: IGPS no. 100602, Paratype: IGPS no. 100601 (Pl. 5, fig. 12).

NAN01, a river-side cliff at the right side of the Fujigawa River, about 1.12 km N from the bridge of Route 52, near the hamlet of Nakano, Minobu-cho, Minamikoma-gun, Yamanashi Pref., Japan (35°18.32'N, 138°22.25'E)

Minobu Formation (uppermost part)

early Late Miocene

***Brizalina saitoi* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 121, Pl. 8, figs. 10a, b.

Holotype: IGPS no. 98100.

Sample PRN34, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Brizalina serrata* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 8, fig. 11.

Holotype: IGPS no. 98101.

Sample PRN34, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Brizalina serrata* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 8, fig. 12.

Paratype: IGPS no. 98102.

Sample KUM47, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Buccella kuromatsunaiensis* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., ser. 4, Geol. & Mineral., v. 10, no. 3, 540, Pl. 2, figs. 2a-c.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13563.

Kaigara-sawa, Kuromatsunai-machi (Kaigarasawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Buccella makiyamae* Chiji, 1961**

Prof. J. Makiyama Mem., 234, Text-figs. 2a-c; Pl. 1, figs. 13, 14a, b; Text-figs. 2a-c.

Holotype: OMNH Reg. No. F3469F, Paratype: OMNH Reg. No. F3471F (figs. 13a, b).

A cliff on the north side of a road cut near the Himi Upper Secondary School, Himi City, Toyama Pref., Japan

Asahiyama shell bed (basal part of a 20 cm thick terrace sediment)

Pleistocene

(*Buccella makiyamae* in the original description.)

***Buccella morishimai* Chiji, 1961**

Osaka Mus. Nat. Hist., Bull., no. 14, 77, Pl. 1, figs. 4a, b.

Holotype: OMNH Reg. No. F7867F.

F22, in the Hitou-Sunagodani-Sunagozaka section, about 700 m S of Hitou, Fukumitsu-cho, Nishitonami-gun, Toyama Pref., Japan

Onma Sandstone (Omma Formation)

Pliocene

(*Buccella morishimae* in the original description.)

***Buccella oregonensis* (Cushman) akahiraensis Ujiié, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 83, Pl.2, figs. 9a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50239,

Paratypes: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50240, 50496-50498 (Text-figs. 3a, b, 4, 5; Pl.2, fig. 10).

Loc. E, Oobuchi, Minano-machi, Chichibu-gun, Saitama Pref., Japan

Nenokami Formation

Early Miocene

***Buchnerina okinawaensis* Ujiié, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 167, Pl. 23, figs. 1a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Loc. 35, between Kuroshima and Kohama Islands of Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 23 m

Recent

***Bulimina baccata* Yokoyama, 1890**

Palaeontographica, v. 36, 190, Pl. 24, figs. 9a-c.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Bulimina capitata* Yokoyama, 1890**

Palaeontographica, v. 36, 190, Pl. 24, figs. 10a-c.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Bulimina enouraensis* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 82, Pl. 1, figs. 11, 12.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2007.

Kamihara borehole of the Kishima Coal Mining Co., southern Isahaya City, Nagasaki Pref., Japan

Enoura Formation (black shales at a depth between 102 and 111 m)

Middle Eocene

***Bulimina ezoensis* Yokoyama, 1890**

Palaeontographica, v. 36, 190, Pl. 24, figs. 5a-c.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Bulimina honjoensis* Iwasa, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 712, 16, Text-figs. 1a, b.

Holotype: IGPS no. 65501.

Rotary No. 1 Well at 150 m E of the Funaoka Shrine, Funaoka, Honjo City, Akita Pref., Japan

Osawa Formation

Pliocene

***Bulimina imamurai* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 387, Pl. 40, fig. 3.

Holotype: IGMSH coll. (not numbered).

121.3 m in depth of the boring well at Nishitakasaki, Nadazaki-machi, Kojima-gun, Okayama Pref., Japan (34 ° 32'45"N, 133 ° 53'32.4"E)

Upper Bihoku Group

Miocene

***Bulimina kamedaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 111, Pl. 40, figs. 2a, b.

Holotype: IGPS no. 85225.

A core at depth of 215 m in Kameda R-1 Well of Teikoku Oil Company, Kameda-machi, Yuri-gun, Akita Pref., Japan

Onnagawa Formation

Miocene

***Bulimina kochiensis* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 31, Pl. 4, figs. 12a-c.

Holotype: IGPS no. 67139.

Ko-22, Kitahari, Tano-cho, Aki-gun, Kochi Pref., Japan (33 ° 26'05"N, 134 ° 0'06"E)

Ananai Formation

Pliocene

***Bulimina nipponica* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 6, Pl. 1, fig. 14.

Holotype: IGPS no. 77168, Paratype: (Pl. 1, fig. 13).

Soyo-maru St. no. 346, Kii Channel, central Japan

Water depth: 539 m

Recent

***Bulimina nipponica* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 6, Pl. 1, fig. 15.
 Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
 Soyo-maru St. 25, off Shioya-zaki, Fukushima Pref., Japan
 Water depth: 525 m
 Recent

***Bulimina nojimaensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 2, 4, figs. 15, 16.
 Holotype: IGPS no. 66940.
 A road-side cutting at Nojimaura, Kanazawa-machi (Nojima-machi, Kanazawa-ku), Yokohama City, Kanagawa Pref., Japan (35 °19.5'N, 139 °39.2'E)
 Kanazawa Formation
 Pliocene

***Bulimina okayamaensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., ser. C, v. 2, no. 4, 387, Pl. 41, figs. 3a, b.
 Holotype: IGMSH coll. (not numbered).
 Boring well at Nishitakasaki, Nadazaki-machi, Kojima-gun, Okayama Pref., Japan
 Upper Bihoku Group (121.3 m in depth)
 Miocene

***Bulimina polymorphinoides* Yokoyama, 1890**

Palaeontographica, v. 36, 191, Pl. 24, figs. 11a-c.
 Holotype: (unknown).
 Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
 Poronai shale (Poronai Formation)
 Cretaceous (Oligocene)

***Bulimina schwageri* Yokoyama, 1890**

Palaeontographica, v. 36, 190, Pl. 24, figs. 6-8.
 Holotype: (unknown).
 Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
 Poronai shale (Poronai Formation)
 Cretaceous (Oligocene)

***Bulimina simaensis* Makiyama & Nakagawa, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 572, 241
 Holotype: Geol. Inst. Kyoto Univ. (not numbered).
 330 m S of the Hazama Railway Station on the Shima Railway (Kintetsu-Shima Line), Kiba, Isobe-machi, Shima-gun (Shima Peninsula), Mie Pref., Japan
 Pleistocene
 (This species has never been figured.)

***Bulimina striata* d'Orbigny *notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 11, Pl. 2, fig. 16.
 Holotype: IGPS no. 75282, Paratype: (Pl. 2, fig. 17).

IGPS loc. no. IW-13, Yokoyama, Nishiumi-mura, Suzu-gun (Yokoyama, Suzu City), Ishikawa Pref. (Noto Peninsula), Japan (37 °31.4'N, 137 °18.9'E)
 Higashi-innai Formation
 Miocene

***Bulimina ujiei* Aoki, 1960**

In Iwabuchi et al., Hydrographic Office of Japan, Mar. Res. Lab., Contr., v. 2, no. 2, 100, Pl. 1, no., 5.
 Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52037, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52038 (Pl. 1, no., 5).
 Piston core from Nakanose, off Yokohama City, Tokyo Bay
 Layer No. 23 (220-230 cm in depth); paratype: Layer No. 25 (24-25 cm)
 Holocene

***Bulimina yabei* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 53, Pl. 8, fig. 13.
 Holotype: IGPS no. 77184, Paratype: (Pl. 8, fig. 12).
 IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 ° 55.8'E)
 Kishima Formation
 Oligocene

***Buliminella hanzawai* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 428, Fig. 1, nos. 54, 55.
 Holotype: IGPS no. 67048.
 Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36 °51.5'N, 140 °48.0'E)
 Kokozura Formation
 Middle Miocene

***Buliminoides bantamensis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 121, Pl. 17(1), fig. 20.
 Holotype: IGPS no. 21329.
 St.848, Tjilegong, Bantam, West Java, Indonesia
 Formation VI
 Pliocene

***Burseolina bullaeformis* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 90, Pl. 2, figs. 10a-c.
 Holotype: IGPS no. 97246A, Paratype: IGPS no. 97246B (unfigured).
 BS-7, outcrop, 50 m E of Kugahara Railway Station, Otaki-machi, Isumi-gun, Chiba Pref. (Boso Peninsula), Japan
 35 °14'49"N, 140 °15'05"E
 Otadai Formation
 Early Pleistocene

***Burseolina marshallana* (Todd) minima Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 92, Pl. 2, figs. 12a, b.

Holotype: IGPS no. 97247A, Paratype: IGPS no. 97247B (unfigured).

OK-14, outcrop, about 600 m NE of Medoruma, Oozato-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26° 09'48"N, 127° 45'03"E)

Yonabaru Formation

Early Pliocene

***Carinomonis helenae* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 69, Pl. 12, figs. 3a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Multiple core KT94-9MC3, at Tokara Strait, Okinawa Pref. Japan (29° 20.1'N, 130° 30.3'E)

Water depth: 1167 m

Recent

***Carinomonis helenae* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 69, Pl. 12, fig. 4.

Paratype: NSM, Micropal. Coll. (not numbered).

Ocean grab sample RN88-OK5 at just N of Iriomote Island, Okinawa Pref., (24° 15.5'N, 125° 09.5'E)

Water depth: 1680 m

Recent

***Carinomonis helenae* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 69, Pl. 12, fig. 5.

Paratype: NSM, Micropal. Coll. (not numbered).

Pilot core RN93 PC8, just N of Iriomote Island, Okinawa Pref., Japan (24° 33.6'N, 123° 44.9'E)

Water depth: 1561 m

Recent

***Cassidulina alternans* Yabe & Hanzawa, 1925**

Japanese Jour. Geol. Geogr., v. 4, nos. 1-2, 53, Text-figs. a, b.

Holotype: IGPS no. 63670. (fide Hasegawa and Nomura, 1995)

St. 1116 of Imp. Hydrogr. Dept., Japan, S of Okinawa Island, Okinawa Pref., Japan (25° 50.7'N, 127° 25.6'E).

Water depth: 1580 m

Recent

***Cassidulina asanoi* Uchio, 1950**

Japanese Assoc. Petroleum Technol., Jour., v. 15, no. 4, p. 190, Fig. 13.

Holotype: UMUT CF 3003.

Oyagi, Tsuchimutsu-mura (Oyagi, Mutsuzawa-machi), Chosei-gun, Chiba Pref., Japan (35° 22.0'N, 140° 18.8'E)

Kokumoto Formation

Pliocene

***Cassidulina brevis* Aoki, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70., 261, Pl. 27,

fig. 4.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu. (not numbered).

Nr. 219, river-side exposure of the Yoro River, 600 m N of the Etabu Station, Kamo-mura, Ichihara-gun (Ichihara City), Chiba Pref. (Boso Peninsula), Japan

Chonan Formation, Kazusa Group

Early Pleistocene

***Cassidulina complanata* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 766, Pl. 1, fig. 1.

Holotype: NSMP1 7240.

Station 503, northern end of Miyako Bay, Iwate Pref., Japan

Water depth: 37 m

Recent

***Cassidulina complanata* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 766, Pl. 1, fig. 2.

Paratype: NSMP1 7241.

Station 618, northern end of Miyako Bay, Iwate Pref., Japan

Recent

(*nom. nud.*; junior homonym preoccupied by *C. complanata* Voloshinova, 1952.)

***Cassidulina crepidula* Kuwano, 1954**

Res. Inst. Nat. Resour., Misc., Rep., no. 35, 33, Figs. 1-3.

Holotype: Res. Inst. Nat. Resour., YK-H0003.

Rail-road cutting at the western end of the tunnel between Kazusaminato and Takeoka Stations, Takeoka-mura, Kimitsu-gun (Takeoka, Futtu City), Chiba Pref. (Boso Peninsula), Japan

Takeoka tuff breccia

Pliocene

***Cassidulina elegans* Sidebottom var. *boseensis* Kuwano, 1954**

Res. Inst. Nat. Resour., Misc., Rep., no. 35, 34, Figs. 7-11.

Holotype: Res. Inst. Nat. Resour., YK-H0005.

Cliff in a small tributary of the Yoro River, about 2.3 km N of Kaisho, Oiwada-mura (Kaisho, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Kiwada Formation

Pliocene

***Cassidulina imamurai* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 389, Pl. 42, figs. 2a, b.

Holotype: IGMSH coll. (not numbered).

Boring well at Nishitakasaki, Nadazaki-machi, Kojima-gun, Okayama Pref., Japan

Upper Bihoku Group (110.8 m in depth)

Miocene

***Cassidulina izuensis* Aoki, 1967**

Prof. H. Shibata Mem. Vol., 381, Pl. 1, figs. 17 18.

Holotype: Dept. Found. Eng., Saitama Univ., Paleont. (not

numbered).

Nabeta Cove, Shimoda City, Shizuoka Pref. (Izu Peninsula), Japan

Water depth: 1-4 m

Recent

***Cassidulina japonica* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 144, Pl. 13, figs. 1a-c.

Holotype: IGPS no. 21434A.

St. 5, Urashima-sho, Wakasa Bay, Japan Sea

Water depth: 198 m

Recent

***Cassidulina japonica* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 144, Pl. 13, figs. 2a-c, Text-figs. 2a, b.

Paratypes: IGPS no. 21434B & C.

Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan

Sawane Formation

Pliocene

***Cassidulina kasiwazakiensis* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 399, Pl. 34, figs. 13a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamita, Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan (37 °21.0'N, 138 °34.4'E)

Haizume Formation

Pliocene

***Cassidulina kattoi* Takayanagi *obesa* Aoki, 1960**

In Iwabuchi et al., Hydrographic Office of Japan, Mar. Res. Lab., Contr., v. 2, no. 2, 101, Pl. 1, nos. 11, 12.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52039, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52040 (Pl. 1, nos. 13, 14).

Piston core from Nakanose, off Yokohama City, Tokyo Bay

Layer No. 31 (300-310 cm in depth); paratype: Layer No. 9 (80-90 cm)

Holocene

***Cassidulina kattoi* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 34, Pl. 4, figs. 10a, b.

Holotype: IGPS no. 67144.

Road cut of Tonohara, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33 °26'43"N, 133 °58'20"E)

Ananai Formation

Pliocene

***Cassidulina kazusaensis* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 146, Pl. 14, figs.

2a, b, text-figs. 7a, b.

Holotype: IGPS no. 21438A.

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35 °14.8'N, 140 °15.2'E)

Kiwada Formation

Pliocene (Early Pleistocene)

***Cassidulina kazusaensis* Asano & Nakamura, 1937**

Hasegawa and Nomura, 1995, 92, Figs. 3-2, 3-3.

Paratypes: IGPS no. 21438B, C.

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35 °14.8'N, 140 °15.2'E)

Kiwada Formation

Pliocene

***Cassidulina lobatula* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 126, Pl. 10, fig. 5.

Holotype: IGPS no. 98163, Paratype: IGPS no. 98164 (Pl. 10, fig. 4).

Sample KUM07, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Cassidulina nakamurai* Uchio, 1950**

Japanese Assoc. Petroleum Technol., Jour., v. 15, no. 4, 190, Fig. 14.

Holotype: UMUT CF 3004.

Loc. no. II-218, southern entrance of Odoro Tunnel, Kamitaki-mura (Odoro, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Umegase Formation (uppermost part)

Late Pliocene

***Cassidulina nojimana* Kuwano, 1954**

Res. Inst. Nat. Resour., Misc., Rep., no. 34, 79, Figs. 2, 3.

Holotype: Res. Inst. Nat. Resour., YK-H0001.

A cliff immediately S of the Kanazawa-Hakkei Station, Mutsuura-machi, Kanazawa-ku, Yokohama City, Kanazawa Pref., Japan

Nojima Formation

Pliocene

***Cassidulina okawaensis* Yoshida, 1958**

Hokkaido Gakugei Univ., Jour., v. 9, no. 1, 270, Pl. 4, figs. 2a-c.

Holotype: Kushiro Branch, Hokkaido Gakugei Univ. 48103.

Loc. no. 2701, Ainuzawa, Okawa, Toyokoro-cho, Nakagawa-gun, Tokachi Prov., Hokkaido, Japan

Okawa Formation

Miocene

(*Cassidulina okawaensis* in the original description.)

***Cassidulina oshimai* Aoki, 1967**

Prof. H. Shibata Mem. Vol., 381, Pl. 1, figs. 14, 15.
 Holotype: Dept. Found. Eng., Saitama Univ., Paleont. (not numbered), Paratype: (Pl. 1, figs. 11-13).
 Nabeta Cove, Shimoda City, Shizuoka Pref. (Izu Peninsula), Japan
 Water depth: 1-4 m
 Recent

***Cassidulina paratortuosa* Kuwano, 1954**

Res. Inst. Nat. Resour., Misc., Rep., no. 35, 34, Figs. 4-6.
 Holotype: Res. Inst. Nat. Resour., YK-H0004.
 Road-side cutting at Arakiyatsu, Tenjinyama-mura, Kimitsu-gun (Arakiyatsu, Iriyamazu, Futtsu City), Chiba Pref. (Boso Peninsula), Japan
 Tomiya tuffaceous sandstone (Tomiya Formation)
 Pliocene

***Cassidulina sagamiensis* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 147, Pl. 14, figs. 5a-c.
 Holotype: IGPS no. 21439.
 300 m NW of Kamimiyata, Minamishitaura-mura, Miura-gun (Kamimiyata, Minamishitaura-machi, Miura City), Kanagawa Pref., Japan (35 °10.7'N, 139 °39.5'E)
 Hatsuse Formation
 Pliocene

***Cassidulina setanaensis* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 146, Pl. 13, figs. 7a, b.
 Holotype: IGPS no. 21437A.
 200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °21.0'N, 139 °55.8'E)
 Setana beds (Setana Formation)
 Pliocene

***Cassidulina subglobosa* Brady *depressa* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 148, Pl. 13, figs. 8a-c.
 Holotype: IGPS no. 21441.
 Sematashinden, Ichito-mura, Ichihara-gun (Semata, Ichihara City), Chiba Pref., Japan (35 °31.8'N, 140 °12.5'E)
 Semata Formation
 Pliocene

***Cassidulina subglobosa* Brady *parva* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 148, Pl. 13, figs. 5a, b.
 Holotype: IGPS no. 21140.
 Nojima, Kanazawa-machi (Nojima-machi, Kanazawa-ku),

Yokohama City, Kanagawa Pref., Japan (35 °19.5'N, 139 °39.2'E)
 Kanazawa Formation
 Pliocene

***Cassidulina sublimbata* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 146, Pl. 14, fig. 3.
 Holotype: IGPS no. 21436A.
 A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)
 Sawane Formation
 Pliocene

***Cassidulina sublimbata* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 146, Pl. 14, figs. 4a, b.
 Paratype: IGPS no. 21436B.
 St.150, 200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °21.0'N, 139 °55.8'E)
 Setana beds (Setana Formation)
 Pliocene

***Cassidulina tomiyensis* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 40, Pl. 3, figs. 3a, b.
 Holotype: UMUT CF 3011.
 Loc. 11, 1000 m WSW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan
 Tomiya tuffaceous sandstone (Tomiya Formation)
 Late Pliocene
 (Given as *Cassidulina tomiyaensis* in the plate explanation.)

***Cassidulina undata* Kuwano, 1954**

Res. Inst. Nat. Resour., Misc., Rep., no. 34, 80, Figs. 3, 4.
 Holotype: Res. Inst. Nat. Resour., YK-H0002.
 Road-side cutting at Arakiyatsu, Tenjinyama-mura, Kimitsu-gun (Arakiyatsu, Iriyamazu, Futtsu City), Chiba Pref. (Boso Peninsula), Japan
 Tomiya tuffaceous sandstone (Tomiya Formation)
 Pliocene

***Cassidulina wakasaensis* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 149, Pl. 14, figs. 7a-c.
 Holotype: IGPS no. 21442A.
 St.8, Urashima-sho, Wakasa Bay, Japan Sea (35 °35.0'N, 135 °30.0'E)
 Water depth: 190 m
 Recent

***Cassidulina yabei* Asano & Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 2-3., 145, Pl. 14, figs. 1a, b.

Holotype: IGPS no. 21435A.

A cliff of Toshibetsu river, ca.800 m W of Omagari, Toshibetsu-mura (Omagari, Imakane-cho), Setana-gun, Hokkaido, Japan (42°26.7'N, 140°10.7'E)

Setana beds (Setana Formation)

Pliocene

***Cassidulina yabei* Asano & Nakamura, 1937**

Hasegawa and Nomura, 1995, 96, Figs. 2-4a-c.

Paratype: IGPS no. 21435B.

A cliff of Toshibetsu river, ca.800 m W of Omagari, Toshibetsu-mura (Omagari, Imakane-cho), Setana-gun, Hokkaido, Japan (42°26.7'N, 140°10.7'E)

Setana beds (Setana Formation)

Pliocene

***Cassidulina yubariensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 126, Pl. 10, fig. 6.

Holotype: IGPS no. 98165, Paratype: IGPS no. 98166 (Pl. 10, fig. 7).

Sample SRR12, Shirirruomappu River, Tomino, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Cassidulinoides akitaensis* Nomura, 1999**

Palaeont. Soc. Japan, Spec. Pap., no. 38, 46, Figs. 33-3a-c.

Holotype: NFL 9540, Paratypes: NFL 9541 (Figs. 33-4a-5c).

FUNA-11, river side cliff of the Sannai-gawa River, Sannai, Kawabe-machi, Kawabe-gun, Akita Pref., Japan (39°42.8'N, 140°17.8'E)

Funakawa Formation (fossiliferous siltstone)

Late Miocene

***Cassidulinoides kuwanoi* Matoba, 1967**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 38, no. 2, 253, Pl. 29, figs. 1a, b.

Holotype: IGPS no. 87579A, Paratype: IGPS no. 87579B (Pl. 29, fig. 2).

A road-side outcrop, Miyake-cho, Choshi City, Ciba Pref., Japan

Iioka Formation (middle part)

Early Pleistocene

***Cassidulinoides miuraensis* Higuchi, 1956**

Geol. Soc. Japan, Jour., v. 62, no. 725, 58, Figs. 7-1a, b, 2a, b.

Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Shiba-machi, Kanazawa-ku, Yokohama City, Kanagawa Pref., Japan

Koshiha Formation

Pliocene

***Cassidulinoides sasaokaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 114, Pl. 49, figs. 5a, b.

Holotype: IGPS no. 85357.

Sasaoka-mura, Kitakanbara-gun, Niigata Pref., Japan

Ushigakubi Formation

Late Miocene or Early Pliocene

***Cassidulinoides subcylindricus* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 51, Pl. 1, figs. 4a-c.

Holotype: IGPS no. 97182A, Paratype: IGPS no. 97182B (unfigured).

AR-6, river-side outcrop of Kuwatori River, Joetsu City, Niigata Pref., Japan (39°05'56"N, 138°09'05"E)

Tanihama Formation

Pleistocene

***Cassidulinoides yamagaensis* Asano & Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 83, Pl. 1, figs. 9, 10, 13.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2008.

A road cut at Orio, Yahata-ku, Kitakyushu City, Fukuoka Pref., Japan (33°52'30"N, 130°42'10"E)

Yamaga Formation

Early Miocene

***Ceratobulimina asanoi* Murata, 1959**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 5, 45, Pl. 2, figs. 18a-c.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 10.

Loc. no. OM SM-NI-11, Nishiwatauchi Well in the Oshima Island, Nagasaki Pref., Japan

Okuura Formation

Oligocene

***Ceratobulimina hanzawai* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 428, Fig. 2, nos. 23-25.

Holotype: IGPS no. 67046, Paratype: (Fig. 2, nos. 26, 27).

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36°51.0'N, 140°47.0'E)

Kokozura Formation

Middle Miocene

***Chilostomella amakusaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 67, Pl. 11, figs. 12a-c.

Holotype: IGPS no. 77211.

About 1 km NE of Sakasegawa-mura (Sakasegawa, Reihoku-cho), Amakusa-gun, Kumamoto Pref. (Shimojima,

Amakusa Islands), Japan (32°31.8'N, 130°06.0'E)
Sakasegawa Formation (middle part)
Eocene

***Chilostomelloides yokichii* Yasuda, 1986**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 52, no. 1, 90, Pl. 13, figs. 6a, b.
Holotype: IGPS no. 98796, Paratypes: IGPS no. 98795 & 98794 (Pl. 13, figs. 4, 5a, b).
Along the Kumanosawa River, about 400 m upstream from where it joins the Tombetsu River, northern Hokkaido, Japan
Utsunaigawa Formation, Hakobuchi Group
Paleocene

***Chrysalidinooides pacificus* Uchio, 1952**

Japanese Jour. Geol. Geogr., v. 22, 154, Pl. 7, figs. 6a-c.
Holotype: Geol. Inst., Fac. Sci., Univ. Tokyo, UMUT CF 3036.
Beach at Yaene, Ogago-mura (Ookagou, Hachijo-machi), Hachijo Island, ca. 300 km S of Tokyo, Japan (33°05'N, 139°48'E)
Water depth: 0 m
Recent

***Cibicides asanoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 116, Pl. 51, figs. 4a-c.
Holotype: IGPS no. 85376.
132.0 m in depth of Sakamachi R-2 Well of Teikoku Oil Company, Honai-mura (Arakawa-machi), Iwafune-gun, Niigata Pref., Japan
Ushigakubi Formation
Late Miocene or Lower Pliocene

***Cibicides biconvexus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 124, Pl. 9, figs. 7a-c.
Holotype: IGPS no. 98130.
Sample KUM44, Kumanosawa, Yubari City, Hokkaido, Japan
Poronai Formation
Late Eocene - Oligocene

***Cibicides chichibuensis* Ujiie, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 86, Pl. 2, figs. 23a-c.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50214,
Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50215 (Pl. 2, fig. 22).
Loc. E, Oobuchi, Minano-machi, Chichibu-gun, Saitama Pref., Japan
Nenokami Formation
Early Miocene

***Cibicides complanatus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 124, Pl. 9, figs. 8a-c.

Holotype: IGPS no. 98131.

Sample UTN02, Utsunai River, NW of Nakatombetsu, (Hamatombetsu-cho), Hokkaido, Japan
Utsunai Formation
Late Eocene - Oligocene

***Cibicides cushmani* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 769, Pl. 3, fig. 1.
Holotype: NSMP1 7248.
Station 503, the mouth of Miyako Bay, Iwate Pref., Japan
Water depth: 37 m
Recent

***Cibicides cushmani* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 769, Pl. 3, figs. 2, 3; Pl. 4, fig. 1-3; Pl. 5, fig. 3.
Paratypes: NSMP1 7249, 7250, 7255-7257.
Station 618, the mouth of Miyako Bay, Iwate Pref., Japan
Recent

***Cibicides datensis* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 511, Pl. 10, figs. 11-15.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50112.
Loc. no. NA-3, cliff at the northern bank of the Nametsu River, Kawamae, Tomino-mura, Date-gun, Fukushima Pref., Japan
Yanagawa Member, Date Formation
Miocene

***Cibicides dogoensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 390, Pl. 43, figs. 2a-c.
Holotype: IGMSH coll. (not numbered).
Road side cutting at Tsuma, Tsuma-mura, Suki-gun, Dogo, Oki Islands, Shimane Pref., Japan
Dogo Formation
Miocene

***Cibicides inagawaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 116, Pl. 51, figs. 5a-c.
Holotype: IGPS no. 85377.
Inagawa, Nishigoshi-mura (Inagawa, Izumozaki-machi), Santo-gun, Niigata Pref., Japan
Haizume Formation
Pliocene

***Cibicides isazawensis* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 512, Pl. 10, figs. 16a-c.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50113.
Road cutting at Ubagafutokoro, Ooeda-mura, Date-gun, Fukushima Pref., Japan
Date Formation
Miocene

***Cibicides kamadai* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 13, 17, Figs. 33-35.

Holotype: IGPS no. 67120.

500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun (Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan (37° 00.5'N, 140° 51.3'E)

Asagai Formation

Oligocene

***Cibicides malloryi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 116, Pl. 51, figs. 7, 8.

Holotype: IGPS no. 77259.

A core at depth of 425.0 m in Sakamachi R-1 Well of Teikoku Oil Company, Honai-mura (Arakawa-machi), Iwafune-gun, Niigata Pref., Japan

Nanatani Formation

Miocene

***Cibicides nagaioi* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 59, Pl. 9, figs. 7a-c.

Holotype: IGPS no. 77193, Paratype: (Pl. 9, figs. 6a-c).

IGPS loc. no. Ns-3 (Takashima Coal-field), Okinoshima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32° 41.5'N, 129° 46.8'E)

Okinoshima Formation

Eocene

***Cibicides (?) omurai* Asano & Inomata, 1952**

Illust. Cat. Japan. Small. Foram., suple. 1, 17, Figs. 97-99.

Holotype: IGPS no. 75254.

Kirikudashi, Kawaguchi-mura (Araya, Kawaguchi-machi), Kitaonuma-gun, Niigata Pref., Japan (37° 18.0'N, 138° 51.2'E)

Araya Formation

Miocene

***Cibicides shukuensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 390, Pl. 43, figs. 3a-c.

Holotype: IGMSH coll. (not numbered).

Cutting cliff at Shuku, Hiyoshi-mura, Toki-gun (Shuku, Hiyoshi-machi, Mizunami City), Gifu Pref., Japan

Oidawara Formation

Miocene

***Cibicides sintikuensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 142, Pl. 12, figs. 9a-c.

Holotype: IGPS no. 60880.

Syomon, Sinpo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)

Upper Byoritu beds

Tertiary

***Cibicides tani* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 193, Text-figs. 8a-c.

Holotype: IGPS no. 65523.

Southern cliff of the Ukibuta Primary School, Ukibuta, Yazawagi-mura, Hiraga-gun (Yasawagi, Oomori-machi, Hiraka-gun), Akita Pref., Japan

Sugota Formation

Middle Miocene

***Cibicides yabei* Asano, 1952**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 43, Pl. 4, figs. 1a-c.

Holotype: IGPS no. 74795.

IGPS loc. no. So-1, Ikushunbetsu, Mikasayama-mura, Sorachi Prov. (Ikushunbetsu, Mikasa City), Hokkaido, Japan (43° 15.3'N, 141° 58.0'E)

Poronai shale (Poronai Formation)

Oligocene

***Cibicides yoitaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 117, Pl. 52, figs. 3a-c.

Holotype: IGPS no. 85381.

A core at depth of 920 m in Yoita R-2 Well of Teikoku Oil Company, Yoita-machi, Santo-gun, Niigata Pref., Japan

Nanatani Formation

Miocene

***Cibicoides jamburoensis* Nomura & Brohi, 1995**

Marine Micropaleontol., vol. 24, Pl. 3.

Holotype: DESS 9201.

PAK-16, Gaji River, southern Balochistan, Pakistan

Jamburo Group

Maastrichtian-Paleogene

***Clavulina tokaiensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 326, Pl. 36, fig. 3.

Holotype: IGPS no. 21332, Paratype: (Pl. 36, fig. 4).

Hosoya, Haranotani-mura, Ogasa-gun (Hosoya, Kakegawa City), Shizuoka Pref., Japan (34° 47.8'N, 137° 57.2'E)

Hosoya Formation, Kakegawa Group

Pliocene

***Clavulina tosaensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 944, Pl. 52(18), fig. 2.

Holotype: IGPS no. 21391A, Paratype: (Pl. 52(18), fig. 3).

Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33° 26.7'N, 133° 58.4'E)

Konomine Formation

Pliocene

***Clavulina yabei* Asano akiensis Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 944, Pl. 52(18), fig. 5.

Holotype: IGPS no. 21390A, Paratype: (Pl. 52(18), fig. 4).
Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref.,
Japan (33 °26.7'N, 133 °58.4'E)
Konomine Formation
Pliocene

***Clavulina yabei* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 612, Pl. 30, fig. 2.
Holotype: IGPS no. 21364A, Paratypes: IGPS no. 21364C, D
(Pl. 30, figs. 3, 4).
Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref.,
Japan (35 °20.2'N, 139 °30.2'E)
Tomioka beds (Tomioka Formation)
Pliocene

***Cornuspira tasmanensis* Kawagata, 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B (Geol. Sci.), v. 20,
12, Fig. 3-3a, b.
Holotype: IGUT 13612.
Gravity core NGC100, at the depth 1299 m, from Lord Howe
Rise in the Tasman Sea, SW Pacific (25 °16.23'S, 162 °00.04'E)
20 cm below sea-floor (sample NGC100-5-20)
Late Quaternary

***Cornuspiroides oinomikadoi* Hanzawa & Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 9, 1, Fig. 2.
Holotype: IGPS no. 66141, Paratype: IGPS no. 74796 (Pl. 5, fig.
12).
Ku-1, a cliff at entrance of Busa-zawa (Musa-zawa), Kushiro
City, Hokkaido, Japan (42 °59.2'N, 144 °25.5'E)
Shitakara Formation
Oligocene

***Cornuspiroides yabei* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 9, 2, Figs. 3, 4 .
Holotype: IGPS no. 66142.
600 m NE of shrine at Ono, Tano-cho, Aki-gun, Kochi Pref.,
Japan (33 °26.0'N, 134 °E.0'E)
Konomine Formation
Pliocene

***Coronaplanulina okinawaensis* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 36, Pl. 17, figs. 6a-c.
Holotype: NSM, Micropal. Coll. (not numbered), Paratype:
(Text-figs. 2a, b).
Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan
(24 °45'N, 127 °01'E)
141-143 cm below sea-floor
Late Pleistocene to Holocene

***Criboelphidium aomoriense* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 11, Figs. 60, 61 .
Holotype: IGPS no. 66185.
Kuniyoshi, Higashimeya-mura, Nakatsugaru-gun (Kuniyoshi,

Hirosaki City), Aomori Pref., Japan (40 °35.1'N, 141 °20.2'E)
Higashimeya Formation
Pliocene

***Criboelphidium asakense* Fujita, 1956**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and
Geogr.), vol. 4, no. 35, 233, Pl. 8, figs. 7a, b.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50103.
Kozu, Kozu-mura, Asaka-gun (Kouzu, Ouse-machi,
Koriyama-City), Fukushima Pref., Japan
(37 °25'3"N, 140 °16'16.8"E)
Kubota Formation
Pliocene

***Criboelphidium cribojenseni* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 108, Pl.
35, figs. 11a, b.
Holotype: IGPS no. 85182.
A core at depth of 509.0 m in Yahiko R-1 Well of Teikoku Oil
Company, Yahiko-mura, Nishikanbara-gun, Niigata Pref., Japan
Shiia Formation
Miocene

***Criboelphidium imanishii* Asano, 1953**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 10, 52, Figs. 11a,
b.
Holotype: IGPS no. 75287.
Sugiharadai, 2.6 km W of Sopuchi, Shintotsugawa-mura
(Sopuchi, Shintotsukawa-cho), Kabato-gun, Hokkaido, Japan
(43 °32.8'N, 141 °50.0'E)
Chashiparomanai Formation
Late Miocene

***Criboelphidium kannonjiense* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 108, Pl.
35, figs. 12a, b.
Holotype: IGPS no. 85184.
Kannonji-mura, Akumi-gun, Yamagata Pref., Japan
Kannonji Formation
Pliocene

***Criboelphidium nishiyamaense* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, Pl. 35,
figs. 13a, b.
Holotype: IGPS no. 85185.
Nishiyama-mura (Nishiyama-machi), Kariwa-gun, Niigata Pref.,
Japan
Haizume Formation
Pliocene

***Criboelphidium okinawaense* Ujiie & Rifardi, 1993**

Bull. Coll. Sci., Univ. Ryukyus, No. 56, 125, figs. 2a, b.
Holotype: NSM, Micropal. Coll. (not numbered), Paratypes: (Pl.
6, figs. 3a-7).

St. 6, Oura River estuary, Nago City, Okinawa Pref. (Okinawa Island), Japan
Water depth: shallower than 1 m
Recent

***Criboelphidium pacificum* Ujiie, 1956**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), v. 4, no. 38, 273, Pl. 14, figs. 9-14.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50003.
Ubara coast, Katsuura City, Chiba Pref. (Boso Peninsula), Japan (35°8'39.2"N, 140°16'38.4"E)
Beach sand
Recent

***Criboelphidium tomitai* Tai, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 720, 419, Text-figs. 2a, b.
Holotype: IGSH coll. cat. no. T.Y. 4.
Southern cliff of Shinji Lake, Fujina, Tamayu-mura (Fujina, Tamayu-cho), Yatsuka-gun, Shimane Pref., Japan (35°26'20"N, 133°2'34"E)
Lower Fujina Member
Miocene

***Cribrononion miyakoense* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 766, Pl. 1, figs. 3, 4.
Holotype: NSMP1 7242, Paratypes: NSMP1 7243, 7253 & 7254 (Pl. 1, figs. 5-7).
Station 609, off the mouth of the Hei-gawa River in Miyako Bay, Iwate Pref., Japan
Water depth: 10 m
Recent

***Cribrononion multicameratum* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 96, Pl. 19, fig. 1.
Holotype: NSM, Micropal. Coll. 973, Paratype: NSM, Micropal. Coll. 974, 975, 1037 & 1038 (Pl. 19, fig. 2, 3; Pl. 20, figs. 4, 5).
Along the Labuk Road, southern coast of Sandakan Peninsula, North Boreno, Malaysia
Sandakan Formation
Middle Miocene

***Crirostomoides kyushuense* Asano, 1950**

Cushman Found. Foram. Res., Contr., v. 1, pts. 3-4, 77, Pl. 12, figs. 1a-c.
Holotype: IGPS no. 66194.
IGPS loc. no. My-1, Nanao, Takaoka-machi, Higashi-Morogata-gun, Miyazaki Pref., Japan (31°50.0'N, 132°17.0'E)
Tsuma Formation
Miocene

***Crirostomoides satsumaensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 73, Pl. 2, fig. 2a.
Holotype: ESK F-7309, Paratype: ESK F-7010 (Pl. 2, fig. 2b).

St. 86, central part of Kagoshima Bay, Kagoshima Pref., Japan (31°24.1'N, 130°40.2'E)
Water depth: 165 m
Recent

***Cruciloculina japonica* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 480, figs. 10a, b.
Holotype: IGPS no. 67015, Paratype: Inst. Geol. Paleont., Tohoku Univ. (Pl. 80, figs. 1-2, 6).
A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37°59.8'N, 138°16.7'E)
Sawane Formation (lower part)
Pliocene

***Cruciloculina japonica* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 480, Pl. 80, figs. 7a-9, 11-13.
Paratypes: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
A cliff of Toshibetsu river, ca.800 m W of Omagari, Toshibetsu-mura (Omagari, Imakane-cho), Setana-gun, Hokkaido, Japan
Setana Formation
Pliocene

***Cyclammina amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 12, Text-figs. 3a, b, Pl. 3, fig. 9.
Holotype: UMUT CF 58041, Paratype: UMUT CF 58042 (Pl. 3, fig. 10).
Torigoe, Kawaura-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°21'20"N, 130°8'3"E)
Kyoragi beds (about 50 m. below the top of the Kyoragi beds), Hondo Group
Middle Eocene

***Cyclammina amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 12, Pl. 3, figs. 8, 10.
Paratype: UMUT CF 58040.
Take, Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°29'39"N, 130°6'21"E)
Kyoragi beds (about 50 m. below the top of the Kyoragi beds), Hondo Group
Middle Eocene

***Cyclammina complanata* Yabe & Hanzawa, 1930**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 14, no. 1, 46, Text-fig. 1.
Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Mikairibashi, Chikuto-gun, Shinchiku Pref., Taiwan
Kaizan Group
Early Miocene
(*nom. nud.* owing to junior synonym, and new name has been given as *Cyclammina formosensis* by Yabe & Hanzawa, 1935)

***Cyclammina ezoensis* Asano okuharai Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 382, Pl. 40, figs. 1a-c.

Holotype: IGMSH coll. (not numbered).

Road side cutting at Kuchitagi, Taki-mura, Hinokawa-gun (Kuchitagi, Taki-cho, Hikawa-gun), Shimane Pref., Japan

Omori Formation

Miocene

***Cyclammina ezoensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 10, 5, Figs. 16, 17.

Holotype: IGPS no. 67075.

IGPS loc. no. Ki-1, Chishiya, Soya-gun, Kitami Prov. (Chishiya, Wakkanai City), Hokkaido, Japan (45 °30.0'N, 141 °58.0'E)

Masuporo Formation

Miocene

***Cyclammina formosensis* Yabe & Hanzawa, 1935**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 18, no. 1, 13.

Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Mikairibashi, Chikuto-gun, Shinchiku Pref., Taiwan

Kaizan Group

Early Miocene

(New name for *Cyclammina complanata* Yabe & Hanzawa, 1930.)

***Cyclammina japonica* Asano kaiensis Fukuta & Shinoki, 1952**

Geol. Soc. Japan, Jour., v. 58, no. 681, 202, Pl. 6, figs. 1-4.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 20831.

Higashi, Shimada-mura, Kitatsuru-gun, Yamanashi Pref., Japan

Shimada Formation

Middle Miocene

***Cyclammina japonica* Asano, 1950**

Cushman Found. Foram. Res., Contr., v. 1, pts. 3-4, 78, Pl. 11, figs. 3a, b.

Holotype: IGPS no. 66193, Paratype: (Pl. 11, figs. 4-8).

IGPS loc. no. Ni-19, Kawaya, Minamoto-mura (Kawadani, Yoshikawa-machi), Naka-kubiki-gun, Niigata Pref., Japan (37 °12.0'N, 138 °31.0'E)

Shiia Formation

Miocene

***Darbyella karatsuensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 55, Pl. 8, figs. 6a-c.

Holotype: IGPS no. 77188.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Darbyella tosaensis* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 29, Pl. 4, figs. 5a-c.

Holotype: IGPS no. 67138.

Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33 °26'43"N, 133 °58'20"E)

Ananai Formation

Pliocene

***Dentalina minuta* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 117, Pl. 7, fig. 13.

Holotype: IGPS no. 98052, Paratype: IGPS no. 98053 (Pl. 7, fig. 12).

Sample KUM14, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Dentalina mutsui* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 97, Text-fig. 50.

Holotype: (unknown)

Mutsu Bay, Aomori Pref., Japan

Recent

***Dentalina nakamurai* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 214, Pl. 27(4), fig. 54.

Holotype: IGPS no. 21481, Paratype: (Pl. 27(4), fig. 55).

Road cutting at Nishinotani, Hongo, Seya-ku, Yokohama City, Kanagawa Pref., Japan (35 °22.7'N, 139 °33.2'E)

Naganuma Formation (Koshiha Formation)

Pliocene

***Dentalina setanaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 215, Pl. 30(7), fig. 9.

Holotype: IGPS no. 21482, Paratype: (Pl. 30(7), fig. 10).

2 km SW of Minami-kanehara, Toshibetsu-mura (Minami-kanehara, Imakane-cho), Setana-gun, Hokkaido, Japan (42 °22.0'N, 139 °58.7'E)

Setana Formation

Pliocene

***Dentalina setanaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 215, Pl. 30(7), figs. 30, 31.

Paratypes: (not numbered) (Pl. 30(7), figs. 30-32)

Shimotaka-machi (Kariwa-mura, Kariwa-gun), Niigata Pref., Japan

Natukawa limestone

Pliocene

***Dentalina siribesiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 215, Pl. 30(7), fig. 15.

Holotype: IGPS no. 21483, Paratype: (Pl. 30(7), fig. 16).

Loc. Kuromatsunai-d (Loc. 382), 800 m SW of Nakanokawa, Kuromatsunai-mura (Nakanokawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °41.3'N, 140 °16.3'E)

Setana Formation

Pliocene

***Dentalina yabei* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 329, Pl. 36, fig. 12.

Holotype: IGPS no. 21380A, Paratype: (Pl. 36, figs. 10-11).

Kechienji, Nango-mura, Ogasa-gun (Kechienji, Kakegawa City), Shizuoka Pref., Japan (34 °46.0'N, 138 °01.4'E)

Kechienji Formation, Kakegawa Group

Late Pliocene

***Discanomalina japonica* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 13, 13, Figs. 3-5.

Holotype: IGPS no. 67129.

A road-side cutting at Nojimaura, Kanazawa-machi (Nojima-machi, Kanazawa-ku), Yokohama City, Kanagawa Pref., Japan (35 °19.5'N, 139 °39.2'E)

Nojima Formation

Pliocene

***Discanomalina kuwanoi* Aoki, 1967**

Prof. H. Shibata Mem. Vol., 381, Pl. 1, figs. 23, 24.

Holotype: Dept. Found. Eng., Saitama Univ., Paleont. (not numbered).

Sample 3400, off Shiwo-no-misaki, Kii Peninsula, Wakayama Pref., Japan

Water depth: ca. 40 m

Recent

***Discopulvinulina hofkeri* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 5, Figs. 30, 31 .

Holotype: IGPS no. 67172.

A sea-cliff at Hamada, Tanabu-machi, Shimokita-gun (Hamada, Yokohama-machi, Kamikita-gun), Aomori Pref., Japan (41 °08.0'N, 141 °16.6'E)

Hamada Formation

Pliocene

***Discopulvinulina nagaoui* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 5, Figs. 35-37.

Holotype: IGPS no. 67174.

200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °24.0'N, 139 °55.8'E)

Setana Formation

Pliocene

***Discopulvinulina stachi* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 7, Figs. 46-48.

Holotype: IGPS no. 67177.

Tatekoyokomizu, Tanabu-machi, Shimokita-gun (Tatekoyokomizu, Mutsu City), Aomori Pref., Japan (41 °14.5'N, 141 °15.9'E)

Hamada Formation

Pliocene

***Discorbinooides minogasaformis* Ujiie, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 185, Pl. 34, Figs. 3a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 34, figs. 2a-c).

Loc. 35, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 23 m

Recent

***Discorbis conica* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 510, Pl. 10, figs. 23a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50109.

Loc. no. OT. 3, in the canal at Hosoya, Oota-mura (Hosoya, Yanagawa-machi), Date-gun, Fukushima Pref., Japan

Date Formation

Miocene

***Discorbis nakamurai* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 2, Figs. 8-10.

Holotype: IGPS no. 67164.

500 m NE of Shimomiyata, Hatsuse-mura, Miura-gun (Shimomiyata, Hatsuse-machi, Miura City), Kanagawa Pref., Japan (35 °10.7'N, 139 °38.6'E)

Hatsuse Formation

Pliocene

***Discorbis nipponica* Husezima & Maruhasi, 1944**

Res. Inst. Natur. Resour., Jour., v. 1, no. 3, 397, Pl. 34, figs. 9a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Boring No.4 at Kamitajiri, Takiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan (37 °21.5'N, 138 °35.5'E)

Haizume Formation (upper part) (a core at depth 120-123 m)

Pliocene

***Discorbis ozawai* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 3, Figs. 14-16.

Holotype: IGPS no. 67163.

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Discorbis pulvinatus* (Brady) var. *makinoi* Uchio, 1952**

Japanese Jour. Geol. Geogr., v. 22, 155, Pl. 7, fig. 5.

Holotype: UMUT CF 3035.

Yaene, Ogano-mura (Ookagou, Hachijo-machi), Hachijo Island, Tokyo, Japan (36 °32.0'N, 139 °44.2'E)

Beach sand

Recent

***Discorbis subopercularis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 3, Figs. 17-19.

Holotype: IGPS no. 67167.

Okunai, Tanabu-machi, Shimokita-gun (Okunai, Mutsu City), Aomori Pref., Japan (41 °12.4'N, 141 °17.3'E)

Hamada Formation

Pliocene

***Discorbis yanagawensis* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 511, Pl. 10, figs. 19, 20.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50110.

Loc. no. OT. 1, in the canal at Hosoya, Oota-mura (Hosoya, Yanagawa-machi), Date-gun, Fukushima Pref., Japan

Date Formation

***Discotruncana japonica* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10, no. 3, 539, Pl. 1, figs. 6a-c.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. no. 13561.

Soibetsu-gawa, Kuromatsunai-machi (Soibetsugawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Dorothia amakusaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 61, fig. 3.

Holotype: IGPS no. 77201, Paratype: (Pl. 11, fig. 4).

No. K, Oshima, Oninoike-mura (Oshima, Itsuwa-machi), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °32.3'N, 130 °11.0'E)

Sakasegawa Formation (upper part)

Eocene

***Dorothia ashiyaensis* Murata, 1953**

Kyushu Inst. Technol., Bull., no. 3, 6, Pl. 1, figs. 3a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. MO-3, Asakawa, Wakamatsu City (Wakamatsu-ku, Kitakyushu City), Fukuoka Pref., Japan (33 °52'20.4"N, 130 °42'17.8"E)

Yamaga Formation (middle part; 30 m below the top), Ashiya Group

Late Oligocene

***Dorothia nagaoui* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 64, Pl. 11, figs. 9a, b.

Holotype: IGPS no. 77202.

No. K, Oshima, Oninoike-mura (Oshima, Itsuwa-mura), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °32.3'N, 130 °11.0'E)

Sakasegawa Formation (upper part)

Eocene

***Dorothia sakasegawaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 64, Pl. 10, figs. 11a, b.

Holotype: IGPS no. 77203, Paratype: (Pl. 10, figs. 12a, b).

About 1 km NE of Sakasegawa-mura (Sakasegawa, Reihoku-cho), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °31.8'N, 130 °06.0'E)

Sakasegawa Formation (middle part)

Eocene

***Dyofrondicularia nipponica* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 330, Pl. 37, figs. 2a, b.

Holotype: IGPS no. 21382.

200 m S of Kechienji, Nango-mura, Ogasa-gun (Kechienji, Kakegawa City), Shizuoka Pref., Japan (34 °46.0'N, 138 °01.4'E)

Kechienji Formation Kakegawa Group

Late Pliocene

***Echigoina furutsuensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 115, Pl. 50, figs. 3a, b.

Holotype: IGPS no. 85369.

A core at a depth of 682.8 m in Furutsu R-1 Well of Teikoku Oil Company, Furutsu-mura, Kitakanbara-gun, Niigata Pref., Japan Ushigakubi Formation

Late Miocene or Lower Pliocene

***Echigoina hataii* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 115, Pl. 50, figs. 4a, b.

Holotype: IGPS no. 85368.

Hashida, Niitsu City, Niigata Pref., Japan

Kogushi Formation

Late Miocene or Pliocene

***Eggerella amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 15, Pl. 4, fig. 12.

Holotype: UMUT CF 58057, Paratype: UMUT CF 58058 (Pl. 4, fig. 13).

Torigoe, Kawaura-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °21'20"N, 130 °8'3"E) Kyoragi beds (about 50 m. below the top of the Kyoragi beds), Hondo Group

Middle Eocene

***Eggerella amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 15, Pl. 5, fig. 1.

Paratype: UMUT CF 58059.

Tsuzurakawachi, Kawaura-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °21'0"N, 130 °34'1"E)

Kyoragi beds (about 50 m. below the top), Hondo Group
Middle Eocene

***Eggerella minuta* Oki, 1989**

South Pacific Study, v. 10, no. 1, 84, Pl. 4, fig. 6.

Holotype: ESK F-7797, Paratype: ESK F-7798 (unfigured).

St. 143, bay mouth of Kagoshima Bay, Kagoshima Pref., Japan (31 °8.5'N, 130 °41.0'E)

Water depth: 96 m

Recent

***Eggerella nishisonogiensis* Murata, 1959**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 5, 36, Pl. 1, figs. 9a-c.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 9.

Loc. no. OM SM-NI-11, Nishiwatauchi Well in the Oshima Island, Nagasaki Pref., Japan

Okuura Formation, Nishisonogi Group

Oligocene

***Eggerella takayanagii* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 116, Pl. 7, figs. 8a-c.

Holotype: IGPS no. 98036.

Sample UTN09, Utsunai River, NW of Nakatombetsu, (Hamatombetsu-cho), Hokkaido, Japan

Utsunai Formation

Late Eocene - Oligocene

***Ehrenbergina bosoensis* Takayanagi *decorata* Takayanagi, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 3, 89, Text-figs. 9a-c.

Holotype: IGPS no. 67131.

Road side cutting, about 1100 m NNW of Higashi-owada, Tamaki-mura, Kimitsu-gun (Higashi-owada, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °13.6'N, 139 °55.9'E)

Kokumoto Formation

Pliocene

***Ehrenbergina bosoensis* Takayanagi, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 3, 87, Text-figs. 8a-c.

Holotype: IGPS no. 67130.

South cliff of the Minato River, about 350 m N of Seki, Sekitoyo-mura, Kimitsu-gun (Seki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °12.3'N, 139 °56.8'E)

Kiwada Formation

Pliocene

***Ehrenbergina crassitrigona* Nomura, 1999**

Palaeont. Soc. Japan, Spec. Pap., no. 38, 57, Figs. 29-1a-c.

Holotype: NFL 9535, Paratype: NFL 9536 (Figs. 29-2a-3c).

ISW-16, Miyagi Pref. (cf. Oda and Sakai, 1977). (Probably IWS-16 of Oda and Sakai, 1977; Moniwa, Taihaku-ku, Sendai City Miyagi Pref., Japan)

Hatatate Formation

middle Middle Miocene

***Ehrenbergina crispata* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 93, Pl. 2, figs. 18a, b.

Holotype: IGPS no. 97252.

OK-1, outcrop, about 500 m N of Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'21"N, 127 °43'26"E)

Yonabaru Formation (middle part) (mudstone)

Early Pliocene

***Ehrenbergina notoensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 7, 6, Figs. 29, 30 .

Holotype: IGPS no. 66145.

Iw-14, Ishii, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 °22.4'N, 137 °06.7'E)

Kurikura Formation

Miocene

***Ellipsonodosaria hayasakai* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, nos. 242-243, 683, Figs. 2a, b.

Holotype: Taipei Imp. Univ. (not numbered).

600 m NE of shrine at Ono, Tano-cho, Aki-gun, Kochi Pref., Japan (33 °26.0'N, 134 °E.0'E)

Konomine Formation

Pliocene

***Ellipsonodosaria hyugaensis* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, nos. 242-243, 686, Figs. 12, 13 .

Holotype: Taipei Imp. Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 °08.5'N, 131 °31.1'E)

Koonji Formation

Pliocene

***Ellipsonodosaria japonica* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, nos. 242-243, 682, Figs. 14, 15 .

Holotype: Taipei Imp. Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 °

08.5°N, 131 °31.1°E)
Koonji Formation
Pliocene

***Ellipsonodosaria ketienziensis* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, nos. 242-243, 684, Figs. 1, 6, 11 .
Holotype: Taipei Imp. Univ. (not numbered).
Kechienji, Nango-mura, Ogasa-gun (Kechienji, Kakegawa City), Shizuoka Pref., Japan (34 °46.3'N, 138 °01.2'E)
Kechienji Formation
Pliocene

***Ellipsonodosaria oinomikadoi* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, nos. 242-243, 685, Figs. 7-10.
Holotype: Taipei Imp. Univ. (not numbered).
Hageno-shita, Uwae-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 °08.5'N, 131 °31.1'E)
Koonji Formation
Pliocene

***Ellipsonodosaria ugoensis* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 192, Text-figs. 5a, b.
Holotype: IGPS no. 65520.
Cliff, 300 m NE of Habiro, Kamikawa-Ouchi-mura (Habiro, Ouchi-machi), Yuri-gun, Akita Pref., Japan
Sugota Formation
Miocene

***Elphidiella momiyamensis* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 372, Pl. 5, figs. 7a, b.
Holotype: UMUT CF 3021.
Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan (36 °32.0'N, 139 °44.2'E)
Momiyama Formation
Miocene

***Elphidiella nagaoui* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 590, Pl. 14(3), figs. 8a, b.
Holotype: IGPS no. 21421.
Loc. Kuromatsunai-f (Loc. 370), Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °26.3'N, 140 °10.3'E)
Setana Formation
Pliocene

***Elphidiella tokyoensis* Aoki, 1960**

In Iwabuchi et al., Hydrographic Office of Japan, Mar. Res. Lab., Contr., v. 2, no. 2, 99, Pl. 1, nos. 1, 2.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52034,

Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52035 (unfigured).
Negishi, Asaka City, Saitama Pref., Japan
Tokumaru Shell Bed of the Tokyo Formation
Pleistocene

***Elphidiella tokyoensis* Aoki, 1960**

In Iwabuchi et al., Hydrographic Office of Japan, Mar. Res. Lab., Contr., v. 2, no. 2, 99, Pl. 1, nos., 3 4.
Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No.52036.
Piston core from Nakanose, off Yokohama City, Tokyo Bay, Japan
Layer No. 3 (20-30 cm in depth)
Holocene

***Elphidium abyssicola* Ishiwada, 1964**

Geol. Survey Japan, Rep., no.205, 38, Pl. 3, fig. 49.
Holotype: Geol. Surv. Japan F61176, Paratype: Geol. Surv. Japan F61177 & 61220 (Pl. 3, fig. 48; Text-figs.).
Off Shioya-saki, Fukushima Pref., Japan (36 °30'0"N, 141 ° 29'8")
Water depth: 1111 m
Recent

***Elphidium advena* (Cushman) gorokuense Takayanagi, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 2, 27, Fig. 4.
Holotype: IGPS no. 66105.
South cliff of the Hirose River, about 400 m SE of Goroku, Aoba-ku, Sendai City, Miyagi Pref., Japan (38 °15.3'N, 140 ° 49.6'E)
Tatsunokuchi Formation
Pliocene
(*Elphidium advenum gorokuense* in the original description.)

***Elphidium advena* (Cushman) miyatense Fujita, 1956**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), v. 4, no. 35, 231, Pl. 8, figs. 3a-c.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50101.
500 m NE of Shimomiyata, Hatsuse-mura, Miura-gun (Shimomiyata, Hatsuse-machi, Miura City), Kanagawa Pref., Japan (35 °10.7'N, 139 °38.6'E)
Pleistocene
Miyata Formation
(*Elphidium advenum miyatense* in the original description)

***Elphidium asagaiense* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 476, Fig. 2, no. 1a, b.
Holotype: IGPS no. 67034, Paratype: (Fig. 2, no. 2).
500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun (Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan (37 ° 00.5'N, 140 °51.3'E)
Asagai Formation
Oligocene

***Elphidium asanoi* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 124, Pl. 10, figs. 1a, b.

Holotype: IGPS no. 98157.

Sample PNK-7-852, Pankemaya-7 Well, E of Momijiyama, Yubari City, Hokkaido, Japan

Wakkanabe Formation

?Middle Eocene

(*nom. nud.* by junior homonym of *Elphidium asanoi* Matsunaga, 1963)

***Elphidium asanoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 109, Pl. 36, figs. 6a, b.

Holotype: IGPS no. 85190.

Sakai, Kurokawa-mura, Kitakanbara-gun, Niigata Pref., Japan

Tsugawa Formation

Miocene

***Elphidium bosoense* Fujita, 1956**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), no. 35, 232, Pl. 8, figs. 6a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50102.

Ubara coast, Katsuura City, Chiba Pref. (Boso Peninsula), Japan (35°8'39.2"N, 140°16'38.4"E)

Beach sand

Recent

***Elphidium etigoense* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 392, Pl. 34, figs. 1a, b.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Haizume Formation

Pliocene

***Elphidium ezoense* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 527, 787, Text-figs. 1a, b.

Holotype: IGPS no. 21433, Paratypes: (Text-fig. 2, Pl. 24(12), figs. 1, 2).

Horonitachibetsu (Zarigawa), Numata-mura (Numata-cho), Uryu-gun, Hokkaido, Japan (43°50.2'N, 141°55.7'E)

Takikawa beds(Takikawa

Pliocene

***Elphidium hanzawai* Asano, 1939**

Geol. Soc. Japan, Jour., v. 46, no. 551, 426, Text-fig. 3.

Holotype: IGPS no. 62910, Paratype: (Text-figs. 4a, b).

A sea-cliff at 700 m W of Anden, Iriai-mura, Minami-akita-gun (Anden, Iriai, Oga City), Akita Pref., Japan (39°58.0'N, 139°51.2'E)

Shibikawa Formation

Pliocene

***Elphidium hokkaidoense* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 8, Figs. 44, 45 .

Holotype: IGPS no. 66178.

300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan (42°39.5'N, 140°16.8'E)

Setana Formation

Pliocene

***Elphidium iojimaense* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 59, Pl. 9, figs. 15a, b.

Holotype: IGPS no. 77195.

Ns-4 (Takashima Coal-field), Iojima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32°42.2'N, 129°46.8'E)

Iojima Formation

Oligocene

***Elphidium ishikariense* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 125, Pl. 10, figs. 2a, b.

Holotype: IGPS no. 98158.

Sample TNZ08, Tanzan River, ca. 12 miles SE of Akabira City, Hokkaido, Japan

Akabira Formation

?Middle Eocene

***Elphidium izumoense* Nomura, 1990**

Tran. Proc. Palaeontol. Soc. Japan, N.S., no. 158, 472, Figs. 9-4a, b.

Holotype: DESS 88004, Paratypes: DESS 88005 (Figs. 9-3a, b).

MT-13 of boring core at Asakumi-cho, Matsue City, Shimane Pref., Japan

Matsue Formation

late Middle Miocene

***Elphidium javanum* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 102, Pl. 18(2), figs. 10a, b.

Holotype: IGPS no. 21409.

Tji-Saar, Batavia, West Java, Indonesia

Formation IV (lower part)

Miocene

***Elphidium kaneharai* Ishiwada, 1958**

Geol. Survey Japan, Rep., no. 180, 18, Text-figs. 2a, b; Pl. 1, fig. 17.

Holotype: Geol. Surv. Japan PF57017.

Loc. 8, near an inlet in the brackish lake Hamana-ko, Shizuoka Pref., Japan

Water depth: 2.05 m

Recent

***Elphidium kusiroense* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 590, Pl. 14(3), fig. 2.

Holotype: IGPS no. 21420.

Harutori, Kushiro City, Hokkaido, Japan (42 °58.3'N, 144 °24.7'E)

Pleistocene

***Elphidium mabutii* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 31, Pl. 1, figs. 4a, b.

Holotype: IGPS no. 77257.

570 m in depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan
Omagari Formation

Eocene

***Elphidium mabutii* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 31, Pl. 1, figs. 6a, b.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Wakkanabe-sawa, Yubari City, Hokkaido, Japan

Wakkanabe Formation

Eocene

***Elphidium matsuense* Nomura, 1990**

Tran. Proc. Palaeontol. Soc. Japan, N.S., no. 158, 473, Figs. 9-7a, b.

Holotype: DESS 88006, Paratypes: DESS 88007 (Figs. 9-6a, b).

MT-13 of boring core at Asakumi-cho, Matsue City, Shimane Pref., Japan

Matsue Formation

late Middle Miocene

***Elphidium matsukawauraense* Takayanagi, 1955**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 45, 51, Figs. 27a, b.

Holotype: IGPS no. 67150.

L-4, Matsukawaura, Soma City, Fukushima Pref., Japan (37 °49'00.6"N, 141 °41'11.6"E)

Recent

***Elphidium miikense* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 82, Pl. 1, figs. 8a, b.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no.2006.

Along the road between Kusubo and Kotsura, Ariake-mura, Amakusa-gun, Kumamoto Pref., Japan (32 °29'36"N, 130 °21'31"E)

Kyoragi Formation (lower part)

Middle Eocene

***Elphidium nakanokawaense* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10,

no. 3, 538, Pl. 1, Figs. 4, 5.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13560.

Kaigara-sawa, Kuromatsunai-machi (Kaigarasawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Elphidium ombetsuense* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 32, Pl. 1, figs. 7a, b.

Holotype: IGPS no. 77258.

570 m in depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan
Omagari Formation

Eocene

***Elphidium omuraense* Shuto, 1953**

Japanese Jour. Geol. Geogr., v. 23, 137, Figs. 8a-c.

Holotype: Sp. Reg. No. KU, N 4002.

Omura Bay, Nagasaki Pref., Japan

Water depth: between 6 and 24 m

Recent

***Elphidium ozawai* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 372, Pl. 5, figs. 11a, b.

Holotype: UMUT CF 3023.

Hachimanyama, Uzo, Utsunomiya City, Tochigi Pref., Japan (36 °33.8'N, 139 °53.4'E)

Terayama Group

Miocene

***Elphidium parvulum* Aoki, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70., 259, Pl. 27, figs. 1a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu. (not numbered).

A river-side cliff along the Yoro River, 0.5 km S of the Yoro-Keikoku Station, Kamo-mura, Ichihara-gun (Ichihara City), Chiba Pref. (Boso Peninsula), Japan

Kiyosumi Formation (lower part)

Early Pleistocene

***Elphidium perforatum* Nomura, 1990**

Tran. Proc. Palaeontol. Soc. Japan, N.S., no. 158, 474, Figs. 9-9a, b.

Holotype: DESS 88008, Paratypes: DESS 88009 (Figs. 9-12a, b, 13).

MT-13 of boring core at Asakumi-cho, Matsue City, Shimane Pref., Japan

Matsue Formation

late Middle Miocene

***Elphidium planum* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 392, Pl. 34, figs. 2a, b.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan
Haizume Formation
Pliocene

***Elphidium praesomaensis* Nomura, 1990**

Tran. Proc. Palaeontol. Soc. Japan, N.S., no. 158, 476, Figs. 9-8a, b.
Holotype: DESS 88010.
MT-13 of boring core at Asakumi-cho, Matsue City, Shimane Pref., Japan
Matsue Formation
late Middle Miocene

***Elphidium rarum* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 393, Pl. 34, figs. 3a, b.
Holotype: Res. Inst. Nat. Resour. (not numbered).
Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan
Haizume Formation
Pliocene

***Elphidium saitoi* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 51, Pl. 8, figs. 19a, b.
Holotype: IGPS no. 77176.
IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)
Kishima Formation
Oligocene

***Elphidium sendaiense* Takayanagi, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 2, 26, Fig. 3.
Holotype: IGPS no. 66104.
South cliff of the Hirose River, about 400 m SE of Goroku, Aoba-ku, Sendai City, Miyagi Pref., Japan (38 °15.3'N, 140 °49.6'E)
Tatsunokuchi Formation
Pliocene

***Elphidium simaensis* Makiyama & Nakagawa, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 572, 241, Fig. 2.
Holotype: Geol. Inst., Kyoto Univ. (?)
330 m S of the Hazama Railway Station on the Shima Railway (Kintetsu-Shima Line), Kiba, Isobe-machi, Shima-gun (Shima Peninsula), Mie Pref., Japan
Pleistocene

***Elphidium somaense* Takayanagi, 1955**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 45, 52, Figs. 28a, b.
Holotype: IGPS no. 67151.

Is-20, off Isobe, Soma City, Fukushima Pref., Japan (37 °46'56.4"N, 141 °10.4"E)
Recent

***Elphidium subcrispum* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 139, Pl. 11, figs. 8a, b.
Holotype: IGPS no. 60870.
Intosi, Tikuto-gai, Tikuto-gun, Shitiku Pref., northern Taiwan (Formosa)
Lower Byoritu beds
Tertiary

***Elphidium subgranulosum* Asano aureum Aoki, 1960**

In Iwabuchi et al., Hydrographic Office of Japan, Mar. Res. Lab., Contr., v. 2, no. 2, p.99, Pl. 1, nos. 7, 8.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52032, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No.52033 (Pl. 1, nos. 9, 10).
Piston core from Nakanose, off Yokohama City, Tokyo Bay, Japan
Layer No. 11 (100-110 cm in depth), paratype: Layer No. 33 (320-330 cm)
Holocene

***Elphidium subgranulosum* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 586, Pl. 14(3), figs. 4a, b.
Holotype: IGPS no. 21418.
Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)
Setana Formation
Pliocene

***Elphidium subincertum* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 10, Figs. 56, 57 .
Holotype: IGPS no. 66184.
1 km S of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.1'N, 140 °16.8'E)
Setana Formation
Pliocene

***Elphidium sumitomoii* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 51, Pl. 8, figs. 20a, b.
Holotype: IGPS no. 77177.
Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)
Kishima Formation
Oligocene

***Elphidium suzukii* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 394, Pl. 34, figs. 4a, b.

Holotype: Res. Inst. Nat. Resour. (not numbered).
 Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan
 Haizume Formation
 Pliocene

***Elphidium taiwanum* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 139, Pl. 11, figs. 9a, b.
 Holotype: IGPS no. 60871.
 Nanka, Koko-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)
 Upper Byoritu beds
 Tertiary

***Elphidium tikutoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 139, Pl. 11, figs. 10a, b.
 Holotype: IGPS no. 60872.
 Hoppo, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)
 Lower Byoritu beds
 Tertiary

***Elphidium tsudai* Chiji & Nakaseko, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 663, 521, Figs. 2a, b.
 Holotype: Geol. Inst. Kyoto Univ. (not numbered).
 Futamata, Asakawa-mura, Kahoku-gun (Futamata, Kanazawa City), Ishikawa Pref., Japan (36 °33.2'N, 136 °46.3'E)
 Sunagozaka tuffite (Sunagozaka Formation)
 Miocene

***Elphidium yabei* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 589, Pl. 14(3), figs. 9a, b.
 Holotype: IGPS no. 21419, Paratype: (Pl. 14(3), figs. 10a, b).
 Loc. Setana 107 (Loc. 18), 500 m SW of (former) Hanaishi Railway Station, Omagari, Hanaishi, Toshibetsu-mura (Omagari, Hanaishi, Imakane-cho), Setana-gun, Hokkaido, Japan (42 °26.3'N, 140 °10.3'E)
 Setana beds (Setana Formation)
 Pliocene

***Elphidium yumotoense* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 476, Fig. 1, no. 7a, b.
 Holotype: IGPS no. 67035, Paratype: (Fig. 1, nos. 8a, b, 9).
 500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun (Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan (37 °00.5'N, 140 °51.3'E)
 Asagai Formation
 Oligocene

***Enantiodentalina muraii* Uchio, 1953**

Japanese Jour. Geol. Geogr., v. 23, 152, Pl. 14, figs. 1a, b, 2.
 Holotype: UMUT CF 3043.

Road cutting between Takaya and Watanai, Fujisawa City, Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)
 Naganuma Formation
 Pliocene

***Entosolenia circulocosta* (Asano) var. *carinata* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 37, Pl. 3, figs. 11a, b.
 Holotype: UMUT CF 3007.
 Hoonji, Nishi-mura (Hoonji, Chonan-machi), Chosei-gun, Chiba Pref., Japan
 Chonan Formation (lower part)
 Pleistocene

***Entosolenia echigoensis* Asano & Inomata, 1952**

Illust. Cat. Japan. Small. Foram., suple. 1, 7, Figs. 35, 36.
 Holotype: IGPS no. 75253.
 200 m W of Nobe, Muikaichi-mura, Koshi-gun (Muikaichi-machi, Nagaoka City), Niigata Pref., Japan (37 °18.8'N, 138 °50.4'E)
 Ushigakubi Formation
 Pliocene

***Entosolenia fukamiensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 11, Pl. 1, figs. 29a, b.
 Holotype: IGPS no. 75284.
 IW-6, Fukami-gawa, Konosu-mura, Fugeshi-gun (Fukami-machi, Wajima City), Ishikawa Pref. (Noto Peninsula), Japan (37 °24.5'N, 138 °58.3'E)
 Higashi-innai Formation
 Miocene

***Entosolenia marginata* (Montagu) var. *angulata* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 38, Pl. 3, figs. 14a, b.
 Holotype: UMUT CF 3010.
 Loc. 11, 1000 m SWW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan
 Upper part of Tomiya tuffaceous sandstone
 Pliocene

***Entosolenia marginata* (Montagu) var. *cushmani* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 37, Pl. 3, figs. 13a, b.
 Holotype: UMUT CF 3009.
 Loc. 11, 1000 m SWW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan
 Upper part of Tomiya tuffaceous sandstone
 Pliocene

***Entosolenia ozawai* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 37, Pl. 3, figs. 10a, b.

Holotype: UMUT CF 3006.

Odoro, Kamitaki-mura (Odoro, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Umegase Formation (upper part)

Pliocene (Early Pleistocene)

***Entosolenia semistriata* Uchio, 1950**

Japanese Assoc. Petroleum Technol., Jour., v. 15, no. 4, 190, Fig. 15.

Holotype: UMUT CF 3005.

Loc. II-119B, about 1600 m SE of Shoryuji, Nakagawa-mura (Shoryuji, Isumi-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Otadai Formation

Late Pliocene

***Entosolenia takaai* Asano, 1952**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 49, Pl. 6, fig. 3.

Holotype: IGPS no. 74799.

IGPS loc. no. Yu-1, about 2 km S of Momijiyama, Yubari City, Hokkaido, Hokkaido, Japan

Takinoue Formation

Miocene

***Epistomaria (Epistomariella) miurensis* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 315, Figs. 3a-c, 10.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Futatsuike, Tsurumi-ku, Yokohama City, Kanagawa Pref., Japan (35°22.7'N, 139°37.7'E)

Nakazato Formation

Pliocene

***Epistomaria (Epistomariella) nakazatoensis* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 316, Figs. 4a-c, 11.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Cliff between Sugita and Kaminakazato, Isogo-ku, Yokohama City, Kanagawa Pref., Japan (35°22.7'N, 139°37.7'E)

Nakazato Formation

Pliocene

***Epistomaria yabei* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 945, Pl. 52(18), figs. 1a-c.

Holotype: IGPS no. 21392.

Kannoura, Tosa Bay, Kochi Pref., Japan

Water depth: 0 m (shore sand)

Recent

***Epistominella amakusaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 67, Pl. 11, figs.

18a, b.

Holotype: IGPS no. 77213.

IGPS loc. no. K, Oshima, Oninoike-mura (Oshima, Itsuwa-machi), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°32.3'N, 130°11.0'E)

Sakasegawa Formation (upper part)

Eocene

***Epistominella exigua (Brady) multiloculata* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 123, Pl. 9, figs. 5a-c.

Holotype: IGPS no. 98124.

Sample UTN04, Utsunai River, NW of Nakatombetsu, (Hamatombetsu-cho), Hokkaido, Japan

Utsunai Formation

Late Eocene - Oligocene

***Epistominella hokkaidoensis* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10, no. 3, 542, Pl. 2, figs. 4a-c.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13565.

Soibetsu-gawa, Kuromatsunai-machi (Soibetsugawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Epistominella kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 125, Pl. 14, fig. 1a.

Holotype: ESK F-9675.

St. 136, central part of Kagoshima Bay, Kagoshima Pref., Japan (31°10.1'N, 130°44.4'E)

Water depth: 60 m

Recent

***Epistominella kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 125, Pl. 14, figs. 1b, e.

Paratypes: ESK F-9676 & 9677.

St. 127, central part of Kagoshima Bay, Kagoshima Pref., Japan (31°12.0'N, 130°44.4'E)

Water depth: 74 m

Recent

***Epistominella nipponica* Kuwano, 1967**

In Matoba, Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 38, no. 2, 254, Figs. 8a-c.

Holotype: Research Inst., Natural Res. YK-H-0009, Paratype: Research Inst., Natural Res. YK-P-0017 (Figs. 8d-f).

B-M2, off Amatsu, Chiba Pref., Japan, NW Pacific

Water depth: 118 m

Recent

***Epistominella pulchella* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 398, Pl. 34, figs. 10a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamita, Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan (37 °21.0'N, 138 °34.4'E)

Haizume Formation
Pliocene

***Epistominella shimanensis* Nomura, 1986**

Geol. Soc. Japan, Jour., v. 92, no. 7, 473, Fig. 11, d-f.

Holotype: DESS 84015(1), Paratype: DESS 84015(2) (Pl. 3, fig. 7).

KA13, Kamaura, Hirata City, Shimane Pref., Japan
Aishiro Formation
Middle Miocene

***Epistominella subglobosa* Konda, 1985**

In Shiki, ed., Geology of the northern Philippine Sea, 148, Pl. 7, figs. 3a-c.

Holotype: OMNH Reg. No. F17838F, Paratype: OMNH Reg. No. F17839F (Pl. 7, figs. 4a-c).

GDP-24-4-(4180), at water depth 3120 m, Daito Ridge, E of Okinawa Island, Japan (25 °48.3'N, 133 °22.3'E)

180 cm below sea-floor, paratype: 210 cm below sea-floor
Quaternary

***Epistominella suttsuensis* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10, no. 3, 541, Pl. 2, figs. 3a-c.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13564.

Soibetsu-gawa, Kuromatsunai-machi (Soibetsugawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan
Nakanokawa Formation
Pliocene

***Epistominella takayanagii* Iwasa, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 712, 17, Text-figs. 4a-c.

Holotype: IGPS no. 65504.

Rotary no. 1 Well at 150 m E of the Funaoka Shrine, Funaoka, Honjo City, Akita Pref., Japan

Osawa Formation
Pliocene

***Eponides asanoi* Higuchi, 1965**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 60, 180, Pl. 21, figs. 3a-c.

Holotype: (unknown).

A well at Kujukuri-machi, Sanbu-gun, Chiba Pref., Japan
Ohara Formmion , Kazusa Group (a core at depth of 1060 m)
Pliocene

(*nom. nud.* owing to junior homonym of *Eponides asanoi* Yoshida, 1958, and new name has been given as *Eponides bosoensis* by Higuchi, 1967.)

***Eponides asanoi* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10,

no. 3, 540, Pl. 2, figs. 1a-c.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13562.

Akadamobuchi, Kuromatsunai-machi (Akadamobuchi, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Setana Formation
Pliocene

(*nom. nud.* owing to junior homonym of *Eponides asanoi* Yoshida, 1958, and new name has been given by Yoshida, 1980)

***Eponides bosoensis* Higuchi, 1967**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 65, 26.

Holotype: (not numbered) (Higuchi, 1965, 180, Pl. 21, figs. 3a-c)

A core at depth of 1060 m in the well at Kujukuri-machi, Sanbu-gun, Chiba Pref., Japan

Ohara Formmion , Kazusa Group
Pliocene

(New name for *Eponides asanoi* Higuchi, 1965.)

***Eponides hatakeyamai* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 192, Text-figs. 6a-c.

Holotype: IGPS no. 65521.

A cliff, 500 m E of Katsuradai, Shimogo-mura (Katsuradai, Higashiyuri-machi), Yuri-gun, Akita Pref., Japan

Sugota Formation
Middle Miocene

***Eponides iojimaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 58, Pl. 9, figs. 13a-c.

Holotype: IGPS no. 77197.

IGPS loc. no. Ns-4 (Takashima Coal-field), Iojima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32 °42.2'N, 129 °46.8'E)

Iojima Formation
Oligocene

***Eponides lobatus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 123, Pl. 9, figs. 6a-c.

Holotype: IGPS no. 98128.

Sample KUM35, Kumanosawa, Yubari City, Hokkaido, Japan
Poronai Formation

Late Eocene - Oligocene

***Eponides nagasakiensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 58, Pl. 9, figs. 5a-c.

Holotype: IGPS no. 77192.

IGPS loc. no. Ns-3 (Takashima Coal-field), Okinoshima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32 °41.5'N, 129 °46.8'E)

Okinoshima Formation

Eocene

***Eponides naraensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 388, Pl. 42, figs. 1a-c.

Holotype: IGMSH coll. (not numbered).

A cliff of the Fujiwara Rifle-Range, S of Nara City, Nara Pref., Japan

Toyoda Formation

Miocene

***Eponides niigataensis* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 398, Pl. 34, figs. 11a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamita, Kamitajiri, Tajiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Nishiyama Formation

Pliocene

***Eponides orientalis* Asano, 1937**

Saito Ho-on kai Mus., Res. Bull., no. 13, 117, Pl. 16, figs. 8a-c.

Holotype: IGPS no. 21394A, Paratype: SHM No.11077.

Shiogama Bay, Miyagi Pref., Japan

Recent

(Type designation for this species by Asano (1951i) is invalid, since the holotype has been designated by Asano (1937) himself.)

***Eponides rotundus* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 399, Pl. 34, figs. 12a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamitajiri, Takiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Nishiyama Formation

Pliocene

***Eponides sasai* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 94, Pl. 10, figs. 3a, b.

Holotype: IGPS no. 21451, Paratype: (Pl. 10, 2a-c).

200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °24.0'N, 139 °55.8'E)

Setana beds (Setana Formation)

Pliocene

***Eponides shiraii* Yoshida, 1980**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 117, 242.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13562 (Shirai, 1960, 540, Pl. 2, figs. 1a-c).

Akadamobuchi, Kuromatsunai-machi (Akadamobuchi, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Setana Formation

Pliocene

(New name for *Eponides asanoi* Shirai, 1960, not of Yoshida, 1958.)***Eponides subpraecinctus* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 12, Figs. 88-90.

Holotype: IGPS no. 67189.

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36 °51.0'N, 140 °47.0'E)

Kokozura Formation

Middle Miocene

***Eponides tanaii* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 376, Pl. 5, figs. 8a-c.

Holotype: UMUT CF 3018, Paratype: UMUT CF 3028 (Pl. 5, figs. 9a-c).

Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan (36 °31.0'N, 139 °44.2'E)

Momiyama Formation

Miocene

***Eupatellinella bullata* Hatta, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 178, Pl. 28, figs. 5a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 28, figs. 4a, b, 7, 8).

Loc. 35, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 23 m

Recent

***Eusphaeroidina inflata* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 29, Pl. 11, figs. 11a, b, 12.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 11, figs. 9a, b, 10).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

91-93 cm below sea-floor

Late Pleistocene to Holocene

***Eusphaeroidina inflata* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 29, Pl. 11, figs. 6, 7a, b, 8a, b.

Paratype: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

21-23 cm below sea-floor

Late Pleistocene to Holocene

***Euuvigerina akitaensis* (Asano) *pumilio* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 152, Pl. 41, figs. 11-13.

Holotype: IGPS no. 99776.

Boso Peninsula, Chiba Pref., Japan
Umegase Formation
Early Pleistocene

***Euvigerina introrsa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 155, Pl. 46, fig. 1.
Holotype: IGPS no. 99791, Paratype: IGPS no. 99792 (Pl. 46, fig. 2).
OM-13, Miyazaki Pref., Japan
Takanabe Member, Koyu Formation
Pliocene

***Euvigerina introrsa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 155, Pl. 46, fig. 5.
Paratype: IGPS no. 99795.
OK-19, Okinawa Pref., Japan
Shinzato Formation
Pliocene

***Euvigerina introrsa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 155, Pl. 46, figs. 3, 4, 6, 7.
Paratypes: IGPS nos. 99793 & 99794.
OK-1, Okinawa Pref., Japan
Yonabaru Formation
Early Pliocene

***Euvigerina kiyoshiasanoi* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 157, Pl. 40, fig. 8.
Holotype: IGPS no. 99801.
KT85-15, G-1, Yamato Bank, Japan Sea (39°03.1'N, 134°20.8'E)
Water depth: 335 m
Recent

***Euvigerina kiyoshiasanoi* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 157, Pl. 40, figs. 6-8.
Paratype: IGPS nos. 99802, 99808 & 99809.
ASH-3, Asahiyama, Himi City, Toyama Pref., Japan
Junicho Formation
Early Pliocene

***Euvigerina kiyoshiasanoi* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 157, Pl. 40, figs. 6, 7, 10, 11.
Paratypes: IGPS nos. 99799 & 99800.
St. 143, Toyama Bay, Japan Sea
Water depth: 253 m
Recent

***Euvigerina kiyoshiasanoi* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 158, Pl. 43, figs. 1, 2, 8, 9.
Paratypes: IGPS nos. 99803 & 99804.
St. 104, Toyama Bay, Japan Sea
Water depth: 450 m
Recent

***Euvigerina kiyoshiasanoi* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 158, Pl. 43, figs. 4, 5.
Paratypes: IGPS nos. 99806-99807.
St. 87, Toyama Bay, Japan Sea
Water depth: 345 m
Recent

***Euvigerina lobulata* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 158, Pl. 43, fig. 3.
Holotype: IGPS no. 99805.
St. 87, Toyama Bay, Japan Sea
Water depth: 345 m
Recent

***Euvigerina nipponica* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 159, Pl. 45, figs. 4, 5.
Holotype: IGPS no. 99815.
TS-7, Tosa Bay (33°02.5'N, 133°47.5'E)
Water depth: 918 m
Recent

***Euvigerina nipponica* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 158, Pl. 43, figs. 1, 2, 6.
Paratypes: IGPS nos. 99812 & 99813.
KT85-15, G-10, Kii-suido (Kii Channel)
Water depth: 450 m
Recent

***Euvigerina nipponica* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 159, Pl. 45, fig. 3.
Paratype: IGPS no. 99814.
KT85-6, G-2, Enshu-nada (34°10.6'N, 138°00.0'E)
Water depth: 938 m
Recent

***Evolvocassidulina belfordi* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 79, Pl. 2, figs. 6a-c; text-fig. 49(10).
Holotype: IGPS no. 97228, Paratype: IGPS no. 97228 (unfigured).
OK-10, road-side outcrop, about 150 m NE of Tomori,

Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °07'57"N, 127 °43'54"E)
Yonabaru Formation (upper part)
Early Pliocene

***Evolvocassidulina eadei* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 77, Pl. 2, figs. 5a, b.
Holotype: IGPS no. 97227, Paratypes: IGPS no. 97227A, B (unfigured).
OK-15, road-side outcrop at Oozuku, Oozato-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'38"N, 127 °45'48"E)
Yonabaru Formation (upper part)
Early Pliocene

***Faujasina akitaensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 12, Figs. 68-70.
Holotype: IGPS no. 66188.
500 m W of Dai, Babanome-mura (Babame, Gojome-machi), Minami-akita-gun, Akita Pref., Japan (39 °54.6'N, 140 °09.6'E)
Dai Formation
Pliocene

***Fissurina barkeri* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 23, Pl. 7, figs. 12a, b.
Holotype: NSM, Micropal. Coll. (not numbered).
Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)
101-103 cm below sea-floor
Late Pleistocene to Holocene

***Fissurina circulocosta* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 219, Pl. 30(7), fig. 17.
Holotype: IGPS no. 21484.
Tsurihashi, Tshibetsu-mura (Tsurihashi, Imakane-cho), Setana-gun, Hokkaido, Japan (42 °25.2'N, 140 °09.7'E)
Setana Formation
Pliocene
(*Fissurina circulo-costa* in the original description.)

***Fissurina cucurbitacema* Loeblich & Tappan *bispinata* Ujiie, 1963**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), v. 8, no. 79, 232, Pl. 1, figs. 10a, b.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52055, Paratypes: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 52056 & 52057 (Pl. 1, figs. 9, 11).
Boring core at river mouth of Arakawa, northern corner of Tokyo Bay, Tokyo, Japan
Yurakucho Formation
Holocene

***Fissurina longifimbriata* Ujiie, 1997**

Bull. Coll. Sci., Univ. Ryukyus, No. 63, 125, Pl. 1, figs. 7a-c, 8.
Holotype: NSM, Micropal. Coll. (not numbered), Paratypes: (Pl. 1, figs. 9a, b, 10a, b).
Core H3571, Hess Rise, N. Pacific (34 °11.7'N, 179 °15.4'E)
Late Pleistocene to Holocene

***Fissurina matobai* Higuchi, 1965**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 60, 180, Pl. 21, figs. 2a, b.
Holotype: (unknown).
A well at Kujukuri-machi, Sanbu-gun, Chiba Pref., Japan
Otadai Formation, Kazusa Group (a core at depth of 480 m)
Pliocene

***Fissurina minima* Aoki, 1964**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 53, 164, Pl. 25, figs. 1a, b.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68001.
Along the Sasa River, about 800 m of Katakura, Kazusa-machi, Kimitsu-gun (Katakura, Kimitsu City), Chiba Pref. (Boso Peninsula), Japan
Kiyosumi Formation (lower part)
Late Miocene

***Fissurina periperforata* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 25, Pl. 8, figs. 10a, b.
Holotype: NSM, Micropal. Coll. (not numbered).
Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)
31-33 cm below sea-floor
Late Pleistocene to Holocene

***Fissurina yoshikoe* Ujiie, 1997**

Bull. Coll. Sci., Univ. Ryukyus, No. 63, 125, Pl. 2, figs. 1a, b, 2.
Holotype: NSM, Micropal. Coll. (not numbered).
Core H3571, Hess Rise, N. Pacific (34 °11.7'N, 179 °15.4'E)
Late Pleistocene to Holocene

***Flintina depressa* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 944, Pl. 51(17), figs. 5a-c.
Holotype: IGPS no. 21388A.
Kannoura, Tosa Bay, Aki-gun, Kochi Pref., Japan
Shore sand
Recent

***Flintina japonica* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 943, Pl. 51(17), figs. 3a-c.
Holotype: IGPS no. 21386.
Kannoura, Tosa Bay, Aki-gun, Kochi Pref., Japan
Shore sand

Recent

***Flintina nomurai* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 943, Pl. 51(17), figs. 4a-c.

Holotype: IGPS no. 21387A.

Kannoura, Tosa Bay, Aki-gun, Kochi Pref., Japan

Shore sand

Recent

***Flintina subglobosa* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 27, Pl. 4, figs. 2a-c.

Holotype: IGPS no. 67135.

Kitahari, Tano-cho, Aki-gun, Kochi Pref., Japan (33 °26'05"N, 134 °00'06"E)

Ananai Formation

Pliocene

***Fronidularia nangoensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 329, Pl. 37, fig. 3.

Holotype: IGPS no. 21381.

200 m S of Kechienji, Nango-mura, Ogasa-gun (Kechienji, Kakegawa City), Shizuoka Pref., Japan (34 °46.0'N, 138 °01.4'E)

Kechienji Formation, Kakegawa Group

Pliocene

***Fronidularia notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 12, Pl. 1, figs. 32a, b.

Holotype: IGPS no. 75283.

IGPS loc. no. IW-13, Yokoyama, Nishiumi-mura, Suzu-gun (Yokoyama, Suzu City), Ishikawa Pref. (Noto Peninsula), Japan (37 °31.4'N, 137 °18.9'E)

Higashi-innai Formation

Miocene

***Fronidularia scolopendrararia* Yokoyama, 1890**

Palaeontographica, v. 36, 188, Pl. 24, figs. 3a, b.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Fronidularia tosaensis* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 29, Pl. 4, figs. 6a, b.

Holotype: IGPS no. 67140.

Ko-25, a cliff, 100 m E of Nobori, Hane-mura, Aki-gun (Nobori, Hane-cho, Muroto City), Kochi Pref., Japan (33 °22'09"N, 134 °03'33"E)

Nobori Formation

Pliocene

***Fursenkoina uchioi* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 125, Pl. 10, figs. 3a, b.

Holotype: IGPS no. 98162.

Sample KUM12, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Gaudryina ashियाensis* Murata, 1953**

Kyushu Inst. Technol., Bull., no. 3, 6, Pl. 1, figs. 4a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. MO-5, Kariomisaki, Ashiya-machi, Onga-gun, Fukuoka Pref., Japan (33 °54'37.8"N, 130 °40'1.6"E)

Yamaga Formation (middle part; 30 m below the top), Ashiya Group

Late Oligocene

***Gaudryina imamurai* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 382, Pl. 39, figs. 1a, b.

Holotype: IGMSH coll. (not numbered).

Road side cutting at Takuno, Nima-machi, Ooda City (Takuno-machi, Nima-cho, Nima-gun), Shimane Pref., Japan

Kawai Formation

Miocene

***Gaudryina karihaensis* Asano, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 1, 6, Pl. 2, figs. 2a, b.

Holotype: IGPS no. 66943.

IGPS loc. no. Ni-17, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan (37 °22.5'N, 138 °37.3'E)

Haizume Formation

Pliocene

***Gaudryina kishimaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 52, Pl. 8, figs. 1a, b.

Holotype: IGPS no. 77179.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takase, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Gaudryina (Siphogaudryina) matusimai* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 531, 1234, Text-figs. 1-3.

Holotype: IGPS no. 21443.

Hiradoko, Shoin-mura (Hiradoko, Shoin-machi, Suzu City), Ishikawa Pref. (Noto Peninsula), Japan (37 °27.5'N, 137 °18.5'E)

Hiradoko shell beds

Pleistocene

***Gaudryina (Pseudogaudryina) niigataensis* Asano, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 1, 8, Pl. 2, figs. 6a, b.

Holotype: IGPS no. 66946.

IGPS loc. no. Ni-5, 1 km NW of Kutta, Shimada-mura (Kutta, Izumozaki-machi), Santo-gun, Niigata Pref., Japan (37°33.7'N, 138°44.1'E)

Haizume Formation

Pliocene

***Gaudryina (Pseudogaudryina) oga* Asano, 1939**

Geol. Soc. Japan, Jour., v. 46, no. 551, 425, Text-figs. 2a-c.

Holotype: IGPS no. 62912.

A sea-cliff at 700 m W of Anden, Iriai-mura, Minami-akita-gun (Anden, Iriai, Oga City), Akita Pref. (Oga Peninsula), Japan (37°58.0'N, 139°50.8'E)

Wakimoto Formation

Pliocene

***Gaudryina ogasaensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 326, Pl. 36, figs. 2a, b.

Holotype: IGPS no. 21331.

Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34°47.0'N, 137°57.2'E)

Hosoya Formation, Kakegawa Group

Pliocene

***Gaudryina takunoensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 383, Pl. 39, figs. 2a, b.

Holotype: IGMSH coll. (not numbered).

Road side cutting at Takuno, Nima-machi, Ooda City (Takuno-machi, Nima-cho, Nima-gun), Shimane Pref., Japan

Kawai Formation

Miocene

***Gaudryina yabei* Asano, 1939**

Geol. Soc. Japan, Jour., v. 46, no. 551, 425, Text-figs. 1a, b.

Holotype: IGPS no. 62911.

A sea-cliff at 700 m W of Anden, Iriai-mura, Minami-akita-gun (Anden, Iriai, Oga City), Akita Pref. (Oga Peninsula), Japan (39°58.0'N, 139°50.8'E)

Wakimoto Formation

Pliocene

***Gaudryinella hanzawai* Asano, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 1, 9, Pl. 2, figs. 13a, b.

Holotype: IGPS no. 66947.

Ni-17, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan (37°22.5'N, 138°37.3'E)

Haizume Formation

Pliocene

***Gaudryinella japonica* Asano, 1950**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 1, 9, Pl. 2, figs. 12a, b.

Holotype: IGPS no. 66192, Paratype: (Pl. 2, fig. 11).

Ni-17, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan

Haizume Formation

Pliocene

***Gaudryinella tsuchidai* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 369, Pl. 5, figs. 3a, b.

Holotype: UMUT CF 3020.

Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan (36°32.0'N, 139°44.2'E)

Momiyama Formation

Miocene

***Geminaricta pacifica* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 608, Pl. 16(5), figs. 21a, b.

Holotype: IGPS no. 21445A.

Soyo-maru St. no. 578, Toyama Bay, Japan Sea

Water depth: 187 m

Recent

***Geminospira simaensis* Makiyama & Nakagawa, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 572, 241, Figs. 3-5.

Holotype: Geol. Inst. Kyoto Univ. (not numbered).

330 m S of the Hazama Railway Station on the Shima Railway (Kintetsu-Shima Line), Kiba, Isobe-machi, Shima-gun (Shima Peninsula) Mie Pref., Japan

Pleistocene

***Glandulina nipponica* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 8, 14, Figs. 71, 72 .

Holotype: IGPS no. 67067.

A sea-cliff at 700 m W of Anden, Iriai-mura, Minami-akita-gun (Anden, Iriai, Oga City), Akita Pref. (Oga Peninsula), Japan (39°58.3'N, 139°51.4'E)

Shibikawa Formation

Pliocene

***Globobulimina hanzawai* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 10, Pl. 2, figs. 4a, b.

Holotype: IGPS no. 77169.

Soyo-maru St. no. 345, Kii Channel, central Japan

Water depth: 439 m

Recent

***Globobulimina hanzawai* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 10, Pl. 2, figs. 5a, b.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 574, off Noto Peninsula, Japan Sea

Water depth: 225 m

Recent

***Globobulimina hanzawai* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 10, Pl. 2, figs. 6a, b.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 495, NE of Tsushima, Japan Sea

Water depth: 146 m

Recent

***Globobulimina ovata* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 508, Pl. 10, figs. 3-4.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50105.

Loc. no. Is. 3, road cutting of Isazawa-mura (Isazawa, Yanagawa-machi), Date-gun, Fukushima Pref., Japan

Isazawa Sandstone Member, Date Formation

Miocene

***Globocassidulina bisecta* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 73, Pl. 2, figs. 2a-c.

Holotype: IGPS no. 97220A, Paratype: IGPS no. 97220B (unfigured).

BS-9, outcrop, 650 m SW of Tsukizaki Railway Station, Ichihara City, Chiba Pref., Japan (35°17'44"N, 140°08'56"E)

Kokumoto Formation

Early Pleistocene

***Globocassidulina bisecta* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 73, Pl. 2, figs. 3a-c.

Paratype: IGPS no. 97221.

SW-3, sea-side cliff of Mano Bay, about 800 m of Hanyu, Sado Island, Niigata Pref., Japan (37°59'13"N, 138°16'22"E)

Shichiba Formation

Early Pleistocene

***Globocassidulina canaliornata* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 26; Nomura, 1983b, p. 22, Pl. 2, figs. 10a, b, 11 (as *Globocassidulina genma* (Todd)).

Holotype: IGPS no. 97188A.

OK-21, 600 m SSE of Sukunasan, Okinawa Island, Okinawa Pref., Japan (26°09'55"N, 127°49'37"E)

Shinzato Formation

Pliocene

***Globocassidulina crenulata* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 60, Pl. 1,

figs. 9a-c.

Holotype: IGPS no. 97191A, Paratype: IGPS no. 97191B (unfigured).

OK-4, outcrop at Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26°08'56"N, 127°43'35"E)

Shinzato Formation

Pliocene

***Globocassidulina exigua* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 28, Figs. 17-12a-c.

Holotype: NFL 9517, Paratypes: NFL 9518 (Figs. 17-13a-15c).

IW-12, about 1 km W of Kamazawa, Kindaichi, Ninohe City, Iwate Pref., Japan (40°20.3'N, 141°15.5'E)

Shitazaki Formation

Late Miocene

***Globocassidulina hatatensis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 31, Figs. 18-10a-c.

Holotype: NFL 9506, Paratype: NFL 9507 (Figs. 18-11a-13c).

HTTO-7, a cutting along the Tohoku Express Way, Saboyama, Sendai, Miyagi Pref. (probably HTT-07 of Oda and Sakai, 1977;

Saboyama, Taihaku-ku, Sendai City, Miyagi Pref., Japan)

Hatatate Formation

Middle Miocene

***Globocassidulina hokkaidoensis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 33, Figs. 16-1a-c.

Holotype: NFL 9508, Paratypes: NFL 9509 (Figs. 16-2a-3c).

WAK-65, river floor of the Wakkauenbetsu-gawa River, 750 m W of Nishitoppu, Shintotsugawa-cho (Nishitoppu,

Shintotsukawa-cho), Kabato-gun, Hokkaido, Japan (43°35.6'N, 141°43.5'E)

Wakkauenbetsu Formation

early Middle Miocene

***Globocassidulina ikebei* Konda, 1977**

In Nishimura et al., Kyoto Univ., Fac. Sci., Mem., Ser. Geol. & Mineral., v. 43, no.1/2, 124, Pl. 5, figs. 1a-c.

Holotype: Dept. Geol. Mineral., Fac. Sci., Kyoto Univ., Coll. Cat. No. JC1011, Paratype: Dept. Geol. Mineral., Fac. Sci., Kyoto Univ. (Pl. 5, figs. 2, 3; Pl. 6, figs. 2a-c)

Gravity core GDP-11-15-(6), at water depth 1830 m, eastern slope of Japan Trench, ESE of Hachijo Island, Tokyo, Japan (28°06.2'N, 131°35.2'E)

5.0-6.0 cm below sea-floor (paratypes: 5.0-6.0 cm, 15.0-16.0 cm, 25.0-216.0 cm)

Holocene

***Globocassidulina kakegawaensis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 34, Figs. 17-3a-c.

Holotype: NFL 9519, Paratype: NFL 9520 (unfigured).

KK-16, road-side outcrop, Saka-gawa, Kakegawa City, Shizuoka Pref., Japan (34°46.0'N, 138°02.1'E)

Tamari Formation, Sagara Group

Late Miocene-Pliocene

***Globocassidulina lenticularis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 36, Figs. 18-1a-c.

Holotype: NFL 9525, Paratypes: NFL 9526 (Figs. 18-2a-3c).

SEKI, sea cliff in Sekinohana, Togi-machi, Hakui-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 °12.6'N, 137 °04.1'E)

Sekinohana Limestone

early Middle Miocene

***Globocassidulina matobai* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 65, Pl. 1, figs. 15a-c.

Holotype: IGPS no. 97198A, Paratypes: IGPS no. 97198-11 (unfigured).

BS-2, road-side cutting at Arakiyatsu, Iriyamazu, Futtsu City, Chiba Pref. (Boso Peninsula), Japan (35 °12'20"N, 139 °54'13"E)

Tomiya Formation

Early Pleistocene

***Globocassidulina mucronata* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 63, Pl. 1, figs. 12a-c.

Holotype: IGPS no. 97195A, Paratypes: IGPS no. 97195-7 (unfigured).

OK-19, cliff about 500 m N of Shimo-oyakebaru, Tamagusuku-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'41"N, 127 °46'38"E)

Shinzato Formation

Pliocene

***Globocassidulina neobrocha* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 67, Pl. 1, figs. 16a-c.

Holotype: IGPS no. 97206.

BS-17, large river-side cliff at Shimoshinden, Ochi, Ichihara City, Chiba Pref., Japan (35 °31'30"N, 140 °13'46"E)

Yabu Formation

Middle Pleistocene

***Globocassidulina neobrocha* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, p. 1-101, 67.

Paratype: IGPS no. 97206A.

OG-21, road-side cliff at eastern end of Tayasawa (Tayazawa, Wakimoto, Oga City), Akita Pref. (Oga Peninsula), Japan (39 °54'47"N, 139 °53'41"E)

Shibikawa Formation

Early Pleistocene

***Globocassidulina notoensis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 36, Figs. 17-4a-c.

Holotype: NFL 9511, Paratype: NFL 9512 (Figs. 17-5a-c).

NOTO-27, river-side cliff of the Ukai-gawa River, 2.5 km SW

of Ukai, Houryo-machi, Suzu City, Ishikawa Pref. (Noto Peninsula), Japan (37 °23.7'N, 137 °13.1'E)

Hojuji Formation

early Middle Miocene

***Globocassidulina oblongiformis nana* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 39, Figs. 18-8a-c.

Holotype: NFL 9515, Paratype: NFL 9516 (Figs. 18-9a-c).

AT-22, 500 m S of Bekkari, Atsuta-mura, Atsuta-gun, Hokkaido, Japan (43 °23.3'N, 141 °26.2'E)

Atsuta Formation

Late Miocene

***Globocassidulina oblongiformis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 37, Figs. 18-4a-c.

Holotype: NFL 9513, Paratypes: NFL 9514 (Figs. 18-5a-7c).

NOTO-27, river-side cliff of the Ukai-gawa River, 2.5 km SW of Ukai, Houryo-machi, Suzu City, Ishikawa Pref. (Noto Peninsula), Japan (37 °23.7'N, 137 °13.1'E)

Hojuji Formation

early Middle Miocene

***Globocassidulina parviapertura* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, Pl. 1, figs. 6a, b; text-fig. 26(6).

Holotype: IGPS no. 97187, Paratype: IGPS no. 97187-5 (text-fig. 26(5)).

OK-18, outcrop, about 650 m WSW of Shimo-oyakebaru, Tamagusuku-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'15"N, 127 °46'15"E)

Yonabaru Formation (upper part)

Early Pliocene

***Globocassidulina pseudojaponica* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 41, Figs. 17-1a-c.

Holotype: NFL 9522, Paratype: NFL 9523 (Figs. 17-2a-c).

IW-1, river floor of the Mabechi-gawa River, Uwano, Kindaichi, Ninohe City, Iwate Pref., Japan (40 °20.5'N, 141 °16.7'E)

Tomesaki Formation

early Middle Miocene

***Globocassidulina pseudoquadrata* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 62, Pl. 1, figs. 14a-c; text-fig. 31(6).

Holotype: IGPS no. 97194A, Paratype: IGPS no. 97194B (Text-fig. 31(4)).

OK-22, outcrop at northern end of Kudaken, Chinen-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °10'33"N, 127 °48'55"E)

Shinzato Formation

Pliocene

***Globocassidulina rugosa* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 71, Pl. 2,

figs. 1a-c.

Holotype: IGPS no. 97219A, Paratype: IGPS no. 97219B (unfigured).

BS-7, outcrop, 50 m E of Kugahara Railway Station, Otaki-machi, Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35 °14'49"N, 140 °15'05"E)

Otadai Formation

Early Pleistocene

***Globocassidulina ryukyuensis* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 57, Pl. 1, figs. 5a-c.

Holotype: IGPS no. 97190A, Paratype: IGPS no. 97190B (unfigured).

OK-1, outcrop, about 500 m N of Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'21"N, 127 °43'26"E)

Yonabaru Formation (middle part)

Early Pliocene

***Globocassidulina shikii* Konda, 1985**

In Shiki, ed., Geology of the northern Philippine Sea, 148, Pl. 7, figs. 1a-c.

Holotype: OMNH Reg. No. F17836F, Paratype: OMNH Reg. No. F17837F (Pl. 7, figs. 2a-c).

GDP-24-4-(4210), at water depth 3120 m, Daito Ridge, E of Okinawa Island, Okinawa Pref., Japan (25 °48.3'N, 133 °22.3'E) 210 cm below sea-floor

Quaternary

***Globocassidulina subbisecta* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, p. 1-101, 68, Pl. 1, figs. 17a-c; text-fig. 36(8).

Holotype: IGPS no. 97212A, Paratype: IGPS no. 97212-6 (Text-fig. 36(7)).

OK-3, outcrop at Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °09'04"N, 127 °43'29"E)

Yonabaru Formation (upper part)

Early Pliocene

***Globocassidulina subparva* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 64, Pl. 1, figs. 11a-c.

Holotype: IGPS no. 97197, Paratype: IGPS no. 97197-11 (Text-fig. 33(11)).

OK-17, outcrop near the reservoir between Oozuku and Shimo-oyakebaru, Tamagusuku-son, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26 °9'20"N, 127 °46'05"E)

Yonabaru Formation

Early Pliocene

***Globocassidulina tsuchidai* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 70, Pl. 2, figs. 4a-c.

Holotype: IGPS no. 97215A, Paratype: IGPS no. 97215B (unfigured).

MU-5, a small outcrop at Shiromeguri, 1900 m W of Ofuna Railway Station, Kamakura City, Kanagawa Pref., Japan (35 °21'12"N, 139 °30'49"E)

Ofuna Formation

***Globocassidulina venustus* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 60, Pl. 1, figs. 7a-c.

Holotype: IGPS no. 97224, Paratype: IGPS no. 97225 (unfigured).

MU-1, sea-side cliff on Tokyo Bay, Nojima-machi, Kanazawa-ku, Yokohama City, Kanagawa Pref., Japan (35 °19'32"N, 139 °38'28"E)

Nojima Formation

***Globogyroidina boninensis* Kaiho, 1992**

Proc. ODP, Sci. Results, v. 126, 302, Pl. 8, figs. 9a-c.

Holotype: IGPS no. 101187, Paratypes: IGPS nos. 101188-101191.

ODP Hole 790A, at the depth 2221.7 m, Sumisu Rift, NW Pacific; (30 °54.95'N, 139 °50.66'E)

ODP 790A-2H-3, 98-100 cm

Quaternary

***Goesella iizukae* Takayanagi, 1955**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 45, 50, Figs. 25a, b.

Holotype: IGPS no. 67148.

K-15, Matsukawaura, Soma City, Fukushima Pref., Japan (37 °47'36"N, 141 °48'08"E)

Recent

***Goesella schencki* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 4, 2, Figs. 11-13.

Holotype: IGPS no. 66156.

Ni-19, Kawaya, Minamoto-mura (Kawadani, Yoshikawa-machi), Naka-kubiki-gun, Niigata Pref., Japan (37 °12.0'N, 138 °31.0'E)

Shiia Formation

Miocene

***Guttulina asanoi* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 191, Text-figs. 4a, b.

Holotype: IGPS no. 65519.

Cliff, 300 m NE of Habiro, Kamikawa-Ouchi-mura (Habiro, Ouchi-machi), Yuri-gun, Akita Pref., Japan

Sugota Formation

Middle Miocene

***Guttulina ikebei* Chiji, 1961**

Osaka Mus. Nat. Hist., Bull., no. 14, 76, Pl. 1, fig. 2.

Holotype: OMNH Reg. No. F7870F

A bluff at the hamlet of Sugata, Himi City, Toyama Pref., Japan
Sugata Mudstone (Sugata Formation)
Middle Miocene

***Guttulina kishinouyei* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 40, Pl. 8, figs. 5, 6.
Holotype: U.S.N.M. 11234, Paratype: Univ. Tokyo (unfigured).
Natsukawa, province of Echigo (Kabazaki, Kitajo, Kashiwazaki
City/Kariwa-gun, Niigata Pref.), Japan
Late Pliocene

***Guttulina orientalis* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 15, Pl. 2, fig. 1.
Holotype: Univ. Tokyo. (not numbered).
A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane,
Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N,
138 °16.7'E)
Sawane Formation
Pliocene

***Guttulina (Pyrulina) reticulosa* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 69, Pl. 15, fig. 1.
Holotype: U.S.N.M. 20312.
Albatross Station 4882, Blake Reef off Nagada Saki Lighthouse,
Japan
Water depth: 248 fathoms
Recent

***Guttulina takayanagii* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 120, Pl.
8, figs. 5a-d.
Holotype: IGPS no. 98083.
Sample SNT08, Penkeopirarukazawa, N of Hobetsu, (Panke-
opirarukazawa, Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido,
Japan
Poronai Formation
Late Eocene

***Guttulina tikutoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 138, Pl. 11, fig. 5.
Holotype: IGPS no. 60866.
Taiko, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan
(Formosa)
Lower Byoritu beds
Tertiary

***Guttulina yabei* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 68, Pl. 13, fig. 2; Pl.
14, fig. 6.
Holotype: Univ. Tokyo. (not numbered).
A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane,
Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N,
138 °16.7'E)
Sawane Formation

Pliocene

***Guttulina yabei* var. *ovale* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 68, Pl. 13, fig. 3; Pl.
14, fig. 7.
Holotype: (unknown).
A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane,
Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N,
138 °16.7'E)
Sawane Formation
Pliocene

***Guttulina yamazakii* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 40, Pl. 8, figs. 3, 4.
Holotype: U.S.N.M. 20950.
Albatross Station D4807, off Cape Tsiuka, Japan.
Water depth: 44 fathoms
Recent

***Gyroidina iojimaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 59, Pl. 9, figs.
14a-c.
Holotype: IGPS no. 77196.
IGPS loc. no. Ns-4 (Takashima Coal-field), Iojima, Iojima-cho,
Nishisonogi-gun, Nagasaki Pref., Japan (32 °42.2'N, 129 °46.8'E)
Iojima Formation
Oligocene

***Gyroidina kazusaensis* Higuchi, 1965**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 60, 181, Pl. 21,
figs. 4a-c.
Holotype: (unknown).
A core at a depth of 1420 m in the well at Arakuma,
Ichinomiya-machi, Chosei-gun, Chiba Pref. (Boso Peninsula),
Japan
Katsuura Formation, Kazusa Group
Pliocene

***Gyroidina komatsui* Aoki, 1964**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 53, 167, Pl. 25,
figs. 16a-c.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68016.
A cliff along the Kurotaki River, about 700 m NW of
Godai-batake, Kazusa-machi, Kimitsu-gun (Godai-batake,
Kimitsu City), Chiba Pref. (Boso Peninsula), Japan
Kiyosumi Formation (lower part)
Late Miocene

***Gyroidina nipponica* Ishizaki *exigua* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 99, Pl. 17, fig. 5.
Holotype: NSM, Micropal. Coll. 983.
Along the Labuk Road on the Sandakan Peninsula, North
Boreno, Malaysia
Sandakan Formation

Miocene

***Gyroidina nipponica* Ishizaki, 1944**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 34, no. 244, 102, Pl. 3, figs. 3a-c.

Holotype: Taipei Imp. Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 ° 08.5'N, 131 ° 31.1'E)

Koonji Formation

Pliocene

***Gyroidina profunda* Aoki, 1964**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 53, 167, Pl. 25, figs. 17a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68017.

A cliff along the Yoro River, 0.5 km H785S of the Yoro-Keikoku Station, Kamo-mura, Ichihara-gun (Ichihara City), Chiba Pref. (Boso Peninsula), Japan

Kiyosumi Formation (upper part)

Early Pleistocene

***Gyroidina sakasegawaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 67, Pl. 10, figs. 19a, b.

Holotype: IGPS no. 77212.

IGPS loc. no. K, Oshima, Oninoike-mura, (Oshima, Itsuwa-machi) Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands, Japan (32 ° 32.3'N, 130 ° 11.0'E)

Sakasegawa Formation (upper part)

Eocene

***Gyroidina suturalis* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 98, Pl. 14, fig. 8.

Holotype: NSM, Micropal. Coll. 984, Paratype: NSM, Micropal. Coll. 985 (Pl. 14, fig. 9).

Along the Labuk Road on the Sandakan Peninsula, North Boreno, Malaysia

Sandakan Formation

Miocene

***Gyroidina tainanensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 91, Pl. 6, figs. 3a-c.

Holotype: IGPS no. 63731.

Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)

Kansirei Group

Late Tertiary

***Gyroidinoides kawagatai* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 73, Pl. 14, figs. 3a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 14, fig. 4).

Okean grab sample RN88-OK10, just south of Ishigaki Island, Okinawa Pref., Japan (24 ° 37.2'N, 125 ° 37.1'E)

Water depth: 694 m

Recent

***Gyroidinoides kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 150, Pl. 21, fig. 2a.

Holotype: ESK F-11356.

St. 80, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 ° 25.5'N, 130 ° 37.8'E)

Water depth: 225 m

Recent

***Gyroidinoides kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 150, Pl. 21, fig. 2b.

Paratype: ESK F-11357.

St. 81, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 ° 25.9'N, 130 ° 39.9'E)

Water depth: 220 m

Recent

***Gyroidinoides kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 150, Pl. 21, fig. 2c.

Paratype: ESK F-11358.

St. 103, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 ° 17.9'N, 130 ° 44.6'E)

Water depth: 175 m

Recent

***Gyroidinoides shinjiensis* Nomura, 1986**

Geol. Soc. Japan, Jour., v. 92, no. 7, 473, Figs. 11a-c.

Holotype: DESS 84017(1), Paratype: DESS 84017(2) (Pl. 2, fig. 21).

TD22, Tadaura, Hirata City, Shimane Pref., Japan

Josoji Formation

Middle Miocene

***Gyroidinoides yokoyamai* Ujiie & Watanabe, 1960**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), no. 63, 134, Pl. 3, figs. 7, 8, 8.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50703, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50666.

Kami-ashibetsu, Ashibetsu City (northern Ishikari Coal-field), Hokkaido, Japan

Poronai Formation

Eocene

***Hanzawaia hamadaensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 13, 16, Figs. 21-23.

Holotype: IGPS no. 67118.

A sea-cliff at Hamada, Tanabu-machi, Shimokita-gun (Hamada, Yokohama-machi, Kamikita-gun), Aomori Pref., Japan (41 ° 08.0'N, 141 ° 16.6'E)

Hamada Formation

Pliocene

***Hanzawaia nipponica* Asano, 1944**

Geol. Soc. Japan, Jour., v. 51, no. 606, Pl. 4(1), figs. 1a, b.
 Holotype: IGPS no. 66016, Paratype: (Pl. 4(1), figs. 2a, b)
 Road cutting near Yamaguchi, Kakio, (Manpukuji, Asao-ku),
 Kawasaki City, Kanagawa Pref., Japan (35°36.1'N, 139°30.2'E)
 Kakio Formation
 Pliocene

***Hanzawaia oshimaensis* Murata, 1959**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 5, 46, Pl. 2, figs. 23a-c.
 Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 11.
 Loc. no. OM SM-NI-10, Nishiwatauchi Well in the Oshima
 Island, Nagasaki Pref., Japan
 Okuura Formation
 Oligocene

***Hanzawaia sumitomoii* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 52, Pl. 8, figs. 22a-c.
 Holotype: IGPS no. 77180.
 IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze,
 Minamihata-cho, Imari City, Saga Pref., Japan (33°19.7'N, 129°55.8'E)
 Kishima Formation
 Oligocene

***Hanzawaia tagaensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 430, Fig. 2, nos. 30-32.
 Holotype: IGPS no. 67047, Paratype: (Fig. 2, nos. 28-29)
 Road-side cutting at Kokozura, (Nakoso-machi, Ishiki-gun
 (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref.,
 Japan (36°51.5'N, 140°48.0'E)
 Kokozura Formation
 Middle Miocene

***Haplophragmoides amakusaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 61, Pl. 11, figs. 8a, b.
 Holotype: IGPS no. 77199, Paratype: (Pl. 12, fig. 17)
 No. K, Oshima, Oninoike-mura (Oshima, Itsuwa-machi),
 Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands),
 Japan (32°32.3'N, 130°11.0'E)
 Sakasegawa Formation (upper part)
 Eocene

***Haplophragmoides apertiumbolicatus* Kaiho, 1986**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 56, no. 1, 41.
 Holotype: IGPS no. 98019.
 Sample PRN08, Mikasaporonai River, Mikasa City, Hokkaido,
 Japan
 Poronai Formation

Late Eocene

(New name for *Haplophragmoides umbilicatus* Kaiho, 1984.)***Haplophragmoides bradyi* (Robertson) *hokkaidoensis* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 384, Pl. 18, figs. 7a, b.
 Holotype: Fac. Tech., Univ, Tokyo, TU1001.
 St. 10 off Noboribetsu, Hokkaido, NW Pacific Ocean (42°25'37"N, 141°18'15"E)
 Water depth: 80 m
 Recent

***Haplophragmoides bradyi* (Robertson) *niigataensis* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 385, Pl. 18, figs. 6a, b.
 Holotype: Fac. Tech., Univ, Tokyo, TU1003.
 St. 76, off the mouth of the River Shinano, Niigata Pref., Japan
 Sea (18°33.2'N, 138°9'28.3"E)
 Water depth: 65 m
 Recent

***Haplophragmoides crassiformis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 114, Pl. 7, figs. 3a, b.
 Holotype: IGPS no. 98015.
 Sample SRR11, Shirirruomappu River, Tomino Yubari City,
 Hokkaido, Japan
 Poronai Formation
 Late Eocene

***Haplophragmoides kushiroensis* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 30, Pl. 1, figs. 9a, b.
 Holotype: IGPS no. 77252A, Paratype: IGPS no. 77252B (Pl. 1, figs. 8a, b).
 530 m in depth of the boring core at Ponnuri-sawa,
 Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan
 Omagari Formation
 Eocene

***Haplophragmoides renzi* Asano, 1950**

Cushman Found. Foram. Res., Contr., v. 1, pts. 3-4, 77, Pl. 12, figs. 3a-c.
 Holotype: IGPS no. 66195.
 IGPS loc. no. Ni-19, Kawaya, Minamoto-mura (Kawadani,
 Yoshikawa-machi), Naka-kubiki-gun, Niigata Pref., Japan (37°12.0'N, 138°31.0'E)
 Shiiya Formation
 Miocene

***Haplophragmoides shikiyamaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 61, Pl. 12, figs.

- 18a, b.
Holotype: IGPS no. 77200.
IGPS loc. no. Ku, About 1 km W of Kanyama, Itchoda-mura (Kanyama, Kawaura-machi), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°29.5'N, 130°20.0'E)
Kyoragi Formation (=Shikiyama Formation)
Eocene
- Haplophragmoides sintikuensis* Nakamura, 1937**
Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 133, Pl. 10, figs. 2a, b.
Holotype: IGPS no. 60853.
Daimaho, Sinpo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)
Upper Byoritu beds
Tertiary
- Haplophragmoides subamakusaensis* Fukuta, 1962**
Geol. Survey Japan, Rep., no. 194, 9, Text-fig. 2; Pl. 1, fig. 7.
Holotype: UMUT CF 58007, Paratypes: UMUT CF 58006, 58008-58010 (Pl. 1, figs. 6, 8-10).
Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°29'39"N, 130°6'21"E)
Kyoragi beds (about 50 m. below the top), Hondo Group
Middle Eocene
- Haplophragmoides subevolutus* Kaiho, 1984**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 114, Pl. 7, figs. 7a, b.
Holotype: IGPS no. 98017.
Sample PRN02, Mikasaporonai River, Mikasa City, Hokkaido, Japan
Poronai Formation
Late Eocene
- Haplophragmoides subtrullissatus* Parr *evolutus* Konda, 1985**
In Shiki, ed., Geology of the northern Philippine Sea, 146, Pl. 1, figs. 9a, b.
Holotype: OMNH Reg. No. F17803F
Gravity core GDP-1-5-(1), at water depth 5940 m, eastern slope of Japan Trench, E of Hachijo Island, Japan (33°28.5'N, 142°42.5'E)
Water depth: 5940 m (top 5 cm of the core)
Holocene
(Given as *Haplophragmoides subtrullissatum* Parr *evolutum* by the author.)
- Haplophragmoides taiwanensis* Nakamura, 1937**
Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 134, Pl. 10, figs. 3a, b.
Holotype: IGPS no. 60854.
Well No. 3 of the Taiwan Mining Co., Tikuto oilfields, northern Taiwan (Formosa)
Lower Byoritu beds (about 245.15-245.65 m in depth)
- Tertiary
- Haplophragmoides tanaii* Kaiho, 1984**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 115, Pl. 7, figs. 5a, b.
Holotype: IGPS no. 98018.
Sample PRN02, Mikasaporonai River, Mikasa City, Hokkaido, Japan
Poronai Formation
Late Eocene
- Haplophragmoides umbilicatus* Kaiho, 1984**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 115, Pl. 7, figs. 6a, b.
Holotype: IGPS no. 98019.
Sample PRN08, Mikasaporonai River, Mikasa City, Hokkaido, Japan
Poronai Formation
Late Eocene
- (*nom. nud.* owing to junior homonym of *Haplophragmoides umbilicatus* Pearcey, 1914. New name has been given as *Haplophragmoides apertiumbilicatus* by Kaiho, 1986.)
- Haplophragmoides yokoyamai* Kaiho, 1984**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 116, Pl. 7, figs. 4a, b.
Holotype: IGPS no. 98020.
Sample KUM39, Kumanosawa, Yubari City, Hokkaido, Japan
Poronai Formation
Late Eocene
- Hastilina subtenuis* Nomura, 1983**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 83, Pl. 2, figs. 14a-c.
Holotype: IGPS no. 97235.
OK-10, road-side outcrop, about 150 m NE of Tomori, Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26°7'57"N, 127°43'54"E)
Yonabaru Formation (upper part)
Early Pliocene
- Hastilina virga* Nomura, 1983**
Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 84, Pl. 2, figs. 15a-c.
Holotype: IGPS no. 97236A, Paratype: IGPS no. 97236B (unfigured).
OK-1, outcrop, about 500 m N of Kochinda-cho, Shimajiri-gun, Okinawa Pref. (Okinawa Island), Japan (26°9'21"N, 127°43'26"E)
Yonabaru Formation (middle part)
Early Pliocene
- Hemicristellaria amakusaensis* Fukuta, 1962**
Geol. Survey Japan, Rep., no. 194, 22, Text-figs. 8a, b; Pl. 6, fig.

1.

Holotype: UMUT CF 58084, Paratype: UMUT CF 58085 (Pl. 6, fig. 2).

Take, Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °29'39"N, 130 °6'21"E)

Kyoragi beds (about 50 m. below the top, Hondo Group Middle Eocene

***Hemicristellaria gotoensis* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 11, Pl. 3, fig. 8.

Holotype: IGPS no. 66058.

Soyo-maru St. no. 431, S of Goto Islands, Japan Sea

Water depth: 152 m

Recent

***Hemicristellaria hanzawai* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 10, Pl. 3, fig. 4.

Holotype: IGPS no. 66054.

Soyo-maru St. no. 300, Ariake Bay, Japan

Water depth: 110 m

Recent

***Hemicristellaria karatsuensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 53, Pl. 8, fig. 5.

Holotype: IGPS no. 77183, Paratype: (Pl. 8, fig. 4)

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Hemicristellaria okinoshimaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 57, Pl. 9, fig. 1.

Holotype: IGPS no. 77190, Paratype: (Pl. 9, fig. 2)

IGPS loc. no. Ns-3 (Takashima Coal-field), Okinoshima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32 °41.5'N, 129 °46.8'E)

Okinoshima Formation

Eocene

***Hemicristellaria tosaensis* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 11, Pl. 3, fig. 5.

Holotype: IGPS no. 66055.

Soyo-maru St. no. 226, Tosa Bay

Water depth: 223 m

Recent

***Hemicristellaria tsushimaensis* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 11, Pl. 4, fig. 8.

Holotype: IGPS no. 66079.

Soyo-maru St. no. 198, off Shima Peninsula, Mie Pref., Japan

Water depth: 168 m

Recent

***Heronallenia oinomikadoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 114, Pl. 44, figs. 6a, b.

Holotype: IGPS no. 85278.

Funakawa-machi, Minamiakita-gun (Oga City), Akita Pref. (Oga Peninsula), Japan

Wakimoto Formation

late Miocene or Early Pliocene (Early Pleistocene)

***Heronallenia otukai* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 39, Pl. 3, figs. 5a, b.

Holotype: UMUT CF 3008.

Loc. I-476, Nakano, Kamitaki-mura (Nakano, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35 °17.0'N, 140 °16.2'E)

Umegase Formation

Pliocene

***Heronallenia stellata* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 33, Pl. 4, figs. 13a-c.

Holotype: IGPS no. 67143.

North cliff of Ananai Station, Ananai-mura, Aki-gun (Ananai, Aki City), Kochi Pref., Japan (33 °30'10"N, 133 °51'21"E)

Ananai Formation

Pliocene

***Heterolepa poronaiensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 128, Pl. 11, fig. 5.

Holotype: IGPS no. 98181, Paratype: IGPS no. 98182 (Pl. 11, fig. 7).

Sample PRN01, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation (basal part)

Late Eocene

***Hoeglundina asanoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 114, Pl. 46, figs. 7a-c.

Holotype: IGPS no. 77260.

Inagawa, Nishigoshi-mura (Inagawa, Izumozaki-machi), Santo-gun, Niigata Pref., Japan

Haizume Formation

Pliocene

***Hopkinsina imogawaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 112, Pl. 42, figs. 3a, b.

Holotype: IGPS no. 85253.

Kitaimogawa, Morimachi-mura (Kitaimogawa, Shitada-mura), Minamikanbara-gun, Niigata Pref., Japan

Nanatani Formation

Middle Miocene

***Hopkinsina kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 120, Pl. 12, fig. 7a.

Holotype: ESK F-9403.

St. 92, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °21.9'N, 130 °42.6'E)

Water depth: 185 m

Recent

***Hopkinsina kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 120, Pl. 12, fig. 7b.

Paratype: ESK F-9404.

St. 102, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °18.6'N, 130 °42.3'E)

Water depth: 162 m

Recent

***Hopkinsina kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 120, Pl. 12, fig. 7c.

Paratype: ESK F-9405.

St. 139, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °9.0'N, 130 °40.5'E)

Water depth: 105 m

Recent

***Hopkinsina morimachiensis* Matsunaga *umedaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 112, Pl. 42, figs. 5a, b.

Holotype: IGPS no. 85255.

A core at 1363 m in depth of Umeda R-2 Well of Teikoku Oil Company, Umeda, Nishigoshi-mura (Umeda, Izumozaki-machi), Santo-gun, Niigata Pref., Japan

Shiia Formation

Middle Miocene

***Hopkinsina morimachiensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 112, Pl. 42, figs. 4a, b.

Holotype: IGPS no. 85254.

Kitaimogawa, Morimachi-mura (Kitaimogawa, Shitada-mura), Minamikanbara-gun, Niigata Pref., Japan

Nanatani Formation

Middle Miocene

***Hopkinsina nanataniensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 113, Pl. 42, figs. 6a, b.

Holotype: IGPS no. 85256.

A core at 607 m in depth of Kitakaji R-2 Well of Teikoku Oil Company, Kaji-mura, Kitakanbara-gun, Niigata Pref., Japan

Nanatani Formation

***Hopkinsina shinboi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 113, Pl. 42, figs. 7a, b.

Holotype: IGPS no. 85257.

A core at 607 m in depth of Kitakaji R-2 Well of Teikoku Oil Company, Kaji-mura, Kitakanbara-gun, Niigata Pref., Japan

Nanatani Formation

***Hopkinsina wakimotoensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 2, 19, Fig. 88.

Holotype: IGPS no. 66944, Paratypes: (Figs. 89, 90).

A cliff at Oibanazaki, Wakimoto-mura, Minami-akita-gun (Oibanazaki, Oga City), Akita Pref. (Oga Peninsula), Japan (39 °53.7'N, 139 °53.6'E)

Wakimoto Formation

Pliocene

***Hyalinea inflata* Ujiie & Kusukawa, 1969**

Natl. Sci. Mus., (Tokyo), Bull., v. 12, no. 3, 767, Pl. 2, fig. 1.

Holotype: NSMP1 7244, Paratypes: NSMP1 7245 & 7246 (Pl. 2, figs. 2, 3).

Station 617, northern end of Miyako Bay, Iwate Pref., Japan

Water depth: 60 m

Recent

***Hyperammia squamosa* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 55, Pl. 1, figs. 10a, b.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 1, fig. 9).

Multiple core KT93-8 MC1 at western margin of middle Okinawa Trough (28 °30.6'N, 127 °20.4'E)

Water depth: 1090 m

Recent

***Islandiella compressa* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, p. 1-101, 49, Pl. 1, figs. 1a-c.

Holotype: IGPS no. 97167.

ST-2, road-side outcrop, Maruyama, Tshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °28'30"N, 140 °12'04"E)

Hanaishi Conglomerate Member, Setana Formation

***Karrieriella baccata* (Schwager) japonica Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 90, Pl. 10, figs. 1a-c.

Holotype: IGPS no. 21448.

Loc. 152, 200 m W of Maruyama, Tshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (32 °24.0'N, 139 °55.8'E)

Setana Formation

Pliocene

***Karreriella baccata* (Schwager) japonica Asano, 1938**

Illust. Cat. Japan. Small. Foram., pt. 4, 3, Figs. 14, 15.

Neotype: IGPS no. 66157.

Loc. 152, 200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (32 °24.0'N, 139 °5.8'E)

Setana Formation

Pliocene

(Holotype (IGPS no. 21448; Asano, 1938, Pl. 10, figs. 1a-c) was lost. Neotype has been designated by the same author.)

***Karreriella tanabensis* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 383, Pl. 39, figs. 3a, b.

Holotype: IGMSH coll. (not numbered).

Road cliff at Mori, Tanabe City, Wakayama Pref., Japan

Asso Formation

Miocene

***Lagena asanoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 107, Pl. 31, fig. 5.

Holotype: IGPS no. 85385.

Osawa, Hashida-mura, Nakakanbara-gun, Niigata Pref., Japan

Osawa alternation

Neogene

***Lagena bispina* Hada, 1936**

Sapporo Nat. Hist. Soc., Trans., v. 14, pt. 2, 243, Figs. 3a, b.

Holotype: (unknown).

Off Akkeshi Bay, eastern Hokkaido, Japan

Water depth: 55 m

Recent

***Lagena compressa* Hada, 1936**

Sapporo Nat. Hist. Soc., Trans., v. 14, pt. 2, 242, Figs. 1a, b.

Holotype: (unknown).

At Suribachi, Paramushir Island, Kurile Islands

Water depth: 15 m

Recent

***Lagena cucurbita* Hada, 1936**

Sapporo Nat. Hist. Soc., Trans., v. 14, pt. 2, 244, Fig. 5.

Holotype: (unknown).

Lake Hijirippu, brackish lake situated between Akkeshi and Hamanaka Bays, eastern Hokkaido, Japan

Water depth: 3 m

Recent

***Lagena curta* Hada, 1936**

Sapporo Nat. Hist. Soc., Trans., v. 14, pt. 2, 243, Figs. 2a, b.

Holotype: (unknown).

Off Akkeshi Bay, eastern Hokkaido, Japan

Water depth: 55 m

Recent

***Lagena gottschei* Yokoyama, 1890**

Palaeontographica, v. 36, 188, Pl. 24, figs. 1a, b.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Lagena hyugaensis* Oinomikado, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 578, 518, Figs. 2a, b.

Holotype: Kyushu Imp. Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 °08.5'N, 131 °31.1'E)

Koonji Formation

Pliocene

***Lagena intermedia* Hada, 1936**

Sapporo Nat. Hist. Soc., Trans., v. 14, pt. 2, 244, Fig. 4.

Holotype: (unknown).

Off Hamanaka Bay, eastern Hokkaido, Japan

Water depth: 42 m

Recent

***Lagena pliocenica* Cushman & Gray tokiokai Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, p.387, Pl. 18, figs. 10a, b.

Holotype: Fac. Tech., Univ. Tokyo, TU1007.

St. 24, off the mouth of the River Shinano, Niigata Pref., Japan Sea (38 °45.3'N, 139 °17'33.1"E)

Water depth: 39 m

Recent

***Lagena quadricostata* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 17, Pl. 4, fig. 12.

Holotype: NSM, Micropal. Coll. (not numbered).

341-343 cm in depth of Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

Late Pleistocene

***Lagena semilineata satsumaensis* Oki & Yamamoto, 1992**

Centenary of Japan Japan. Micropal., 193, Fig. 4-3a.

Holotype: ESK F-11704, Paratype: ESK F-11705 (Fig. 4-3b).

Loc. B, a well at a rice field at Shirakawa-nishi, Shirakawa, Kinpo-cho, Kagoshima Pref. Japan

Shirakawa Formation

middle Middle Quaternary (B-1: 44 m in depth, 9 m below the sea level)

(Reg. No. erroneously described as F-9554, but corrected by the original authors (per. comm.))

***Lagena sparsicostata* Ujiie, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 82, Pl. 1, fig. 6.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50224,

Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50223
(Pl. 1, figs. 7a, b).

Loc. C, Shibaoka, Minano-machi, Chichibu-gun, Saitama Pref.,
Japan

Nenokami Formation

Early Miocene

***Lagena subamphora* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 38, Pl. 5, fig.
23.

Holotype: IGPS no. 61742.

Soyo-maru St. no. 548, Wakasa Bay, Japan Sea

Water depth: 201 m

Recent

***Lagena subamphora* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 38, Pl. 5, fig.
24.

Paratype: IGPS no. 66743.

Soyo-maru St. no. 368, off Shima Peninsula, Mie Pref., Japan

Water depth: 600 m

Recent

***Lagena subamphora* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 38, Pl. 5, fig.
25.

Paratype: IGPS no. 66744.

Soyo-maru St. no. 12, off Inubo-zaki, Chiba Pref., Japan

Water depth: 325 m

Recent

***Lagena tricaritortuosa* Ujiie, Ichikura and Kurihara, 1983**

Natl. Sci. Mus., (Tokyo), Bull., Ser. C (Geol. & Paleontol.), v. 9,
no. 2, 54, Pl. 2, figs. 7-9.

Holotype: NSM, Micropal. Coll. (not numbered).

Oki Bank, southern Japan Sea (36 °57'N, 134 °32.5'E)

Core RC12-378

Holocene

***Lagenammima kagoshimaensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 66, Pl. 1, fig. 2a.

Holotype: ESK F-7039, Paratype: ESK F-7040 (Pl. 1, fig. 2b).

St. 12, Kagoshima Bay, Kagoshima Pref., Japan (31 °41.5'N,
130 °45.7'E)

Water depth: 122 m

Recent

***Lagenammima kagoshimaensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 66, Pl. 1, fig. 2c.

Paratype: ESK F-7041.

St. 113, Kagoshima Bay, Kagoshima Pref., Japan (31 °15.0'N,

130 °44.5'E)

Water depth: 100 m

Recent

***Lagenonodosaria fukushimaensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 426, Fig. 1, no. 4.

Holotype: IGPS no. 67042, Paratypes: (Fig. 1, nos. 5-11, 20, 21)

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun
(Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref.,
Japan (36 °51.5'N, 140 °48.0'E)

Kokozura Formation

Middle Miocene

***Lagenonodosaria scalaris* (Batsch) sagamiensis Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 613, Pl. 30, fig. 6.

Holotype: IGPS no. 21367A, Paratype: IGPS no. 21367C (Pl. 30,
fig. 7).

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref.,
Japan (35 °20.2'N, 139 °30.2'E)

Tomioka beds

Pliocene

***Lagenonodosaria suzuki* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 509, Pl. 10, fig. 31.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50107.

Cliff of the Ubugasawa River, Uchinobaba, Koori-machi,
Date-gun, Fukushima Pref., Japan

Date Formation

Miocene

***Lagenonodosaria tubulata* (Koch) var. *japonica* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 371, Pl. 5, figs. 6a, b.

Holotype: UMUT CF 3025.

Hachimanyama, Uzo, Utsunomiya City, Tochigi Pref., Japan

Terayama Group

Late Miocene

(Erronously given as *Lagenodosaria tubulata* (Koch) var.
japonica by the author.)

***Lenticulina asanoi* Tai, 1954**

Hiroshima Univ., Jour. Sci., Ser. C, v. 1, no. 4, 20, Pl. 1, figs. 1a,
b.

Holotype: IGSH coll. cat. no., T.Y.2.

Northern cliff of Yoshino Primary School, Yoshino-mura
(Yoshino, Sho-ou-cho), Katsuta-gun, Okayama Pref.

Katsuta Formation

Miocene

***Lenticulina asanoi* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 88, Pl. 15, fig. 5.

Holotype: NSM, Micropal. Coll. 994, Paratype: NSM, Micropal.
Coll. 995 (Pl. 15, fig. 6).

Along the Labuk Road on the Sandakan Peninsula, North
Boreno, Malaysia

Sandakan Formation

Miocene

(*nom. nud.* owing to junior homonym of *Lenticulina asanoi* Tai, 1954.)

***Lenticulina fukushimaensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 476, Fig. 2, no. 3a, b.

Holotype: IGPS no. 67032.

500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun (Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan

Asagai Formation

Oligocene

***Lenticulina huziokai* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 191, Text-figs. 2a, b.

Holotype: IGPS no. 65517.

Cliff, 400 m N of Takinoue, Yazawagi-mura, Hiraga-gun, Akita Pref., Japan

Sugota Formation

Middle Miocene

***Lenticulina ishikariensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 118, Pl. 7, figs. 14a, b.

Holotype: IGPS no. 98064.

Sample SKS07, Kurukitomarizawa, SE of Momijiyama, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Lenticulina japonica* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 328, Pl. 37, figs. 7a, b.

Holotype: IGPS no. 21378A.

100 m E of Kamiyashiki, Taruki-mura, Ogasa-gun (Kamiyashiki, Kakegawa City), Shizuoka Pref., Japan (34 °47.5'N, 138 °10.0'E)

Daiichi sand

Pliocene

***Lenticulina kakegawaensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 329, Pl. 37, figs. 6a, b.

Holotype: IGPS no. 21379.

Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation

Pliocene

***Lenticulina kamakuraensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 612, Pl. 31, figs. 1a, b.

Holotype: IGPS no. 21366A.

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref.,

Japan (35 °20.2'N, 139 °30.2'E)

Tomioka beds (Tomioka Formation)

Pliocene

***Lenticulina moniwaensis* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 520, 32, Figs. 1a, b.

Holotype: IGPS no. 21401.

Saboyama, Oide-mura, Natori-gun (Saboyama, Taihaku-ku, Sendai City), Miyagi Pref., Japan (38 °14.3'N, 140 °48.8'E)

Moniwa Formation (Hatatate Formation)

Miocene

***Lenticulina morishimai* Inoue & Nakaseko, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 664, 10, Figs. 3a, b.

Holotype: Geol. Inst. Kyoto Univ.(?)

500 m S of Yoshihama, Sakuma-mura (Yoshihama, Kyonan-machi), Awa-gun, Chiba Pref. (Boso Peninsula), Japan

(35 °07.5'N, 139 °50.5'E)

Sakuma Formation

Miocene

***Lenticulina sintikuensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 137, Pl. 11, figs. 1a, b.

Holotype: IGPS no. 60863.

Hoppo, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds (lowest part)

Tertiary

***Lenticulina totomiensis* Makiyama, 1931**

Kyoto Imp. Univ., Coll. Sci., Mem., ser. B, v. 7, no. 1, 51, Pl. 2, figs. 12, 14, 15 .

Holotype: Geol. Inst. Kyoto Univ.(?)

Loc. 307, Shimomata, Kakegawa-machi, Ogasa-gun (Shimomata, Kakegawa City), Shizuoka Pref., Japan (34 °46.3'N, 138 °01.2'E)

Kechienji Formation, Kakegawa Group

Pliocene

***Lernella ogasawarai* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 88, Pl. 2, figs. 8a, b.

Holotype: IGPS no. 97241A.

OK-13, outcrop, about 100 m W of Gushichan, Gushikami-son, Shimajiri-gun, , Okinawa Pref. (Okinawa Island), Japan (26 ° 7'16"N, 127 °44'46"E)

Shinzato Formation

Pliocene

***Lingulina fugeshiensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 12, Pl. 1, figs. 38a, b.

Holotype: IGPS no. 75262.

IGPS loc. no. Iw-14, Ishii, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 °22.0'N, 137 °06.2'E)
Higashi-innai Formation
Miocene

***Lingulina kansireiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 92, Pl. 6, figs. 4a, b.
Holotype: IGPS no. 63738.
Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
Unsui group (lowest part)
Late Tertiary

***Lingulina sirakawaensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 92, Pl. 6, figs. 5a, b.
Holotype: IGPS no. 63739.
Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
Unsui group (lowest part)
Late Tertiary

***Listerella bradyana* Cushman var. *tarukiensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 326, Pl. 36, fig. 6.
Holotype: IGPS no. 21333A, Paratype: IGPS no. 21333B (Pl. 36, fig. 5).
Kamiasiki, Taruki-mura, Ogasa-gun (Kamiasiki, Kakegawa City), Shizuoka Pref., Japan (34 °47.5'N, 138 °10.0'E)
Dainichi sand
Late Pliocene

***Lituotuba? eocenica* Yabe, 1921**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 5, no. 4, 100, Pl. 16, fig. 9.
Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Southwestern coast of Haha-jima (Hillsborough Island), Ogasawara (Bonin Islands), Tokyo, Japan
Calcareous tuff
Eocene

***Loxostoma amygdalaeforme* (Brady) *iokiense* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 605, Pl. 16(5), figs. 3a, b.
Holotype: IGPS no. 21426.
A river cliff at the shrine, Ioki, Ioki-mura, Aki-gun (Ioki, Aki City), Kōti Pref., Japan (33 °29.4'N, 135 °56.1'E)
Konomine Formation
Pliocene

***Loxostoma etigoense* Oinomikado, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 569, 86, Figs. 1a, b.
Holotype: (unknown).
Osawa quarry, Okambara-mura, Nakakambara-gun, Niigata Pref., Japan (37 °41.0'N, 139 °06.0'E)

Osawa Formation
Pliocene

***Loxostoma indopacifica* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 122, Pl. 17(1), fig. 11.
Holotype: IGPS no. 21405.
St. 1, Bodjong, Bantam, West Java, Indonesia
Formation VI
Pliocene

***Loxostomum koikei* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 35, Pl. 3, figs. 6a-c.
Holotype: UMUT CF 3013.
Loc. 11, 1000 m SWW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °16.0'N, 139 °47.9'E)
Tomiya tuffaceous sandstone (Tomiya Formation)
Pliocene

***Loxostomum ozawai* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 32, Pl. 4, figs. 11a, b.
Holotype: IGPS no. 67141.
Kitahari, Tano-cho, Aki-gun, Kochi Pref., Japan (33 °26'05"N, 134 °06'E)
Ananai Formation
Pliocene

***Marginulina ashiaensis* Murata *nakadoensis* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 81, Pl. 1, fig. 4.
Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2003.
Nakado, Itanoura-jima island, Nagasaki Pref., Japan
Nakado Formation
Early Miocene (Late Oligocene)

***Marginulina ashiaensis* Murata, 1953**

Kyushu Inst. Technol., Bull., no. 3, 6, Pl. 1, fig. 7.
Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).
Loc. MO-5, Kariomisaki, Ashiya-machi, Onaga-gun, Fukuoka Pref., Japan (33 °54'37.8"N, 130 °40'1.6"E)
Yamaga Formation (middle part; 30 m below the top), Ashiya Group
Late Oligocene

***Marginulina iojimaensis* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 81, Pl. 1, fig. 4.
Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2004.

Sandy shale exposed on the seaciff of Iojima Island, Nagasaki Pref., Japan (32 °45'54"N, 129 °45'48"E)
Iojima Formation
Early Miocene (Late Oligocene)

***Marginulina masudai* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 12, Pl. 2, fig. 6.

Holotype: IGPS no. 75285, Paratype: (Pl. 2, fig. 5)
Nishi-innai, Najimi-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 °24.5'N, 138 °58.3'E)
Higashi-innai Formation
Miocene

***Marginulina mukaei* Tai & Okamoto, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 385, Pl. 41, figs. 4a, b.

Holotype: IGMSH coll. (not numbered).
Cliff along the Hiegara River in Nojiri, S of Izumo City, Shimane Pref., Japan
Kawai Formation
Miocene

***Marginulina nozimaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 210, Pl. 28(5), fig. 29.

Holotype: IGPS no. 21478, Paratype: Inst. Geol. Paleont., Tohoku Univ. (Pl. 28(5), figs. 30, 31).
A road-side cutting at Nojimaura, Kanazawa-machi, (Nojima-machi, Kanazawa-ku), Yokohama City, Kanagawa Pref., Japan (35 °19.5'N, 139 °39.2'E)
Nojima Formation
Pliocene

***Marginulina nozimaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 210, Pl. 30(7), figs. 13, 14.

Paratypes: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Tsurihashi, Tshibetsu-mura (Tsurihashi, Imakane-cho), Setana-gun, Hokkaido, Japan
Seatana beds (Seatana Formation)
Pliocene

***Marginulina sendaiensis* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 520, 33, Fig. 6.

Holotype: IGPS no. 21402.
200 m SE of Saboyama, Oide-mura, Natori-gun (Saboyama, Taihaku-ku, Sendai City), Miyagi Pref., Japan (38 °14.3'N, 140 °48.8'E)
Moniwa Formation (Hatatate Formation)
Miocene

***Marginulina shikiyamaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 65, Pl. 12, fig. 12.

Holotype: IGPS no. 77207, Paratype: (Pl. 12, fig. 13)
No. Ku, About 1 km W of Kanyama, Itchoda-mura (Kanyama, Kawaura-machi), Amakusa-gun, Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °29.5'N, 130 °20.0'E)
Kyoragi shale (= Shikiyama Formation)
Eocene

***Marginulina uedai* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 210, Pl. 27(4), fig. 8.

Holotype: IGPS no. 21479, Paratype: (Pl. 27(4), fig. 7)
100 m N of Hirose, Kokubu-mura (Ichiba, Miyoshi-mura), Awa-gun, Chiba Pref. (Boso Peninsula), Japan (35 °10.4'N, 139 °55.0'E)
Kiwada Formation
Pliocene

***Marginulina utsunomiyensis* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 370, Pl. 5, figs. 5a-c.

Holotype: UMUT CF 3024.
Hachiman-Yama, Uzo, Utsunomiya City, Tochigi Pref., Japan
Terayama Group
Miocene

***Martinottiella communis* (d'Orbigny) hosoyaensis** Asano, 1950

Illust. Cat. Japan. Small. Foram., pt. 4, 3, Figs. 18, 19 .

Holotype: IGPS no. 66159.
Hosoya, Haranotani-mura, Ogasa-gun (Hosoya, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)
Hosoya Formation
Pliocene

***Martinottiella crassa* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 117, Pl. 7, figs. 10a-b.

Holotype: IGPS no. 98040.
Sample TUR04, Tsurunosawa, NW of Hobetsu, (Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan
Poronai Formation
Late Eocene

***Martinottiella crassa* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 117, Pl. 7, fig. 9.

Paratype: IGPS no. 98041.
Sample SNT01, Penkeopirarukazawa, N of Hobetsu, (Pankeopirarukazawa, Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan
Poronai Formation
Late Eocene

***Martinottiella rectidelicata* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 117, Pl.

7, figs. 11a, b.

Holotype: IGPS no. 98042.

Sample PKP03, Sumigamanosawa, N of Hobetsu, (Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Massilina bantamensis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 116, Pl. 17(1), figs. 7a, b.

Holotype: IGPS no. 21416.

St. 848, Tjilegong, Bantam, West Java, Indonesia

Formation VI

Pliocene

***Melonis crassus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 129, Pl. 11, figs. 6a, b.

Holotype: IGPS no. 98183.

Sample SSB02, Soshubetsu River, N of Tappu, Obira-cho, Rumoi-gun, Hokkaido, Japan

Shimokine Formation

Late Eocene

***Melonis elegans* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 129, Pl. 11, figs. 9a, b.

Holotype: IGPS no. 98184.

Sample PKP03, Sumigamanosawa, N of Hobetsu, (Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Melonis lobatus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 130, Pl. 11, figs. 10a, b.

Holotype: IGPS no. 98185.

Sample KUM23, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Melonis pygmaeus* Aoki, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70., 260, Pl. 27, figs. 3a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu. (not numbered).

River-side exposure of the Yoro River, 0.5 km NW of the Yoro-Keikoku Station, Kamo-mura, Ichihara-gun (Ichihara City), Chiba Pref. (Boso Peninsula), Japan

Umegase Formation (lower part), Kazusa Group

Early Pleistocene

***Melonis subevolatus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 130, Pl. 11, figs. 8a, b.

Holotype: IGPS no. 98188.

Sample PRN01, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation (basal part)

Late Eocene

***Miliamina echigoensis* Asano & Inomata, 1952**

Illust. Cat. Japan. Small. Foram., suple. 1, 5, Figs. 21, 22 .

Holotype: IGPS no. 75251, Paratype: (Figs. 23, 24)

Araya, Kawaguchi-mura (Araya, Kawaguchi-machi), Kitauonuma-gun, Niigata Pref., Japan (37 °18.0'N, 138 °51.6'E)

Araya Formation

Miocene

***Miliolinella kushiroensis* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 30, Pl. 1, figs. 1a, b.

Holotype: IGPS no. 77253.

210 m in depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan

Charo Formation

Eocene

***Mississippina omuraensis* Shuto, 1953**

Japanese Jour. Geol. Geogr., v. 23, 137, Figs. 8d-f.

Holotype: Sp. Reg. No. KU, N 4001.

Loc. 3, in the northwestern part of Omura Bay, Nagasaki Pref., Japan

Water depth: 20.5 m

Recent

***Murrayinella yakumoensis* Nomura, 1990**

Tran. Proc. Palaeontol. Soc. Japan, N.S., no. 158, 472, Figs. 10-2a, b.

Holotype: DESS 88001, Paratypes: DESS 88002 & 88003 (Figs. 10-4a, b, 5a, b).

MT-13 of boring core at Asakumi-cho, Matsue City, Shimane Pref., Japan

Matsue Formation

late Middle Miocene

***Neoconorbina communis* Ujiié, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 182, Pl. 32, figs. 1a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: NSM, Micropal. Coll. (Pl. 32, fig. 2).

Loc. 41, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 5 m

Recent

***Neouvigerina setosa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 169, Pl. 37, figs. 1, 7 .

Holotype: IGPS no. 99857, Paratypes: IGPS no. 99858-99861

(Pl. 37, figs. 2-5, 7).

G-77, sea cliff 1 km NW of Fukuyama, Hirara City, Miyako-jima, Okinawa Pref., Japan
Ooura Formation
Early Pliocene

***Neovigerina setosa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 169, Pl. 37, figs. 13, 15.
Paratypes: IGPS nos. 99863 & 99865.
KT85-6, G-4, Enshu-nada (34 °34.2'N, 138 °00.0'E)
Water depth: 187 m
Recent

***Neovigerina setosa* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 169, Pl. 37, figs. 12, 16 .
Paratype: IGPS no. 99862.
TS-6, Tosa Bay (33 °06.5'N, 133 °47.5'E)
Water depth: 825 m
Recent

***Neovigerina takayanagii* Jung, 1988**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 169, Pl. 37, figs. 14, 17 .
Holotype: IGPS no. 99864.
TS-6, Tosa Bay (33 °06.5'N, 133 °47.5'E)
Water depth: 825 m
Recent

***Nodobaculiella japonica* Cushman & Hanzawa, 1937**

Cushman Lab. Foram. Res., Contr., v. 13, pt. 2, 42, Pl. 5, figs. 9-11.
Holotype: Inst. Geol. Paleont., Tohoku Imp. Univ. (not numbered), Paratype: U.S.N.M. 23729.
500 m N of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Pref. (Kikai-jima), Japan
Ryukyu limestone
Pliocene or Pleistocene

***Nodosaria kokozuraensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 426, Fig. 1, no. 2.
Holotype: IGPS no. 67043.
Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan
Kokozura Formation
Middle Miocene

***Nodosaria notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 13, Pl. 2, fig. 4.
Holotype: IGPS no. 75263, Paratype: (Pl. 2, fig. 3)
IGPS loc. no. Iw-16, Gonda, Yanagida-mura, Fugeshi-gun,

Ishikawa Pref. (Noto Peninsula), Japan (37 °21.4'N, 137 °07.2'E)
Higashi-innai Formation
Miocene

***Nodosaria okinoshimaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 57, Pl. 9, fig. 4.
Holotype: IGPS no. 77189, Paratype: (Pl. 9, fig. 3)
IGPS loc. no. Ns-3 (Takashima Coal-field), Okinoshima, Iojima-cho, Nishisonogi-gun, Nagasaki Pref., Japan (32 °41.5'N, 129 °46.8'E)
Okinoshima Formation
Eocene

***Nodosaria subraphana* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 212, Pl. 29(6), fig. 19.
Holotype: IGPS no. 21480, Paratypes: (Pl. 30(7), figs. 33, 35)
600 m NE of shrine at Ono, Tano-cho, Aki-gun, Kochi Pref., Japan (33 °26.0'N, 134 °E.0'E)
Konomine Formation
Pliocene

***Nodosaria tainanensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 91, Pl. 6, figs. 2a, b.
Holotype: IGPS no. 63740.
Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
Unsui Group (lowest part)
Late Tertiary

***Nodosaria watasei* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 101, Pl. 18(2), fig. 6.
Holotype: IGPS no. 21415.
St. 396, Rantjamatjan, Batavia, West Java, Indonesia
Formation IV (middle part)
Miocene

***Nonion aimonoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 109, Pl. 37, figs. 2a, b.
Holotype: IGPS no. 85387.
Oshima-mura, Higashikubiki-gun, Niigata Pref., Japan
Haizume Formation
Pliocene

***Nonion akitaense* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 1, 1, Figs. 1, 2 .
Holotype: IGPS no. 67021.
500 m W of Dai, Babanome-mura, Minami-akita-gun, Akita Pref., Japan (39 °54.6'N, 140 °09.6'E)
Dai Formation
Pliocene

***Nonion amakusaense* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 23, Pl. 7, fig. 12.

Holotype: UMUT CF 58093, Paratypes: UMUT CF 58092 & 58094-58096 (Pl. 7, figs. 11, 13-15).

Take, Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °29'39"N, 130 °6'21"E)

Kyoragi beds (about 50 m. below the top), Hondo Group
Middle Eocene

***Nonion angulatus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 126, Pl. 11, figs. 1a, b.

Holotype: IGPS no. 98170.

Sample STNa15, Satombetsu, W of Kamicharo, Shiranuka-cho, Shiranuka-gun, Hokkaido, Japan

Nuibetsu Formation
Oligocene

***Nonion aritaense* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 54, Pl. 8, figs. 18a, b.

Holotype: IGPS no. 77185.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation
Oligocene

***Nonion boueanum* (d'Orbigny) var. *multilobum* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 371, Pl. 5, figs. 2a, b.

Holotype: UMUT CF 3019, Paratype: UMUT CF 3027 (unfigured).

Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan

Momiyama Sandstone Member, Kanuma Formation
Miocene

***Nonion ezoensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 127, Pl. 11, figs. 2a, b.

Holotype: IGPS no. 98171.

Sample PKP03, Sumigamanosawa, N of Hobetsu, (Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan

Poronai Formation
Late Eocene-Oligocene

***Nonion futagojimaense* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 82, Pl. 1, figs. 7a, b.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2005.

Black shale in the pit of the Iojima Coal Mine, Iojima Island,

Nagasaki Pref., Japan (32 °41'24"N, 129 °46'22"E)

Futagojima Formation

Early Eocene (Ypresian(?)) or lower Ulatisian

***Nonion japonicum* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 593, Pl. 15(4), figs. 1a, b.

Holotype: IGPS no. 21422, Paratype: (Pl. 15(4), figs. 2a, b)

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Naganuma Formation
Pliocene

***Nonion katayamai* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 394, Pl. 34, figs. 5a, b.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamitajiri, Takiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Haizume Formation
Pliocene

***Nonion kidoharaense* Fukuta *iwahorii* Fukuta, 1950**

Chichibu Mus., Nat. Hist., Bull., no. 1, 151, 156, Pl. 1, figs. 2a, b.

Holotype: Chichibu Museum of Natural History (not numbered).

Suganuma, Hiyoshi-mura, Toki-gun (Suganuma, Hiyoshi-machi, Mizunami City), Gifu Pref., Japan

Hiyoshi Arcose Sandstone
Miocene

***Nonion kidoharaense* Fukuta, 1950**

Chichibu Mus., Nat. Hist., Bull., no. 1, 151, 156, Pl. 1, figs. 1a, b.

Holotype: Chichibu Museum of Natural History (not numbered).

Kidohara, Takashino-mura, Chichibu-gun (Kidohara, Yamada, Chichibu City), Saitama Pref., Japan (36 °01.4'N, 139 °07.2'E)

Haraya Formation
Miocene

***Nonion kushiroense* Yoshida, 1957**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 26, 65, Text-figs. 14, 15.

Holotype: Hokkaido Gakugei Univ. no. 561257.

Sea cliff at Konbumori, Kushiro-cho, Kushiro-gun Hokkaido, Japan

Shitakara formation (middle part)
Late Eocene or lower Oligocene

***Nonion manpukuensis* Otuka, 1932**

Geol. Soc. Tokyo, Jour., v. 39, no. 469, 654, Fig. 5.

Holotype: UMUT CF 3001.

Road cutting near Manpukuji, Kakio-mura (Manpukuji, Asao-ku), Kawasaki City, Kanagawa Pref., Japan (35 °36.1'N, 139 °30.2'E)

Kakio Formation

Pliocene

***Nonion mizunamiense* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 385, Pl. 40, figs. 4a, b.

Holotype: IGMSH coll. (not numbered).

Road cliff at Togari, Akiyo-cho, Mizunami City, Gifu Pref., Japan

Yamanouchi Formation

Miocene

***Nonion nagasawaense* Matsunaga, 1963**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 18, 109, Pl. 37, figs. 7a, b.

Holotype: IGPS no. 85201.

Nagasawa-mura (Nagasawa, Funagata-machi), Mogami-gun, Yamagata Pref., Japan

Kusanagi Formation

Middle Miocene

***Nonion nakosoense* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 428, Fig. 2, nos. 14, 15.

Holotype: IGPS no. 67044, Paratype: (Fig. 2, nos. 16, 17)

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36°51.5'N, 140°48.0'E)

Kokozura Formation

Middle Miocene

***Nonion omagariense* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 31, Pl. 1, figs. 5a, b.

Holotype: IGPS no. 77255.

500 m in depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan

Omagari Formation

Eocene

***Nonion oyamai* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 395, Pl. 34, figs. 6a, b.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamitajiri, Takiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Haizume Formation

Pliocene

***Nonion pompilioides* (Fichtel & Moll) *etigoense* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 596, Pl. 15(4), figs. 10a, b.

Holotype: IGPS no. 21423.

Natsukawa-dani, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan

Natsukawa Formation

Pliocene

***Nonion pompilioides* (Fichtel & Moll) *shimokinense* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 71, Pl. 13, figs. 14a, b.

Holotype: IGPS no. 77218.

Soshubetsu valley, N of Tappu, Obira-cho, Rumoi-gun, Hokkaido, Japan (44°03.5'N, 141°51.3'E)

Shimokine sandstone (Shimokine Formation)

Oligocene

***Nonion shiribeshiense* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10, no. 3, 538, Pl. 1, figs. 3a, b.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13599.

Kaigara-sawa, Kuromatsunai-machi (Kaigarasawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Nonion shukuense* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 386, Pl. 41, figs. 1a, b.

Holotype: IGMSH coll. (not numbered).

Cutting cliff at Shuku, Hiyoshi-mura, Toki-gun (Shuku, Hiyoshi-machi, Mizunami City), Gifu Pref., Japan

Oidawara Formation

Miocene

***Nonion sorachiense* Asano var. *konbumoriense* Yoshida, 1957**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 26, 65, Text-figs. 16, 17.

Holotype: Hokkaido Gakugei Univ. no. 561258.

Sea cliff at Konbumori, Kushiro-cho, Kushiro-gun Hokkaido, Japan

Shitakara Formation (middle part).

Late Eocene or lower Oligocene

***Nonion sorachiense* Asano, 1954**

Geol. Soc. Japan, Jour., v. 60, no. 701, 48, Text-figs. 4a-c.

Holotype: IGPS no. 75293, Paratype: Inst. Geol. Paleont., Tohoku Univ. (Text-figs. 5a-c).

Sorachi River-cliff, 3 km SE of the Akabira Railway Station on the Nemuro Line, Akabira City, Hokkaido, Japan

Wakkanabe Formation

Eocene

***Nonion takayanagii* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 127, Pl. 11, figs. 3a, b.

Holotype: IGPS no. 98172.

Sample SSB03, Soshubetsu River, N of Tappu, Obira-cho, Rumoi-gun, Hokkaido, Japan

Shimokine Formation

Late Eocene

***Nonion togariense* Fukuta, 1950**

Chichibu Mus., Nat. Hist., Bull., no. 1, 151, 156, Pl. 1, figs. 3a, b.

Holotype: Chichibu Museum of Natural History (not numbered).

Togari, Akiyo-mura, Toki-gun (Togari, Akiyo-cho, Mizunami City), Gifu Pref., Japan

Togari Formation

Miocene

***Nonionella globosa* Ishiwada, 1950**

Geol. Survey Japan, Bull., v. 1, no.4, 191, Figs. 3a-c.

Holotype: Geol. Surv. Japan (not numbered).

Station 64, in the mouth of Toyama Bay, Japan Sea (37°18.6'N, 137°32.4'E)

Water depth: 633 m

Recent

***Nonionella hanzawai* Asano, 1953**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 10, 52, Figs. 4a-c.

Holotype: IGPS no. 75286.

Hamamasu, 500 m N of Soshi, Yoshino-machi (Soshi, Shintotsukawa-cho), Kabato-gun, Hokkaido, Japan (43°34.5'N, 141°43.5'E)

Wakkauenbetsu Formation

Miocene

***Nonionella higashiyamaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 110, Pl. 38, figs. 3-c.

Holotype: IGPS no. 85206.

Nobe River, Koshi-gun, Niigata Pref., Japan

Higashiyama Formation

Miocene

***Nonionella mabutii* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 31, Pl. 1, figs. 3a-c.

Holotype: IGPS no. 77256.

100 m in depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan Charo Formation

Eocene

***Nonionella pulchella* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 120, Text-figs. 791-c.

Holotype: (unknown).

Soyo-maru St. no. 45, N of Kinkazan, Miyagi Pref., Japan

Water depth: 349 m

Recent

***Nonionella umekae* Husezima & Maruhasi, 1944**

Res. Inst. Nat. Resour., Jour., v. 1, no. 3, 395, Pl. 34, figs. 7a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

No.1 of bore core at Kamitajiri, Takiri-mura, Kariha-gun (Kamitajiri, Kashiwazaki City), Niigata Pref., Japan

Haizume Formation

Pliocene

***Nouria tenuis* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 94, Text-figs. 47a, b.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Nouria textulariformis* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 93, Text-figs. 46a, b.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Oinomikadoina ogiensis* Matsunaga, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 15, 163, Text-figs. 1-3.

Holotype: Paleont. Lab., Teikoku Oil Company, Tokyo, 601450, Paratype: Paleont. Lab., Teikoku Oil Company, Tokyo, 601449 (unfigured).

Ogi, Nishigoshi-mura, Kariwa-gun (Ogi, Izumozaki-machi, Santo-gun), Niigata Pref., Japan

Haizume Formation

Pliocene

***Oolina gracilis* Ujiie, 1997**

Bull. Coll. Sci., Univ. Ryukyus, No. 63, 125, Pl. 1, figs. 1a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Core H3571, Hess Rise, N. Pacific (34°11.7'N, 179°15.4'E)

Late Pleistocene to Holocene

***Oolina oinomikadoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 107, Pl. 32, fig. 1.

Holotype: IGPS no. 85123.

Inagawa, Nishigoshi-mura (Inagawa, Izumozaki-machi), Santo-gun, Niigata Pref., Japan

Haizume Formation

Pliocene

***Oolitella irregularis* Makiyama & Nakagawa, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 572, 242, Fig. 6.

Holotype: Geol. Inst. Kyoto Univ. (not numbered).

330 m S of the Hazama Railway Station on the Shima Railway (Kintetsu-Shima Line), Kiba, Isobe-machi, Shima-gun (Shima Peninsula), Mie Pref., Japan

Pleistocene

***Orthomorphina obitsuensis* Aoki, 1964**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 53, 165, Pl. 25, fig. 3.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68003. About 300 m E of Katakura, Kazusa-machi, Kimitsu-gun (Katakura, Kimitsu City), Chiba Pref. (Boso Peninsula), Japan Kiyosumi Formation (upper part)
Late Miocene

***Pacinion minutus* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 69, Pl. 11, figs. 5a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Multiple core KT94-9 MC1 at just N of Amami-ohsima, Kagoshima Pref., Japan (28 °41.8'N, 127 °51.7'E)

Water depth: 2300 m

Recent

***Paracassidulina nabetaensis* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 98, Pl. 2, figs. 16a, b.

Holotype: IGPS no. 97406.

Beach of Nabeta, Shimoda City, Shizuoka Pref. (Izu Peninsula), Japan

Water depth: 0 m (beach sand)

Recent

***Paracassidulina nipponensis* (Eade) terebra Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, 97, Pl. 2, figs. 20a, b.

Holotype: IGPS no. 97412, Paratype: IGPS no. 97412A (unfigured).

BS-6, road-side cutting, 250 m E of Fusamoto Railway Station, Otaki-machi, Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35 °14'18"N, 140 °14'46"E)

Kiwada Formation

Early Pleistocene

***Paracassidulina quasincarinata* Nomura, 1983**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 53, no. 1, Pl. 2, figs. 19a-c.

Holotype: IGPS no. 97254A, Paratype: IGPS no. 97254B (unfigured).

MU-1, sea-side cliff on Tokyo Bay, Nojima-machi, Kanazawa-ku, Yokohama City, Kanagawa Pref., Japan (35 °19'32"N, 139 °38'28"E)

Nojima Formation

***Paracassidulina stabilis* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 45; Nomura, 1993b, p. 66, Pl. 5, figs. 16a-c (as *Paracassidulina minuta* (Cushman)).

Holotype: IGPS no. 97402.

NO-2, near Nobori, Hane-cho, Muroto City, Kochi Pref., Japan Nobori Formation

Pliocene

***Parafissurina acuticosta* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 28, Pl. 11, figs. 1a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

101-103 cm below sea-floor

Late Pleistocene to Holocene

***Parafissurina acuticosta* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 28, Pl. 11, fig. 2.

Paratype: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

301-303 cm below sea-floor

Late Pleistocene to Holocene

***Parafissurina buchneri* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 28, Pl. 10, figs. 9a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

131-133 cm below sea-floor

Late Pleistocene to Holocene

***Parafissurina buchneri* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 28, Pl. 10, figs. 8a, b.

Paratype: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

31-33 cm below sea-floor

Late Pleistocene to Holocene

***Parafissurina costata* Ujiie, Ichikura and Kurihara, 1983**

Natl. Sci. Mus., (Tokyo), Bull., Ser. C (Geol. & Paleontol.), v. 9, no. 2, 56, Pl.3, figs. 19, 20. (corrected by personal comm. of Prof. H. Ujiie)

Holotype: NSM, Micropal. Coll. (not numbered).

Core V32-153, Southern corner of Yamato Bank, Japan Sea (39 °13'N, 134 °34'E)

Water depth: 631 m

Holocene

***Parafissurina kiyosumiensis* Aoki, 1964**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 53, 164, Pl. 25, figs. 2a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68002.

Along the Kurotaki River, about 800 m N of Godai-batake, Kazusa-machi, Kimitsu-gun (Godai-batake, Kimitsu City), Chiba Pref. (Boso Peninsula), Japan

Kiyosumi Formation (middle part)

late Late Miocene

***Parafondicularia japonica* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 189,

Pl. 25(2), fig. 26.

Holotype: IGPS no. 21457.

Hosoya, Haranotani-mura, Ogasa-gun (Hosoya, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation

Pliocene

***Pararotalia? takayanagii* Matoba, 1970**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 42, no. 1, 63, Pl. 6, figs. 9a-c.

Holotype: IGPS no. 91311.

St. Ms 7, Matsushima Bay, Miyagi Pref., Japan (38 °20'N, 141 °05'E)

Water depth: 2.5 m

Recent

***Pararotalia? takayanagii* Matoba, 1970**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 42, no. 1, 63, Pl. 6, figs. 10a-c.

Paratype: IGPS no. 91312A.

St. Ms 56, Matsushima Bay, Miyagi Pref., Japan (38 °20'N, 141 °05'E)

Water depth: 1.7 m

Recent

***Patellinella hanzawai* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 613, Pl. 31, figs. 3a-c.

Holotype: IGPS no. 21368A.

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Tomioka beds

Pliocene

***Planocassidulina praeheleae* Nomura, 1999**

Palaeont. Soc. Japan, Sprec. Pap., no. 38, 53, Figs. 37-6a-c.

Holotype: NFL 9568, Paratypes: NFL 9549 (Figs. 37-7a-8c).

H-5, river-side cliff of the Wada-gawa River, Higashibessho, Tonami City, Toyama Pref., Japan (35 °36.7'N, 137 °02.7'E)

Higashibessho Formation

early Middle Miocene

***Planorbinella? sublarvata* Hatta, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 189, Pl. 38, figs. 4a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 38, figs. 5, 6; Pl. 39, figs. 1a-c).

Loc. 21, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 11 m

Recent

***Planularia asanoi* Ujiie, Ichikura and Kurihara, 1983**

Natl. Sci. Mus., (Tokyo), Bull., Ser. C (Geol. & Paleontol.), v. 9, no. 2, 54, Pl. 2, figs. 13, 14.

Holotype: NSM, Micropal. Coll. (not numbered).

Core V28-265 at Oki Bank, Japan Sea (36 °17'N, 134 °34'E)

80 cm below sea-floor

Holocene

***Planularia boso* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 206, Pl. 26(3), fig. 1.

Holotype: IGPS no. 21470, Paratypes: (Pl. 26(3), figs. 2-4, 6)

S of Sanuki-machi, Kimitsu-gun (Sanuki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °15.0'N, 139 °53.2'E)

Sanuki Formation

Pliocene

***Planularia iojimaensis* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 81, Pl. 1, figs. 5, 6.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2002.

Seacliff of Iojima Island, Nagasaki Pref., Japan (32 °45'54"N, 129 °45'48"E)

Iojima Formation

Early Miocene (Late Oligocene)

***Planularia luzonica* Asano, 1942**

Geol. Soc. Japan, Jour., v. 49, no. 586, 293, Pl. 11(7), figs. 15a, b.

Holotype: IGPS no. 66015.

Ilocos Norte, Northern Luzon, the Philippines

Tagalog Series

Pliocene

***Planularia mindoroensis* Asano, 1942**

Geol. Soc. Japan, Jour., v. 49, no. 586, 292, Pl. 11(7), figs. 8a, b.

Holotype: IGPS no. 66008.

Campana River, Sumagui, Bongabon, Mindoro Islands, the Philippines

Tagalog Series

Pliocene

***Planularia nagaoui* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 206, Pl. 30(7), fig. 1.

Holotype: IGPS no. 21471.

2 km SW of Minami-kanehara, Toshibetsu-mura (Minami-kanehara, Imakane-cho), Setana-gun, Hokkaido, Japan (42 °22.0'N, 139 °58.7'E)

Setana Formation

Pliocene

***Planularia yabei* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 205, Pl. 24(1), fig. 6.

Holotype: IGPS no. 21469.

Road-side cutting between Hosoya and Tombe,

Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)
Hosoya Formation
Pliocene

***Planularia yokoi* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 384, Pl. 40, figs. 2a, b.
Holotype: IGMSH coll. (not numbered).
Cutting cliff at Shuku, Hiyoshi-mura, Toki-gun (Shuku, Hiyoshi-machi, Mizunami City), Gifu Pref., Japan
Shukunohara Formation
Miocene

***Planularia asanoi* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 389, Pl. 43, figs. 1a-c.
Holotype: IGMSH coll. (not numbered).
Cutting cliff at Shuku, Hiyoshi-mura, Toki-gun (Shuku, Hiyoshi-machi, Mizunami City), Gifu Pref., Japan
Oidawara Formation
Miocene

***Planularia convexa* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 34, Pl. 4, figs. 14a-c.
Holotype: IGPS no. 67145.
Road cut of Tonohara, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33 °26'43"N, 133 °58'20"E)
Ananai Formation
Pliocene

***Planularia granotruncana* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 115, Pl. 50, figs. 6a-c.
Holotype: IGPS no. 85370.
Yoita-machi, Santo-gun, Niigata Pref., Japan
Nishiyama Formation
Late Miocene or Early Pliocene

***Planularia hoppoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 142, Pl. 12, figs. 8a-c.
Holotype: IGPS no. 60881.
Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)
Lower Byoritu beds (lowest part)
Tertiary

***Planularia nipponica* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 13, Pl. 3, figs. 13a-c.
Holotype: IGPS no. 75264.
IGPS loc. no. Iw-18, Kunimitsu, Yanagida-mura, Fugeshi-gun,

Ishikawa Pref. (Noto Peninsula), Japan (37 °22.5'N, 137 °05.8'E)
Najimi Formation
Miocene

***Planularia poronaiensis* Asano, 1952**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 42, Pl. 4, figs. 7a-c.
Holotype: IGPS no. 74794.
IGPS loc. no. So-1, Ikushunbtsu, Mikasayama-mura, Sorachi Prov. (Ikushunbtsu, Mikasa City), Hokkaido, Japan (43 °15.3'N, 141 °58.0'E)
Poronai shale (Poronai Formation)
Paleogene

***Planularia subdepressa* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 13, 15, Figs. 16-18.
Holotype: IGPS no. 67116.
Kamo, Toyota-mura (Kamo, Maruyama-machi), Awa-gun, Chiba Pref. (Boso Peninsula), Japan (35 °00.4'N, 139 °57.5'E)
Kiwada Formation
Pliocene

***Plectina nipponica* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 4, 2, Figs. 9, 10 .
Holotype: IGPS no. 66155.
Ni-19, Kawaya, Minamoto-mura (Kawadani, Yoshikawa-machi), Naka-kubiki-gun, Niigata Pref., Japan (37 °12.0'N, 138 °31.0'E)
Shiia Formation
Miocene

***Plectina poronaiensis* Asano, 1952**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 33, Pl. 4, fig. 12.
Holotype: IGPS no. 74781, Paratype: (Pl. 4, fig. 13)
Penkeobiraruka-valley, Shimo-hobetsu, Hobetsu-cho, Yufutsu-gun, Iburi Prov., Hokkaido, Japan (42 °47.0'N, 142 °06.0'E)
Poronai shale (Poronai Formation)
Paleogene

***Plectina shimokinensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 71, Pl. 13, fig. 10.
Holotype: IGPS no. 77216, Paratype: (Pl. 13, fig. 11)
Soshubetsu valley, N of Tappu, Obira-cho, Rumoi-gun, Hokkaido, Japan (44 °03.5'N, 141 °51.3'E)
Shimokine sandstone (Shimokine Formation)
Oligocene

***Plectina tarda* Ujiie, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 81, Pl. 1, fig. 5.
Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50218,
Paratypes: Inst. Geol. Min., Tokyo Univ. Edu., Reg. Nos. 50220 & 50221 (Pl. 1, figs. 3, 4a, b).

Loc. C, Shibaoka, Minano-machi, Chichibu-gun, Saitama Pref., Japan
Nenokami Formation
Early Miocene

***Plectofrondicularia delicatula* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 119, Pl. 8, fig. 2.
Holotype: IGPS no. 98072.
Sample SKS06, Kurukitomarizawa, SE of Momijiyama, Yubari City, Hokkaido, Japan
Poronai Formation
Late Eocene-Oligocene

***Plectofrondicularia goharai* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 312, Text-fig. 7.
Holotype: Res. Inst. Nat. Resour. (not numbered).
Futatsu-ike, Tsurumi-ku, Yokohama City, Kanagawa Pref., Japan
Tsurukawa Formation
Pliocene

***Plectofrondicularia japonica* Asano, 1953**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 10, 54, Fig. 9.
Holotype: IGPS no. 75289, Paratype: (Fig. 10)
Rukushubetsu River, SW of Yoshino-machi (Yoshino, Shintotsukawa-cho), Kabato-gun, Hokkaido, Japan (43°35.0'N, 141°43.3'E)
Wakkauenbetsu Formation
Miocene

***Plectofrondicularia niinoi* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 373, Pl. 5, figs. 12, 13.
Holotype: UMUT CF 3026.
Hachimanyama, Uzo, Utsunomiya City, Tochigi Pref., Japan
Terayama Group
Miocene

***Plectofrondicularia nogataensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 65, Pl. 10, fig. 1.
Holotype: IGPS no. 77208, Paratype: (Pl. 10, fig. 2)
About 1 km NE of Sakasegawa-mura (Sakasegawa, Reihoku-cho), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°31.8'N, 130°06.0'E)
Sakasegawa Formation (middle part)
Eocene

***Plectofrondicularia totomiensis* Makiyama, 1931**

Kyoto Imp. Univ., Coll. Sci., Mem., Ser. B, v. 7, no. 1, 51, Pl. 2, fig. 16.
Holotype: Geol. Inst. Kyoto Univ.(?)
Shimomata, Kakegawa-machi, Ogasa-gun (Shimomata, Kakegawa City), Shizuoka Pref., Japan (34°46.0'N, 138°01.0'E)

Kechienji Formation, Kakegawa Group
Pliocene

***Plectofrondicularia toyokoroensis* Yoshida, 1958**

Hokkaido Gakugei Univ., Jour., v. 9, no. 1, 269, Pl. 3, fig. 3.
Holotype: Kushiro Branch, Hokkaido Gakugei Univ. 48102.
Loc. no. 3008, Ogawa, Toyokoro-cho, Nakagawa-gun, Tokachi Prov., Hokkaido, Japan
Toberi Formation
Miocene

***Pleurostomella delicata* Konda, 1977**

In Nishimura et al., Kyoto Univ., Fac. Sci., Mem., Ser. Geol. & Mineral., v. 43, no.1/2, 125, Pl. 5, figs. 8a, b; Pl. 6, figs. 3a-c.
Holotype: Geol. Mineral., Fac. Sci., Kyoto Univ., Coll. Cat. No. JC1012, Paratype: Dept. Geol. Mineral., Fac. Sci., Kyoto Univ. (Pl. 5, figs. 8a, b; Pl. 6, fig. 4).
Gravity core GDP-11-15-(21), at water depth 1830 m, eastern slope of Japan Trench, ESE of Hachijo Island, Japan (28°06.2'N, 131°35.2'E)
20.0-21.0 cm below sea-floor (paratypes: 20.0-21.0 cm, 30.0-31.0 cm)
Holocene

***Pleurostomella peregrina* Yokoyama, 1890**

Palaeontographica, v. 36, 189, Pl. 24, figs. 4a, b.
Holotype: (unknown).
Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
Poronai shale (Poronai Formation)
Cretaceous (Oligocene)

***Polymorphina kamitakiensis* Chiji, 1961**

Osaka Mus. Nat. Hist., Bull., no. 14, 75, Pl. 1, fig. 1.
Holotype: OMNH Reg. No. F7871F.
Loc. J 18, W bank of the Joganji-gawa River, Kamitaki-cho (Oyama-machi), Kaminiikawa-gun, Toyama Pref., Japan
Kamitaki Sandstone
Miocene

***Polymorphina seminulina* Yokoyama, 1890**

Palaeontographica, v. 36, 189, Pl. 24, figs. 17a-c.
Holotype: (unknown).
Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
Poronai shale (Poronai Formation)
Cretaceous (Oligocene)

***Polymorphina (Sigmomorphina) simaensis* Makiyama & Nakagawa, 1941**

Geol. Soc. Japan, Jour., v. 48, no. 572, 240, Fig. 1.
Holotype: Geol. Inst. Kyoto Univ. (not numbered).
330 m S of the Hazama Railway Station on the Shima Railway (Kintetsu-Shima Line), Kiba, Isobe-machi, Shima-gun (Shima

Peninsula), Mie Pref., Japan
Pleistocene

***Polymorphina yabei* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 520, 33, Figs. 5a-c.

Holotype: IGPS no. 21403A.

Saboyama, Oide-mura, Natori-gun (Saboyama, Taihaku-ku, Sendai City), Miyagi Pref., Japan (38 °14.3'N, 140 °48.8'E)

Moniwa Formation (Hatatate Formation)

Miocene

***Polymorphinella compressa* Cushman & Hanzawa, 1936**

Cushman Lab. Foram. Res., Contr., v. 12, pt. 2, 47, Pl. 8, figs. 6a-d.

Holotype: U.S.N.M. 23144.

500 m N of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Pref. (Kikai-jima), Japan

Ryukyu limestone

Pleistocene

***Polymorphinella vaginulinaeformis* Cushman & Hanzawa, 1936**

Cushman Lab. Foram. Res., Contr., v. 12, pt. 2, 47, Pl. 8, figs. 5a-d.

Holotype: U.S.N.M. 23143.

500 m N of Kikai-cho, Oshima-gun, Kagoshima Pref. (Kikai-jima), Japan

Ryukyu limestone

Pleistocene

***Polymorphinoides spiralis* Cushman & Hanzawa, 1936**

Cushman Lab. Foram. Res., Contr., v. 12, pt. 2, 48, Pl. 8, figs. 4a-c.

Holotype: U.S.N.M. 23145.

500 m N of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Pref. (Kikai-jima), Japan

Ryukyu limestone

Pleistocene

***Polystomella (Polystomellina) discorbinoides* Yabe & Hanzawa, 1923**

Japanese Jour. Geol. Geogr., v. 2, no. 4, 99, tsxt-figs. a-d.

Holotype: (unknown).

Kutta (Kutta, Izumozaki-machi), Santo-gun, Niigata Pref., Japan

Natsukawa Formation

Pliocene

(Neotype has been given by Asano, 1950.)

***Polystomellina discorbinoides* Yabe & Hanzawa, 1923**

In Asano, 1950, Illust. Cat. Japan. Small. Foram., pt. 1, 12, Figs. 71-73.

Neotype: IGPS no. 66937.

200 m E of Kutta (Kutta, Izumozaki-machi), Santo-gun, Niigata Pref., Japan (37 °33.7'N, 138 °43.7'E)

Haizume Formation

Pliocene

***Poroeponides cribroconcameratus* Asano & Uchio, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 18, Figs. 132, 133 .

Holotype: IGPS no. 74703.

Kaigara-sawa, Kuromatsunai-mura (Kaigarasawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Setana Formation

Pliocene

***Poroeponides cribrorepandus* Asano & Uchio, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 18, Figs. 134, 135 .

Holotype: IGPS no. 74704.

Road cutting between Takaya and Watanai, Fujisawa City, Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Tomioka Formation

Pliocene

***Porogavelinella ujiiei* Kawagata, 1999**

Sci. Rep. Inst. Geosci., Univ. Tsukuba, Sec. B (Geol. Sci.), v. 20, 40, Fig. 11-1a-c, 2 .

Holotype: IGUT 13676, Paratypes: IGUT 13677 & 13678 (Figs. 11-3a-7c).

Gravity core NGC100, at the depth 1299 m, from Lord Howe Rise in the Tasman Sea, SW Pacific (25 °16.23'S, 162 °00.04'E)

184 cm below sea-floor (sample NGC100-6-84)

Late Quaternary

***Protelphidium kasamoriense* Aoki, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70., 260, Pl. 27, figs. 2a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu. (not numbered).

Along southern tributary of the Yoro River at Ushiku, Nanso-machi, Ichihara-gun (Ichihara City), Chiba Pref. (Boso Peninsula), Japan

Kasanori Formation (upper part), Kazusa Group

Early Pleistocene

***Protonina crassa* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 54, Text-figs. 5a, b.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Protonina difflugiformis* (Brady) var. *limnetica* Hada, 1937**

Dobutsugaku Zasshi (Zool. Mag., Japan), v. 49, no. 10, 342, Fig. 5.

Holotype: (unknown).

Koyama-ike, a small brackish lake connected with the mouth of the Sendai River, near Tottori City, Tottori Pref., Japan

Recent

***Psammospaera alba* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 25, Fig. 2.

Holotype: (unknown).

Owari Bay, Mie Pref., Japan

Recent

***Pseudocibicoides katasensis* Ujiie, 1956**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), v. 4, no. 3, 263, Pl. 13, figs. 1a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50004, Paratypes: Inst. Geol. Min., Tokyo Univ. Edu., Reg. Nos. 50005 & 50006 (Pl. 13, figs. 2a-c, 3).

Katase coast, Kanagawa Pref., Japan (35 °18'N, 139 °29.5'E)

Recent sediments

Recent

***Pseudoeponides japonicus* Uchio, 1950**

Japanese Assoc. Petroleum Technol., Jour., v. 15, no. 4, 190, Fig. 16.

Holotype: UMUT CF 3002.

200 m SE of primary school at Satsubo, Nishi-mura (Satsubo, Chonan-machi), Chosei-gun, Chiba Pref. (Boso Peninsula), Japan (35 °21.3'N, 140 °13.7'E)

Kakinokidai Formation

Pliocene

***Pseudoeponides konohanaensis* Chiji, 1956**

In Nakaseko and Chiji, Osaka Univ., North and South Colleges, Sci. Rep., no. 5, 62, Figs. 5a-c.

Holotype: Div. Geosci., Inst. Polytech., Osaka City Univ., Coll. Cat. No. CF 2503.

Boring "UFS", Shimofukushima Second. School, Shimofukushima, Fukushima-ku, Osaka City, Osaka Pref., Japan

17.58-17.89 m in depth

Holocene

***Pseudogaudryina ishikiensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 426, Fig. 1, nos. 61-62.

Holotype: IGPS no. 67039, Paratype: (Fig. 1, nos. 63-65)

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36 °51.5'N, 140 °48.0'E)

Kokozura Formation

Middle Miocene

***Pseudoglandulina japonica* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 44, Text-fig. 4.

Holotype: IGPS no. 66891, Paratype: (Text-fig. 5)

Soyo-maru St. no. 579, Toyama Bay

Water depth: 618 m

Recent

***Pseudonodosaria shitakaraensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 118, Pl. 8, figs. 1a, b.

Holotype: IGPS no. 98069.

Sample NIB14, Nuibetsu River, ca. 5 miles NE of Kamicharo, Shiranuka-cho, Shiranuka-gun, Hokkaido, Japan

Shitakara Formation

Late Eocene-Oligocene

***Pseudononion hashimotoi* Tai, 1959**

Hiroshima Univ., Jour. Sci., ser. C, v. 2, no. 4, 386, Pl. 41, figs. 2a-c.

Holotype: IGMSH coll. (not numbered).

Road cliff of Togari, Akiyo-cho, Mizunami City, Gifu Pref., Japan

Yamanouchi Formation

Miocene

***Pseudononion japonicum* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 512, 347, Text-figs. A-C.

Holotype: IGPS no. 21362A.

Road cutting between Takaya and Watanai, Fujisawa City, Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Naganuma beds (Naganuma Formation)

Pliocene

***Pseudononion kanbaraense* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 110, Pl. 38, figs. 8a-c.

Holotype: IGPS no. 85211.

Matsunaga R-1 Well of Daido Oil Company, Matsunaga-mura, Nishikanbara-gun, Niigata Pref., Japan

Haizume Formation (a core at a depth of 451.0 m)

Pliocene

***Pseudononion kishimaense* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 50, Pl. 8, figs. 21a-c.

Holotype: IGPS no. 77175.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Pseudononion oinomikadoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 110, Pl. 39, figs. 1a-c.

Holotype: IGPS no. 85212.

A core, at a depth of 260.0 m in Suibara R-3 Well of Teikoku Oil Company, Sasaka-mura, Kitakanbara-gun, Niigata Pref., Japan

Ushigakubi Formation

Late Miocene-?Pliocene

***Pseudononion shimodaense* Aoki, 1967**

Prof. H. Shibata Mem. Vol., 381, Pl. 1, figs. 6, 8.

Holotype: Dept. Found. Eng., Saitama Univ., Paleont. (not numbered), Paratype: (Pl. 1, fig. 9).

Nabeta Cove, Shimoda City, Shizuoka Pref. (Izu Peninsula), Japan

Water depth: 1-4 m

Recent

***Pseudononion subcostatum* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 510, Pl. 10, figs. 1a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50108.

Loc. no. 1, in the canal at Hosoya, Oota-mura (Hosoya, Yanagawa-machi), Date-gun, Fukushima Pref., Japan

Yanagawa Member, Date Formation

Miocene

***Pseudononion tredecum* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 622, Pl. 33, figs. 7a-c.

Holotype: IGPS no. 21375A.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Pseudoparrella japonica* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 430, Fig. 2, nos. 2-4.

Holotype: IGPS no. 67045.

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan

Kokozura Formation

Miocene

***Pseudoparrella naraensis* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 317, Figs. 6a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

NE of Onda, Naramachi, Kohoku-ku, Yokohama City, Kanagawa Pref., Japan (35 °32.4'N, 139 °31.2'E)

Nara mudstone (Nara Formation)

Pliocene

***Pseudoparrella tamana* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 317, Figs. 5a-c.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Dai, S of the Shukugawara Station (Nambu Line), Tama-ku, Kawasaki City, Kanagawa Pref., Japan (35 °36.3'N, 139 °34.3'E)

Takatsu Formation

Pliocene

***Pseudopolymorphina compressa* (d'Orbigny) var. *okuwaensis* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 72, Pl. 13, fig. 7; Pl. 15, figs. 8, 9.

Holotype: Geol. Inst., Univ. Tokyo (not numbered).

Onma, Sakiura-mura, Ishikawa-gun (Okuwa-machi, Kanazawa City), Ishikawa Pref., Japan (36 °31.4'N, 136 °41.2'E)

Onma Formation (Omma Formation)

Pliocene

***Pseudopolymorphina hanzawai* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 16, Pl. 1, fig. 15.

Holotype: Geol. Inst., Univ. Tokyo (not numbered).

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Pseudopolymorphina hokkaidoana* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 120, Pl. 8, figs. 8a-c.

Holotype: IGPS no. 98085.

Sample KUM43, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Pseudopolymorphina indica* (Cushman) var. *japonica* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 71, Pl. 13, fig. 6, Pl. 15, fig. 6.

Holotype: Univ. Tokyo. (not numbered).

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Pseudopolymorphina ishikawaensis* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 70, Pl. 13, fig. 5, Pl. 15, fig. 5.

Holotype: Univ. Tokyo. (not numbered).

Onma, Sakiura-mura, Ishikawa-gun (Okuwa-machi, Kanazawa City), Ishikawa Pref., Japan (36 °31.4'N, 136 °41.2'E)

Onma Formation (Omma Formation)

Pliocene

***Pseudopolymorphina shibatai* Aoki, 1967**

Prof. H. Shibata Mem. Vol., p.380, Pl. 1, fig. 2.

Holotype: Dept. Found. Eng., Saitama Univ., Paleont. (not numbered), Paratype: (Pl. 1, figs. 1, 3).

Nabeta Cove, Shimoda City, Shizuoka Pref. (Izu Peninsula), Japan

Water depth: 1-4 m

Recent

***Pseudopolymorphina suboblonga* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 91, Pl. 23, figs. 3a-c.

Holotype: U.S.N.M. 11663, Paratype: Univ. Tokyo (unfigured).
Okuwa, Ishikawa Pref., Japan
Late Pliocene

***Pseudopolymorphina suboblunga* var. *jugosa* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 91, Pl. 23, figs. 4a, b.
Holotype: U.S.N.M. 11665, Paratype: Univ. Tokyo (unfigured).
Off Kohama, Fukui Pref., Japan Sea
Recent

***Pseudopolymorphina taiwanica* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 138, Pl. 11, fig. 4.
Holotype: IGPS no. 60867.
Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)
Lower Byoritu beds
Tertiary

***Pseudorotalia borneensis* Ujiie, 1977**

Geol. Paleontol. Southeast Asia, v. 18, 95, Pl. 18, fig. 1.
Holotype: NSM, Micropal. Coll. 1008, Paratypes: NSM, Micropal. Coll. 1009, 1010, 1047 & 1048 (Pl. 18, figs. 2, 3; Pl. 21, figs. 7, 8).
Along the Labuk Road on the Sandakan Peninsula, North Boreno, Malaysia
Sandakan Formation
Miocene

***Pullenia asanoi* Yoshida, 1958**

Hokkaido Gakugei Univ., Jour., v. 9, no. 1, 271, Pl. 4, figs. 3a, b.
Holotype: Kushiro Branch, Hokkaido Gakugei Univ. 48104.
Loc. no. 3006, Ogawa, Toyokoro-cho, Nakagawa-gun, Tokachi Prov., Hokkaido, Japan
Oikamanai Formation
Miocene

***Pullenia okinawaensis* Ujiie, 1995**

Bull. Coll. Sci., Univ. Ryukyus, No. 60, 70, Pl. 12, figs. 7a, b.
Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 12, fig. 8).
Pilot core RN94 PC4, E off Tanegashima, Kagoshima Pref., Japan (30 °19.3'N, 131 °30.5'E)
Water depth: 2334 m
Recent

***Pulleniella asymmetrica* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 45, Pl. 23, figs. 3a, b.
Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 23, figs. 4a, b).
Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)
211-213 cm below sea-floor

Late Pleistocene to Holocene

***Pulvinulina japonica* Yokoyama, 1890**

Palaeontographica, v. 36, 192, Pl. 24, figs. 15a-c.
Holotype: (unknown).
Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
Poronai shale (Poronai Formation)
Cretaceous (Oligocene)

***Pulvinulina (?) singularis* Yokoyama, 1890**

Palaeontographica, v. 36, 192, Pl. 24, figs. 16a-c.
Holotype: (unknown).
Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan
Poronai shale (Poronai Formation)
Cretaceous (Oligocene)

***Pyrgo depressa* (d'Orbigny) var. *tomiyensis* Uchio, 1951**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 2, 34, Pl. 3, figs. 9a, b.
Holotype: UMUT CF 3014.
Loc. 11, 1000 m SWW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °16.0'N, 139 °47.9'E)
Tomiya tuffaceous sandstone (Tomiya Formation)
Pliocene

***Pyrgo ezo* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 93, Pl. 9, figs. 3a, b.
Holotype: IGPS no. 21450As; IGPS nos. 21450B-E (Pl. 9, figs. 1, 2, 4, 6).
200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °24.0'N, 139 °55.8'E)
Setana beds
Pliocene

***Pyrgo hachijensis* Uchio, 1952**

Japanese Jour. Geol. Geogr., v. 22, 151, Pl. 6, figs. 1a, b.
Holotype: UMUT CF 3037.
Beach at Yaene, Ogago-mura (Ookagou, Hachijo-machi), Hachijo Island, Tokyo, Japan (33 °05'N, 139 °48'E)
Beach sand
Recent

***Pyrgo lucernuloides* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 15, Pl. 3, figs. 7a, b.
Holotype: NSM, Micropal. Coll. (not numbered).
Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)
2-4 cm below sea-floor

Late Pleistocene to Holocene

***Pyrgo lucernuloides* Ujiie, 1990**

Bull. Coll. Sci., Univ. Ryukyus, No. 49, 15, Pl. 3, figs. 8a, b.

Paratypes: NSM, Micropal. Coll. (not numbered).

Core KT84-14-P1, E off Miyako Island, Okinawa Pref., Japan (24 °45'N, 127 °01'E)

11-13 cm below sea-floor

Late Pleistocene to Holocene

***Pyrgo natukawa* Matui & Nakagawa, 1942**

Geol. Soc. Japan, Jour., v. 49, no. 588, 356, Figs. 2, 3.

Holotype: Geol. Inst. Kyoto Univ.(?)

Sakaya, Sakaya-mura, Santo-gun, Niigata Pref., Japan

Natsukawa Formation

Pliocene

***Pyrgo pacifica* Asano, 1956**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 27, 78, Pl. 9, fig. 3.

Holotype: IGPS no. 66846.

Soyo-maru St. no. 329, Bungo Channel, central Japan

Water depth: 296 m

Recent

***Pyrgo siogamaensis* Asano, 1937**

Saito Ho-on kai Mus., Res. Bull., no. 13, 114, Pl. 15, figs. 3a, b.

Holotype: IGPS no. 21393, Paratype: SHM no. 11024.

Shiogama Bay, Miyagi Pref., Japan

Recent

***Pyrgo tainanensis* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, no. 233, 21, Pl. 1, figs. 8a-c.

Holotype: Taipei Imp. Univ. (not numbered).

Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation

Pliocene

***Pyrgo yabei* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 621, Pl. 33, figs. 1a, b.

Holotype: IGPS no. 21374A, Paratype: IGPS no. 21374B (Pl. 33, figs. 5a, b).

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Pyrulina hamadaensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 8, 5, Figs. 27, 28.

Holotype: IGPS no. 67053.

A sea-cliff at Hamada, Tanabu-machi, Shimokita-gun (Hamada,

Yokohama-machi, Kamikita-gun), Aomori Pref., Japan (41 °08.0'N, 141 °16.6'E)

Hamada Formation

Pliocene

***Quadriformina akiensis* Kurihara, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70, 280, Pl. 28, figs. 23-25.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68046.

A hillside cliff at Minamihabuki, Nishinohama, Hane-cho, Muroto City, Kochi Pref., Japan

Nobori Formation (middle part), Tonohama Group

Late Pliocene

***Quinqueloculina contorta* d'Orbigny *striata* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 943, Pl. 51(17), figs. 2a-c.

Holotype: IGPS no. 21389A.

Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33 °26.7'N, 133 °58.4'E)

Konomine Formation

Pliocene

***Quinqueloculina dainitiensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 327, Pl. 36, figs. 7a-c.

Holotype: IGPS no. 21334A.

Dainichi, Ugari-mura, Suchi-gun (Dainichi, Ugari, Fukuroi City), Shizuoka Pref., Japan (34 °49.0'N, 137 °55.2'E)

Dainichi sand

Pliocene

***Quinqueloculina fukushimaensis* Takayanagi, 1955**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 45, 51, Figs. 26a-c.

Holotype: IGPS no. 67149.

Is-34, off Isobe, Soma City, Fukushima Pref., Japan (37 °47'24"N, 140 °56'03.2"E)

Recent

***Quinqueloculina hasimotoi* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 92, Pl. 10, figs. 5a-c.

Holotype: IGPS no. 21449.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Setana Formation

Pliocene

***Quinqueloculina javana* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 98, Pl. 18(2), figs. 4a, b.

Holotype: IGPS no. 21408.

St.175, Tji-Saar, Batavia, West Java, Indonesia
Formation IV (middle part)
Miocene

***Quinqueloculina kansireiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 91, Pl. 6, figs. 1a-c.

Holotype: IGPS no. 63741.

Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)

Kansirei Group

Late Tertiary

***Quinqueloculina karatsuensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 52, Pl. 8, figs. 10a, b.

Holotype: IGPS no. 77181.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Quinqueloculina kuromatsunaiensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 621, Pl. 32, figs. 4a-d.

Holotype: IGPS no. 21372A.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Quinqueloculina makiyamai* Ishizaki, 1943**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 33, no. 233, 19, Pl. 1, figs. 9a-c.

Holotype: Taipei Imp. Univ. (not numbered).

Shimomata, Kakegawa-machi, Ogasa-gun (Shimomata, Kakegawa City), Shizuoka Pref., Japan

Kechienji Formation

Pliocene

***Quinqueloculina mundata* Ujiie, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 53, 67, Pl. 8, figs. 1a, b.

Holotype: NSM, Micropal. Coll. (not numbered).

Loc. 48, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 57 m

Recent

***Quinqueloculina reticulata* d'Orbigny var. *chitanii* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 114, Pl. 17(1), figs. 8a-c.

Holotype: IGPS no. 21407.

St. 1, Bodjong, Bantam, West Java, Indonesia
Formation VI
Pliocene

***Quinqueloculina sagamiensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 612, Pl. 30, figs. 5a-c.

Holotype: IGPS no. 21365A.

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Tomioka beds (Tomioka Formation)

Pliocene

***Quinqueloculina sakaii* Tai, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 720, 418, Text-figs. 1a-c.

Holotype: IGSH coll. cat. no. T.Y. 3.

Southern cliff of Shinji Lake, Fujina, Tamayu-mura (Fujina, Tamayu-cho), Yatsuka-gun, Shimane Pref., Japan (35 °26'7.5"N, 133 °2'15"E)

Fujina Member (lower part)

Miocene

***Quinqueloculina sawanensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 6, 6, Figs. 40-42.

Holotype: IGPS no. 66990.

Sea-cliff at Mano Bay, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Quinqueloculina subagglutinata* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 620, Pl. 32, figs. 1a-c.

Holotype: IGPS no. 21370A.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Quinqueloculina subquadra* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 78, Text-figs. 31a-c.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Quinqueloculina tikotoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 136, Pl. 10, figs. 11a-c.

Holotype: IGPS no. 60861.

Hoppo, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds (lowest part)

Tertiary

***Quinqueloculina totomiensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 327, Pl. 36, figs. 9a-c.

Holotype: IGPS no. 21335A.

Hosoya, Haranotani-mura, Ogasa-gun (Hosoya, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation, Kakegawa Group

Late Pliocene

***Quinqueloculina yabei* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 519, 942, Pl. 51(17), figs. 1a-c.

Holotype: IGPS no. 21385A.

Kannoura, Tosa Bay, Kochi Pref., Japan

Water depth: 0 m (shore sand)

Recent

***Quinqueloculina yezoensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 620, Pl. 32, figs. 3a-c.

Holotype: IGPS no. 21371A.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan (42 °39.5'N, 140 °16.8'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Radiatobolivina okinawaensis* Hatta, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 205, Pl. 51, figs. 1a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 51, figs. 2a-c, 4, 5).

Loc. 10, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 28 m

Recent

***Rectobolivina asanoi* Murata, 1951**

Kyushu Inst. Technol., Bull., no. 1, 96, Pl. 1, figs. 2a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. no. MM-210, Iwasaka, Yatsushiro-mura (Iwasaka, Kunitomi-cho), Higashimorogata-gun, Miyazaki Pref., Japan (32 °01.8'N, 131 °16.1'E)

Kamihokita Formation

Miocene

***Rectoglandulina charoensis* Asano, 1962**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 57, 30, Pl. 1, figs. 2a, b.

Holotype: IGPS no. 77254.

10 m depth of the boring core at Pon-muri-sawa, Ombetsu-mura (Ombetsu-cho), Shiranuka-gun, Hokkaido, Japan

Charo Formation

Eocene

***Rectoglandulina sagaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 54, Pl. 8, figs. 11a, b.

Holotype: IGPS no. 77186.

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)

Kishima Formation

Oligocene

***Recurvoides nasui* Konda, 1985**

In Shiki, ed., Geology of the northern Philippine Sea, 147, Pl. 2, figs. 5a, b.

Holotype: OMNH Reg. No. F17815F

Gravity core GDP-1-4-(4), at water depth 7610 m, eastern slope of Japan Trench, ESE of Hachijo Island, Japan (33 °31.3'N, 142 °15.4'E)

6-8 cm below sea-floor

Holocene

***Reophax delicatus* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 30, figs. 9a, b.

Holotype: (unknown).

The lagoons of the Palau Islands, Pacific Ocean

Recent

***Reophax enormis* Hada, 1929**

Sapporo Nat. Hist. Soc., Trans., v. 11, pt. 1, 10, Text-figs. a-d.

Holotype: (unknown).

Inlet of Oshoro, Hokkaido, Japan

Water depth: not exceeding 15 fathoms

Recent

***Reophax minutirectus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 113, Pl. 7, fig. 1.

Holotype: IGPS no. 98010.

Sample PRN24, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Reophax multicameratus* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 114, Pl. 7, figs. 2a, b.

Holotype: IGPS no. 98011.

Sample SRO09, Shirirruomappu River, Tomino, Yubari City, Hokkaido, Japan

Poronai Formation (middle part)

Late Eocene

***Reophax nodulosus* Brady var. *minor* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4,

27, fig. 6.

Holotype: (unknown).

Taraika Bay, Sakhalin, in the western part of the Sea of Okhotsk

Recent

***Reophax obliquus* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 29, Figs. 8a-c.

Holotype: (unknown).

Off Akkesi Bay, Hokkaido, Japan

Recent

***Reophax pacificus* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 28, Fig. 7.

Holotype: (unknown).

Off the Misaki Marine Biological Station of Tokyo Univ, Kanagawa Pref., Japan

Recent

***Reophax palaoensis* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 26, fig. 4.

Holotype: (unknown).

The lagoons of the Palau Islands, Pacific Ocean

Recent

***Reophax paucus* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 25, fig. 3.

Holotype: (unknown).

A station SE of Quelpart Island [Saishu], ca. 60 miles off the southern tip of Korea, in the north East China Sea

Water depth: 163 m

Recent

***Reophax tappuensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 71, Pl. 13, fig. 9.

Holotype: IGPS no. 77217, Paratype: (Pl. 13, fig. 8)

Soshubetsu valley, N of Tappu, Obira-cho, Rumoi-gun, Hokkaido, Japan (44 °3.5'N, 141 °51.3'E)

Shimokine Formation

Oligocene

***Reophax validus* Hada, 1957**

Hokkaido Univ., Fac. Sci., Jour., Ser. 6, Zool., v. 13, nos. 1-4, 26, fig. 5.

Holotype: (unknown).

Taraika Bay, Sakhalin, in the western part of the Sea of Okhotsk

Recent

***Reussella haizumensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 2, 12, Fig. 51.

Holotype: IGPS no. 66942.

250m SE of Kutta, Shimada-mura (Kutta, Izumozaki-machi), Santo-gun, Niigata Pref., Japan (37 °33.5'N, 138 °43.3'E)

Haizume Formation

Pliocene

***Reussella hayasakai* Oki, 1989**

South Pacific Study, v. 10, no. 1, 117, Pl. 11, fig. 8a.

Holotype: ESK F-9202, Paratypes: ESK F-9203-9205 (Pl. 11, figs. 8b-d).

St. 116, bay mouth of Kagoshima Bay, Kagoshima Pref., Japan (31 °14.1'N, 130 °41.4'E)

Water depth: 61 m

Recent

***Reussella naniwaensis* Chiji, 1956**

In Nakaseko and Chiji, Osaka Univ., North and South Colleges, Sci. Rep., no. 5, 61, Figs. 3a-c.

Holotype: Div. Geosci. Inst. Polytech., Osaka City Univ., Coll. Cat. No. CF 2501.

Boring "UFS", Shimofukushima Second. School, Shimofukushima, Fukushima-ku, Osaka City, Osaka Pref., Japan

16.20-16.90 m in depth

Holocene

***Robertina murotoensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 13, Pl. 3, figs. 9a, b.

Holotype: IGPS no. 77170.

Soyo-maru St. no. 345, off Muroto-zaki, Kochi Pref., Japan

Water depth: 199-165 m

Recent

***Robertina murotoensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 13, Pl. 3, figs. 13a, b.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 58, N of Todo-zaki, Aomori Pref., Japan

Water depth: 177 m

Recent

***Robulus abensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 327, Pl. 37, fig. 5.

Holotype: IGPS no. 21336A, Paratype: IGPS no. 21336E (Pl. 37, fig. 10).

Funakoshi, Shimizu City, Shizuoka Pref., Japan (34 °59.8'N, 138 °28.0'E)

Takegawa Group (Negoya Formation, Takegawa Group)

Pliocene

***Robulus amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 20, Text-figs. 7a, b, Pl. 6, fig. 13.

Holotype: UMUT CF 58080.

Torigoe, Kawaura-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32°21'20"N, 130°8'3"E)
Kyoragi beds (about 50 m. below the top), Hondo Group
Middle Eocene

***Robulus asanoi* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 28, Pl. 4, figs. 3a, b.

Holotype: IGPS no. 67136.

IGPS loc. no. Ko-22, Kitahari, Tano-cho, Aki-gun, Kochi Pref., Japan (33°26'05"N, 134°0'06"E)

Ananai Formation

Pliocene

***Robulus ashiyaensis* Murata, 1953**

Kyushu Inst. Technol., Bull., no. 3, 6, Pl. 1, figs. 10a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. MO-5, Kariomisaki, Ashiya-machi, Onga-gun, Fukuoka Pref., Japan (33°54'37.8"N, 130°40'1.6"E)

Yamaga Formation (middle part), Ashiya Group

Late Oligocene

***Robulus bataviaensis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 100, Pl. 18(2), figs. 16a, b.

Holotype: IGPS no. 21414.

St. 716, K. Bantarkasoh, Batavia, West Java, Indonesia

Formation IV (lower part)

Miocene

***Robulus bicostatus* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 328, Pl. 37, figs. 1a, b.

Holotype: IGPS no. 21377.

Kamiyashiki, Taruki-mura, Ogasa-gun (Kamiyashiki, Kakegawa City), Shizuoka Pref., Japan (34°47.5'N, 138°00.0'E)

Dainichi sand

Pliocene

***Robulus calcarioides* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 200, Pl. 24(1), fig. 20.

Holotype: IGPS no. 21459.

Kamiyashiki, Taruki-mura, Ogasa-gun (Kamiyashiki, Kakegawa City), Shizuoka Pref., Japan (34°47.5'N, 138°10.0'E)

Dainichi sand

Pliocene

***Robulus chitanii* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 100, Pl. 18(2), figs. 14a, b.

Holotype: IGPS no. 21411.

St. 716, K. Bantarkasoh, Batavia, West Java, Indonesia

Formation IV (lower part)

Miocene

***Robulus costatus* (Fichtel & Moll) bantarkasohensis Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 100, Pl. 18(2), figs. 15a, b.

Holotype: IGPS no. 21412.

St. 716, K. Bantarkasoh, Batavia, West Java, Indonesia

Formation IV (lower part)

Miocene

***Robulus depressus* Asano naigoensis Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 107, Pl. 33, figs. 2a, b.

Holotype: IGPS no. 85386.

Haizume, Naigo-mura (Haizume, Nishiyama-machi), Kariwa-gun, Niigata Pref., Japan

Haizume Formation

Pliocene

***Robulus depressus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 202, Pl. 25(2), fig. 15.

Holotype: IGPS no. 21462, Paratype: IGPS no. 21462 (Pl. 30(7), fig. 28).

100m E of Kamiyashiki, Taruki-mura, Ogasa-gun (Kamiyashiki, Kakegawa City), Shizuoka Pref., Japan (34°47.5'N, 138°00.2'E)

Dainichi sand

Pliocene

***Robulus depressus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 202, Pl. 26(3), fig. 10.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

S of Sanuki-machi, Kimitsu-gun (Sanuki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan

Pliocene

***Robulus depressus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 202, Pl. 26(3), fig. 27.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Pliocene

***Robulus depressus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 202, Pl. 28(5), fig. 11.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Kanazawa-machi (Kanazawa-ku), Yokohama City, Kanagawa Pref., Japan

Pliocene

***Robulus etigoensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 203, Pl. 30(7), fig. 38.

Holotype: IGPS no. 21466.

Natsukawa-dani, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan (37° 22.5'N, 138° 37.3'E)

Natsukawa Formation (Haizume Formation)

Pliocene

***Robulus himiensis* Chiji & Nakaseko, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 663, 521, Figs. 4a, b.

Holotype: Geol. Inst. Kyoto Univ.(?)

Sugaike, Kumanashi-mura, Himi-gun (Sugaike, Himi City),

Toyama Pref., Japan

Takado mudstone (Nakanami Formation)

Miocene

***Robulus hoppoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 137, Pl. 11, figs. 2a, b.

Holotype: IGPS no. 60864.

Hoppo, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Robulus interruptus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 204, Pl. 30(7), fig. 5.

Holotype: IGPS no. 21467, Paratypes: (Pl. 30(7), figs. 6-7)

200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42° 24.0'N, 139° 55.8'E)

Setana Formation

Pliocene

***Robulus izumoensis* Tai & Okamoto, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 384, Pl. 39, figs. 5a, b.

Holotype: IGMSH coll. (not numbered).

Cliff along the Hiebara River in Nojiri, S of Izumo City, Shimane Pref., Japan

Kawai Formation

Miocene

***Robulus kimituensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 203, Pl. 26(3), fig. 17.

Holotype: IGPS no. 21463, Paratypes: (Pl. 26(3), figs. 15, 23, 24)

Nisi-higasa, Akimoto-mura, Kimitu-gun (Nisihigasa, Kimitsu City), Chiba Pref. (Boso Peninsula), Japan

Kiwada Formation

Pliocene

***Robulus kotiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 203, Pl. 29(6), fig. 35.

Holotype: IGPS no. 21465.

Road cut at Tonohama, E of Todani, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33° 26.7'N, 133° 58.4'E)

Konomine Formation

Pliocene

***Robulus kushiroensis* Yoshida, 1958**

Hokkaido Gakugei Univ., Jour., v. 9, no. 1, 254, Pl. 1, figs. 2a, b.

Holotype: Kushiro Branch, Hokkaido Gakugei Univ. cat. no. HGKC58001.

West coast of Kiritappu Island, Hamanaka-cho, Akkeshi-gun, Hokkaido, Japan (43° 4'12"N, 145° 6'36"E)

Kiritappu Formation

Late Maastrichtian or Danian

***Robulus kusuboensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 65, Pl. 12, figs. 16a, b.

Holotype: IGPS no. 77206.

Yamaura, Akasaki-mura (Yamaura, Ariake-machi), Amakusagun, Kumamoto Pref. (Kamishima, Amakusa Islands), Japan (32° 21.3'N, 130° 03.2'E)

Kyoragi Formation (middle part; =Kusubo Formation)

Eocene

***Robulus miyagiensis* Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 520, 32, Figs. 3a, b.

Holotype: IGPS no. 21400A.

Saboyama, Natori-gun (Saboyama, Taihaku-ku, Sendai City), Miyagi Pref., Japan (38° 14.3'N, 140° 48.8'E)

Moniwa Formation (Hatatate Formation)

Miocene

***Robulus nagaoui* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 20, Text-figs. 6a, b, Pl. 6, figs. 11, 12.

Holotype: UMUT CF 58078.

Tsuzurakawachi, Kawaura-machi, Shimo-shima, Kumamoto Pref. (Shimojima, Amakusa Islands), Japan (32° 21'0"N, 130° 3'41"E)

Kyoragi beds (about 50 m below the top), Hondo Group

Middle Eocene

***Robulus notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 13, Pl. 1, figs. 25a, b.

Holotype: IGPS no. 75266.

IGPS loc. no. Iw-16, Gonda, Yanagida-mura, Fugeshi-gun,

Ishikawa Pref. (Noto Peninsula), Japan (37 °21.4'N, 137 °07.2'E)
Higashi-innai Formation
Miocene

***Robulus pseudoechinatus* Asano, 1942**

Geol. Soc. Japan, Jour., v. 49, no. 586, 291, Pl. 11(7), fig. 2.
Holotype: IGPS no. 66002.
About 4 km E of Sta Cruz, Zambales, Luzon, the Philippines
Visaya series
Oligocene

***Robulus pseudorotulatus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 25(2), fig. 1.
Holotype: IGPS no. 21460, Paratypes: (Pl. 25(2), figs. 3, 4; Pl. 31(8), fig. 6)
Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)
Hosoya Formation
Pliocene

***Robulus pseudorotulatus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 26(3), fig. 28.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

***Robulus pseudorotulatus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 31(8), fig. 3.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Saboyama, Natori-gun (Saboyama, Taihaku-ku, Sendai City), Miyagi Pref., Japan
Moniwa Formation (Hatatate Formation)
Miocene

***Robulus sagaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 54, Pl. 8, figs. 7a, b.
Holotype: IGPS no. 77187.
IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33 °19.7'N, 129 °55.8'E)
Kishima Formation
Oligocene

***Robulus sagamiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 25(2), fig. 6.
Holotype: IGPS no. 21461, Paratype: Inst. Geol. Paleont., Tohoku Univ. (Pl. 28(5), fig. 12).
Sakashita, Tamanawa-mura, Kamakura-gun (Sakashita,

Tamanawa, Kamakura City), Kanagawa Pref., Japan (35 °20.2'N, 139 °30.3'E)
Kanazawa Formation
Pliocene

***Robulus sagamiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 26(3), figs. 11-12.
Paratypes: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
S of Sanuki-machi, Kimitsu-gun (Sanuki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan

***Robulus sagamiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 26(3), fig. 13.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Tosaki, Tomioka-mura, Kimitu-gun, Chiba Pref. (Boso Peninsula), Japan

***Robulus sagamiensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 201, Pl. 29(6), fig. 16.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).
Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan
Pliocene

***Robulus sasai* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 204, Pl. 30(7), fig. 8.
Holotype: IGPS no. 21468.
200 m W of Maruyama, Toshihetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan
Setana Formation
Pliocene

***Robulus sugotaensis* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 191, Text-figs. 1a, b.
Holotype: IGPS no. 65516.
Road side cutting, 700 m S of Kura, Shimogo-mura (Kura, Higashiyuri-machi), Yuri-gun, Akita Pref., Japan
Sugota Formation
Miocene

***Robulus sumaguiensis* Asano, 1942**

Geol. Soc. Japan, Jour., v. 49, no. 586, 290, Pl. 11(7), fig. 10.
Holotype: IGPS no. 66010.
Campana River, Sumagui, Bongabon, Mindoro Islands, the Philippines
Tagalog Series
Pliocene

***Robulus surugaensis* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 328, Pl. 37, figs. 4a, b.

Holotype: IGPS no. 21376A.

Funakoshi, Shimizu City, Shizuoka Pref., Japan (34 °59.8'N, 138 °28.0'E)

Kakegawa Group

Late Pliocene

***Robulus tanoensis* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 28, Pl. 4, figs. 4a, b.

Holotype: IGPS no. 67137.

Ko-23, cliff of the tributary of the Nahari River in the northwestern part of Tano-cho, Aki-gun, Kochi Pref., Japan (33 °25'38"N, 134 °0'14"E)

Ananai Formation

Pliocene

***Robulus tibaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 203, Pl. 26(3), fig. 16.

Holotype: IGPS no. 21464.

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan

Kiwada Formation

Pliocene

***Robulus tibaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 203, Pl. 30(7), fig. 27.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Natsukawa-dani, 1 km E of Kabazaki, Kitajo-mura, Kariha-gun (Kabazaki, Kitajo, Kashiwazaki City), Niigata Pref., Japan

Pliocene

***Robulus tumidus* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 200, Pl. 24(1), fig. 9.

Holotype: IGPS no. 21458.

Road-side cutting between Hosoya and Tombe, Haranotani-mura, Ogasa-gun (Hosoya and Tombe, Kakegawa City), Shizuoka Pref., Japan (34 °47.8'N, 137 °57.2'E)

Hosoya Formation

Pliocene

***Robulus ubugasawensis* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 509, Pl. 10, figs. 28a, b.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50106.

Loc. no. Ub. 2, cliff at the bank of the Ubugasawa River, Uchinobaba, Koori-machi, Date-gun, Fukushima Pref., Japan

Date Formation

Miocene

***Robulus yoshitakiensis* Chiji & Nakaseko, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 663, 521, Figs. 3a, b.

Holotype: Geol. Inst. Kyoto Univ.(?)

Kurodani, Yashiro-mura, Himi-gun (Kurodani, Himi City),

Toyama Pref., Japan (36 °54.0'N, 136 °57.5'E)

Yoshitaki Formation

Miocene

***Rotalia asanoi* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 375, Text-figs. a-c; Asano, 1938, pl. 4, figs. 1a-c (as *Rotalia beccarii*, not of Linné).

Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Takaya, Muraoka-mura, Kamakura-gun (Takaya, Fujisawa City),

Kanagawa Pref., Japan

Pliocene

***Rotalia beccarii* (Linné) aomoriensis** Asano, 1951

Illust. Cat. Japan. Small. Foram., pt. 14, 13, Figs. 96-98.

Holotype: IGPS no. 67192.

Okunai, Tanabu-machi, Shimokita-gun (Okunai, Mutsu City),

Aomori Pref., Japan (41 °12.4'N, 141 °17.3'E)

Hamada Formation

Pliocene

***Rotalia beccarii* (Linné) hatatatensis** Takayanagi, 1952

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 62, Fig. 5.

Holotype: IGPS no. 67133.

Mi-96, E cliff of the tributary of the Natori River, just below the Oide-mura Primary School, Oide-mura, Natori-gun (Moniwa,

Taihaku-ku, Sendai City), Miyagi Pref., Japan (38 °13'06"N, 140 °47'18"E)

Hatatate Formation

Miocene

***Rotalia beccarii* (Linné) honyaensis** Asano, 1953

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 11, 57, Figs. 11a-c.

Holotype: IGPS no. 75291.

1km SE of Kamikuromochi, Kashima-mura (Kamikuromochi, Kashima-machi, Iwaki City), Fukushima Pref., Japan (36 °

59.2'N, 140 °56.5'E)

Honya shale (Honya Formation)

Miocene

***Rotalia hozanensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 141, Pl. 12, figs. 4a-c.

Holotype: IGPS no. 60876.

Hozan, Hozan-syo, Tikuto-gun, Shitiku Pref., northern Taiwan (Formosa)

Middle Byoritu beds

Tertiary

***Rotalia ikebei* Inoue & Nakaseko, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 664, 11, Figs. 4a-c.

Holotype: Geol. Inst. Kyoto Univ.(?)

Yoshihara-mura, S of Hota (Kyonan-machi, Awa-gun), Chiba Pref. (Boso Peninsula), Japan

Sakuma Formation

Miocene

***Rotalia japonica* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 137, Text-figs. 93a-c.

Holotype: (unknown).

Asamushi Marine Biological Station, Mutsu Bay, Aomori Pref., Japan

Recent

***Rotalia kawachiensis* Chiji, 1956**

In Nakaseko and Chiji, Osaka Univ., North and South Colleges, Sci. Rep., no. 5, 61, Figs. 4a-c.

Holotype: Div. Geosci. Inst. Polytech., Osaka City Univ., Coll. Cat. No. CF 2502.

Boring "Suminodo", Muramatsu Knitting Industry Co. Ltd. Higashimura, Tatetsu-cho, Daito City, Osaka Pref., Japan

80 m in depth

Holocene

***Rotalia ketienziensis* (Ishizaki) angulata Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 312, Text-figs. 1a-c, 9.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Cliff immediate S of the Hodogaya Station, Hodogaya-ku, Yokohama City, Kanagawa Pref., Japan (35 °26.3'N, 139 °36.2'E)

Tsurukawa Formation

Pliocene

***Rotalia lymani* Yokoyama, 1890**

Palaeontographica, v. 36, 193, Pl. 24, figs. 18a-c.

Holotype: (unknown).

Poronai, Mikasayama-mura, Sorachi-gun (Poronai, Mikasa City), Hokkaido, Japan

Poronai shale (Poronai Formation)

Cretaceous (Oligocene)

***Rotalia maruhassii* Kuwano, 1950**

Geol. Soc. Japan, Jour., v. 56, no. 657, 314, Figs. 2, 8.

Holotype: Res. Inst. Nat. Resour. (not numbered).

Cliff, NW of Kitagayato, Nara-machi, Kohoku-ku, Yokohama City, Kanagawa Pref., Japan (35 °10.7'N, 139 °38.6'E)

Hatsuse Formation

Pliocene

***Rotalia? minuta* Takayanagi, 1955**

Tohoku Univ., Inst. Geol. Paleontol., Contr., no. 45, 52, Figs. 29a-c.

Holotype: IGPS no. 67152.

Is-53, off Isobe, Soma City, Fukushima Pref., Japan (37 °48'22.6"N, 140 °57'19.4"E)

Recent

***Rotalia multispinosa* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 141, Pl. 12, figs. 5a-c.

Holotype: IGPS no. 60877.

Intosi, Tikuto-gai, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Rotalia nipponica* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 614, Pl. 31, figs. 2a-c.

Holotype: IGPS no. 21369A.

Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref., Japan (35 °20.2'N, 139 °30.2'E)

Tomioka beds

Pliocene

***Rotalia ozawai* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 15, Figs. 115-117.

Holotype: IGPS no. 67197.

Sea cliff at Mano Bay, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Rotalia sadoensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 16, Figs. 120, 121.

Holotype: IGPS no. 67198.

Sea cliff at Mano Bay, Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Rotalia stachi* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 16, Figs. 122, 123.

Holotype: IGPS no. 67199.

Todani, N of Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan (33 °26.7'N, 133 °58.4'E)

Konomine Formation

Pliocene

***Rotalia taiwanica* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 141, Pl. 12, figs. 6a-c.

Holotype: IGPS no. 60878.

Syomon, Sinpo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)

Upper Byoritu beds

Tertiary

***Rotalia tanosawaensis* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 192, Text-figs. 7a-c.

Holotype: IGPS no. 65522.

Road side cutting, 1000 m SW of Tanosawa, Odose-mura (Tanosawa, Fukaura-machi), Nishi-tsugaru-gun, Aomori Pref., Japan

Sugota Formation

Miocene

***Rotalia tikutoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 141, Pl. 12, figs. 7a-c.

Holotype: IGPS no. 60879.

Denryoko, Ozan-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower By6ritu beds

Tertiary

***Rotalia tochiensis* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 374, Pl. 5, figs. 1a-c.

Holotype: UMUT CF 3017.

Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan (36 °32.0'N, 139 °44.2'E)

Momiyama Sandstone Member, Kanuma Formation

Miocene

***Rotalia yubariensis* Asano, 1952**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 4, 49, Pl. 6, figs. 1a, b.

Holotype: IGPS no. 74797, Paratype: (Pl. 6, figs. 2a, b)

IGPS loc. no. Yu-1, about 2 km S of Momijiyama, Yubari City, Hokkaido, Japan

Takinoue Formation

Miocene

***Rotaliatina globosa* Yabe & Asano, 1937**

Geol. Soc. Japan, Jour., v. 44, no. 523, 326, Figs. 3a, b.

Holotype: IGPS no. 21397.

Bodjong, Bantam, West Java, Indonesia

Pliocene

***Rotalidium pacificum* Asano, 1936**

Imp. Acad. Tokyo, Proc., v. 12, 350, Figs. 1, 2.

Holotype: IGPS no. 21395A, Paratype: IGPS no. 21395B (Fig. 3).

Soyo-maru St. no. 329, off Cape Ashizuri, Kochi Pref., Japan (32 °38.2'N, 132 °39.6'E)

Water depth: 296 m

Recent

***Rupertina pustulosa* Hatta, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 192, Pl. 41, figs. 2a-c.

Holotype: NSM, Micropal. Coll. (not numbered), Paratype: (Pl. 41, figs. 3, 4).

Loc. 4, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 172 m

Recent

***Sagenina expansa* Yabe, 1921**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 5, no. 4, 98, Pl. 16, figs. 3-5.

Holotype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Southwestern coast of Haha-jima (Hillsborough Island), Ogasawara (Bonin Islands), Tokyo, Japan

Calcareous tuff

Eocene

***Saitoella globosa* Kaiho, 1992**

Proc. ODP, Sci. Results, v. 126, 300, Pl. 7, figs. 9a-c.

Holotype: IGPS no. 101180, Paratypes: IGPS nos. 101181-101186 (unfigured).

ODP Hole 792E, at the depth 1787.2 m, forearc basin in the Izu-Bonin Arc, NW Pacific; (30 °54.95'N, 139 °50.66'E)

ODP 792E-32R-1, 13-15 cm

Late Oligocene

***Saracenaria akitaensis* Iwasa & Kikuchi, 1954**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 16, 191, Text-figs. 3a, b.

Holotype: IGPS no. 65518.

Cliff, 300 m NE of Habiro, Kamikawa-Ouchi-mura (Habiro, Ouchi-machi), Yuri-gun, Akita Pref., Japan

Sugota Formation

Miocene

***Saracenaria minatoi* Shirai, 1960**

Hokkaido Univ., Fac. Sci., Jour., Ser. 4, Geol. & Mineral., v. 10, no. 3, 537, Pl. 1, figs. 1, 2.

Holotype: Dept. Geol. Mineral., Hokkaido Univ. 13558.

Kaigara-sawa, Kuromatsunai-machi (Kaigarasawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan

Nakanokawa Formation

Pliocene

***Saracenaria ujiei* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 118, Pl. 7, figs. 15a-c.

Holotype: IGPS no. 98070.

Sample KUM13, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Schenckiella sagaensis* Murata, 1961**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 8, 81, Pl. 1, figs. 1, 2.

Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 2001.

A borehole of Kashima Coal Mining Co. at Kawachi, Kashima City, Saga Pref., Japan (33 °5'24"N, 130 °5'16.6"E)

Kyoragi Formation (280 m in depth)

Early Miocene (Late Oligocene)

***Scurciatoforamen lageniformis* Ujiie, 1997**

Bull. Coll. Sci., Univ. Ryukyus, No. 63, 125, Pl. 1, figs. 2a, b.

Holotype: NSM, Micropal. Coll. (not numbered), Paratypes: (Pl. 1, figs. 3a-5b).

Core H3571, Hess Rise, N. Pacific (34 °11.7'N, 179 °15.4'E)

Late Pleistocene to Holocene

***Sigmoidella bakomensis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 102, Pl. 18(2), fig. 8.

Holotype: IGPS no. 21413.

St. 96, K. Bakom, Batavia, West Java, Indonesia

Formation IV (upper part)

Miocene

***Sigmoidella kagaensis* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 19, Pl. 2, fig. 14.

Holotype: Geol. Inst., Univ. Tokyo (not numbered).

Onma, Sakiura-mura, Ishikawa-gun (Okuwa-machi, Kanazawa City), Ishikawa Pref., Japan (36 °31.4'N, 136 °41.2'E)

Onma Formation (Omna Formation)

Pliocene

***Sigmoidella margaretae* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 142, Pl. 39, figs. 4a, b.

Holotype: U.S.N.M. 11882.

Terao, Miura, (Kanagawa Pref. ?) Japan

Late Pliocene

***Sigmoidella (Sigmoidina) pacifica* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 19, Pl. 2, fig. 13.

Holotype: U.S.N.M. 20313.

Road-side cutting near Yamaguchi, Kakio, (Manpukuji, Asao-ku), Kawasaki City, Kanagawa Pref., Japan (35 °36.1'N, 139 °30.2'E)

Kakio Formation

Pliocene

***Sigmoidella subtaiwanensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 138, Pl. 11, figs. 6a-c.

Holotype: IGPS no. 60868.

Syomon, Sinpo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)

Upper Byoritu beds

Tertiary

***Sigmoidella taiwanensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 138, Pl. 11, figs. 7a-c.

Holotype: IGPS no. 60869.

Intosi, Tikuto-gai, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Sigmoidilina formosana* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 136, Pl. 10, figs. 10a, b.

Holotype: IGPS no. 60862.

Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Sigmoidilina imamurai* Tai, 1954**

Hiroshima Univ., Jour. Sci., Ser. C, v. 1, no. 4, 20, Pl. 1, figs. 13a, b.

Holotype: IGSH coll. cat. no. T.Y.1.

Northern cliff of Yoshino Primary School, Yoshino-mura (Yoshino, Sho-ou-cho), Katsuta-gun, Okayama Pref., Japan

Katsuta Formation

Miocene

***Sigmoidilina sakasegawaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 64, Pl. 11, figs. 15a, b.

Holotype: IGPS no. 77205.

About 1 km NE of Sakasegawa-mura (Sakasegawa, Reihoku-cho), Amakusa-gun, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °31.8'N, 130 °06.0'E)

Sakasegawa Formation (middle part)

Eocene

***Sigmomorpha ozawai* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 115, Text-figs. 73, 74.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Sigmomorpha sadoensis* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 17, Pl. 2, fig. 11.

Holotype: Geol. Inst., Univ. Tokyo (not numbered).

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °33.7'N, 138 °43.4'E)

Sawane Formation

Pliocene

***Sigmomorpha sawanensis* Cushman & Ozawa, 1929**

Japanese Jour. Geol. Geogr., v. 6, nos. 3-4, 74, Pl. 16, fig. 6.

Holotype: Univ. Tokyo (not numbered).

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °59.8'N, 138 °16.7'E)

Sawane Formation

Pliocene

***Sigmomorpha (Sigmomorphina) yokoyamai* Cushman & Ozawa, 1928**

Cushman Lab. Foram. Res., Contr., v. 4, pt. 1, 18, Pl. 1, fig. 16.

Holotype: Univ. Tokyo (not numbered).

A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 °33.7'N, 138 °43.4'E)

Sawane Formation

Pliocene

***Sigmomorphina alicae* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 139, Pl. 38, figs. 8a, b.

Holotype: U.S.N.M. 20856.

Albatross Station D4805, off Japan

Recent

***Sigmomorphina ezoensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 120, Pl. 8, figs. 9a-d.

Holotype: IGPS no. 98088.

Sample KUM47, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Sigmomorphina ezoensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 120, Pl. 8, figs. 6, 7.

Paratypes: IGPS nos. 98089 & 98090.

Sample SNT12, Tanakazawa, N of Hobetsu, (Hobetsu, Hobetsu-cho, Yufutsu-gun,) Hokkaido, Japan

Poronai Formation

Late Eocene-Oligocene

***Sigmomorphina gallowayi* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 135, Pl. 36, figs. 4a, b.

Holotype: U.S.N.M. 11855.

Albatross Station D4807, coast of Japan

Recent

***Sigmomorphina hokkaidoensis* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 97, Pl. 11, fig. 10.

Holotype: IGPS no. 21453.

200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °24.0'N, 139 °55.8'E)

Setana beds

Pliocene

***Sigmomorphina kotoi* Cushman & Ozawa, 1930**

U. S. Natl. Mus., Proc., v. 77, art. 6, 134, Pl. 35, figs. 7a, b.

Holotype: U.S.N.M. 11848.

Natsukawa, (Kabazaki, Kitajo, Kashiwazaki City) Niigata Pref., Japan

Late Pliocene

***Sigmomorphina kuromatunaiensis* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 98, Text-figs. 2a, b.

Holotype: IGPS no. 21455A, Paratype: IGPS no. 21455B (Text-figs. 3a, b).

St. 382, Nakanokawa, Kuromatsunai-mura (Nakanokawa, Kuromatsunai-cho), Suttsu-gun, Hokkaido, Japan

Nakanosawa beds (Setana Formation)

Pliocene

***Sigmomorphina nagaoui* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 97, Pl. 11, fig. 1.

Holotype: IGPS no. 21452A.

200 m W of Maruyama, Toshibetsu-mura (Maruyama, Kitahiyama-cho), Setana-gun, Hokkaido, Japan (42 °24.0'N, 139 °55.8'E)

Setana beds (Setana Formation)

Pliocene

***Sigmomorphina notoensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 8, 11, Figs. 54, 55 .

Holotype: IGPS no. 66146.

Valley-cliff at Fukamigawa, Konosu-mura (Fukami-machi, Wajima City), Ishikawa Pref. (Noto Peninsula), Japan (37 °24.5'N, 136 °58.3'E)

Higashi-innai Formation

Miocene

***Sigmomorphina setanaensis* Asano, 1938**

Japanese Jour. Geol. Geogr., v. 15, nos. 1-2, 98, Text-figs. 1a, b.

Holotype: IGPS no. 21454A.

A cliff of Toshibetsu river, ca.800 m W of Omagari, Toshibetsu-mura (Omagari, Imakane-cho), Setana-gun, Hokkaido, Japan (42 °26.7'N, 140 °10.7'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Silicosigmoilina abyssalica* Inoue, 1980**

Prof. S. Kanno Mem. Vol., Inoue, 1980, p. 257, Pl. 26, figs. 19a-c.

Holotype: (unknown)., Paratypes: (Pl. 26, figs. 11, 16, 20)

P114, off Nishi-tsugaru, Aomori Pref., Japan (41 °06.0'N, 139 °49.0'E)

210-215 cm below sea-floor

Quaternary

***Silicosigmoilina abyssalica* Inoue, 1980**

Prof. S. Kanno Mem. Vol., Inoue, 1980, p. 257, Pl. 26, figs. 7a, b.

Paratype: (unknown).

P122, off Nishi-tsugaru, Japan Sea (41°03.9'N, 139°58.4'E)

250-255 cm below sea-floor

Quaternary

***Silicosigmoilina abyssalica* Inoue, 1980**

Prof. S. Kanno Mem. Vol., Inoue, 1980, p. 257, Pl. 26, figs. 12, 14.

Paratypes: (unknown).

W of Oki Islands, Japan Sea (36°07.9'N, 132°37.9'E)

Quaternary

***Siphogenerina columellaris* (Brady) *costulata* Ishiwada, 1964**

Geol. Survey Japan, Rep., no.205, 41, Pl. 5, fig. 82.

Holotype: Geol. Surv. Japan F61165.

A dredging in Tosa Bay

Water depth: 193 m

Recent

***Siphotextularia masudai* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 17, Pl. 1, figs. 8a, b.

Holotype: IGPS no. 75267.

IGPS loc. no. IW-15, Wasumi, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37°21.4'N, 137°07.2'E)

Higashi-innai Formation

Miocene

***Siphotextularia rolshauseni* Phleger & Parker *otsukai* Oki, 1989**

South Pacific Study, v. 10, no. 1, 78, Pl. 3, fig. 6a.

Holotype: ESK F-7561.

St. 146, Kagoshima Bay, Kagoshima Pref., Japan (31°3.8'N, 130°32.5'E)

Water depth: 213 m

Recent

***Siphotextularia rolshauseni* Phleger & Parker *otsukai* Oki, 1989**

South Pacific Study, v. 10, no. 1, 78, Pl. 3, fig. 6b.

Paratype: ESK F-7562.

St. 144, Kagoshima Bay, Kagoshima Pref., Japan (31°5.9'N, 130°36.1'E)

Water depth: 105 m

Recent

***Siphotextularia rolshauseni* Phleger & Parker *otsukai* Oki, 1989**

South Pacific Study, v. 10, no. 1, 78, Pl. 3, fig. 6c.

Paratype: ESK F-7563.

St. 91, central part of Kagoshima Bay, Kagoshima Pref., Japan

(31°21.7'N, 130°40.0'E)

Water depth: 207 m

Recent

***Sphaeroidina japonica* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 19, Pl. 2, fig. 44.

Holotype: IGPS no. 75265, Paratype: (Pl. 2, fig. 43)

IGPS loc. no. Iw-11, Orido, Nishiumi-mura, Suzu-gun (Orido, Suzu City), Ishikawa Pref. (Noto Peninsula), Japan (37°31.2'N, 137°16.9'E)

Higashi-innai Formation

Miocene

***Spirolina okinawaensis* Ujiie & Hatta, 1994**

Bull. Coll. Sci., Univ. Ryukyus, No. 57, 12, Pl. 1, figs. 7a-8b.

Holotype: NSM, Micropal. Coll. (not numbered; Ujiie & Hatta, 1992, Pl. 16, figs. 5a-c), Paratypes: (Ujiie & Hatta, 1994, Pl. 1, figs. 7a, b, 8a, b).

Loc. 16, Sekisei-sho, between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 4 m

Recent

***Spiroloculina akiensis* Kurihara, 1968**

Palaentol. Soc. Japan, Trans. Proc., N. S., no. 70, 278, Pl. 28, figs. 2-3.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68035, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68036 (Pl. 28, fig. 4).

A hillside cliff at Minamihabuki, Nishinohama, Ha-machi, Muroto City, Kochi Pref., Japan

Nobori Formation (middle part), Tonohama Group

Early Pliocene

***Spiroloculina costata* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 84, Text-figs. 37a, b.

Holotype: (unknown).

Asamushi Marine Biological Station, Mutsu Bay, Aomori Pref., Japan

Recent

***Spiroloculina cushmani* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 83, Text-figs. 36a, b.

Holotype: (unknown).

Asamushi Marine Biological Station, Mutsu Bay, Aomori Pref., Japan

Recent

***Spirophthalmidium arenarium* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 137, Pl. 11, figs. 3a, b.

Holotype: IGPS no. 60865.

Hoppo, Hoppo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds

Tertiary

***Spiroplectamina henmii* Oki, 1989**

South Pacific Study, v. 10, no. 1, 74, Pl. 2, fig. 7a.

Holotype: ESK F-7359.

St. 99, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °19.9'N, 130 °46.2'E)

Water depth: 42 m

Recent

***Spiroplectamina henmii* Oki, 1989**

South Pacific Study, v. 10, no. 1, 74, Pl. 2, fig. 7b.

Paratype: ESK F-7360.

St. 136, bay mouth of Kagoshima Bay, Kagoshima Pref., Japan (31 °10.1'N, 130 °44.4'E)

Water depth: 60 m

Recent

***Spiroplectamina higuchii* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 27, Pl. 4, figs. 1a, b.

Holotype: IGPS no. 67134.

Senpuku, Tano-cho, Aki-gun, Kochi Pref., Japan (33 °25'48"N, 134 °0'34"E)

Ananai Formation

Pliocene

***Spiroplectamina kujukuriensis* Higuchi, 1965**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 60, 180, Pl. 21, figs. 1a, b.

Holotype: (unknown).

A well at Kujukuri-machi, Sanbu-gun, Chiba Pref. (Boso Peninsula), Japan

Kiwada Formation (upper part), Kazusa Group (a core at a depth of 860 m)

Pliocene

***Spiroplectamina niigataensis* Asano & Inomata, 1952**

Illust. Cat. Japan. Small. Foram., suple. 1, 4, Figs. 15, 16 .

Holotype: IGPS no. 75252, Paratype: (Fig. 17)

Araya, Kawaguchi-mura (Araya, Kawaguchi-machi), Kitauonuma-gun, Niigata Pref., Japan (37 °18.0'N, 138 °51.6'E)

Araya Formation

Miocene

***Spiroplectamina shibataensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 106, Pl. 25, fig. 2.

Holotype: IGPS no. 85040.

643.6 m of Shibata R-16 Well of Teikoku Oil Company, at

Shibata City, Niigata Pref., Japan

Shiia Formation (a core at a depth of 643.6 m)

Miocene

***Spirosgmoilnella compressa* Matsunaga, 1955**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 18, 50, Text-figs. 1, 2 .

Holotype: Paleont. Lab., Teikoku Oil Company, Tokyo, 601451.

A core in Yahiko R-2 Well of the Teikoku oil Company, 80 m E of Yahagi, Yahiko-mura, Nishi-Kanbara-gun, Niigata Pref., Japan

Teradomari Formation (844.8 m in depth)

Miocene

***Streblodes pseudotepidus* Ujiie, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 54, 167, Pl. 31, figs. 4a-c.

Holotype: NSM, Micropal. Coll. (not numbered).

Loc. 35, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan

Water depth: 23 m

Recent

***Streblus ketienziensis* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 59, Pl. 2, figs. 5a-c.

Holotype: National Taiwan Univ. (not numbered).

Kechienji, Nango-mura, Ogasa-gun (Kechienji, Kakegawa City), Shizuoka Pref., Japan

Kechienji Formation

Pliocene

***Streblus nakamurai* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 62, Pl. 1, figs. 4a-c.

Holotype: National Taiwan Univ. (not numbered).

Turuoka, Sanuki-mati, Kimitu-gun (Tsuruoka, Futtsu City), Chiba Pref. (Boso Peninsula), Japan

Pliocene

***Streblus sikokuensis* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 61, Pl. 1, figs. 1a-c.

Holotype: National Taiwan Univ. (not numbered).

Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan

Konomine Formation

Pliocene

***Streblus takanabensis* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 57, Pl. 1, figs. 5a-c.

Holotype: National Taiwan Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan

Koonji Formation
Pliocene

***Streblus tosaensis* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 56, Pl. 1, figs. 6a-c.

Holotype: National Taiwan Univ. (not numbered).

Road cut at Tonohama, Yasuda-cho, Aki-gun, Kochi Pref., Japan

Konomine Formation
Pliocene

***Streblus yabei* Ishizaki, 1948**

Acta Geol. Taiwanica, Natl. Taiwan Univ., Sci. Rep. 1st Ser., v. 2, no. 1, 53, Pl. 1, figs. 2, 3.

Holotype: National Taiwan Univ. (not numbered).

Asuka, Taruki-mura, Ogasa-gun (Asuka, Kakegawa City), Shizuoka Pref., Japan

Dainichi sand

Pliocene

***Suggrunda yahikoensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 111, Pl. 41, figs. 10, 11.

Holotype: IGPS no. 85243.

A core at a depth of 137 m in Yahiko R-1 Well of Teikoku Oil Company, Yahiko-mura, Nishikanbara-gun, Niigata Pref., Japan
Shiia Formation

Miocene

***Textularia andenensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 3, 2, Figs. 5, 6.

Holotype: IGPS no. 67083.

A sea-cliff at 700 m W of Anden, Iriai-mura, Minami-akita-gun (Anden, Iriai, Oga City), Akita Pref. (Oga Peninsula), Japan (39°58.0'N, 139°51.2'E)

Shibikawa Formation

Pliocene

***Textularia aokii* Asano, 1936**

Japanese Jour. Geol. Geogr., v. 13, nos. 3-4, 325, Pl. 36, figs. 1a, b.

Holotype: IGPS no. 21330A.

Hosoya, Haranotani-mura, Ogasa-gun (Hosoya, Kakegawa City), Shizuoka Pref., Japan (34°47.8'N, 137°57.2'E)

Hosoya Formation, Kakegawa Group

Pliocene

***Textularia bantamensis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 113, Pl. 17(1), figs. 16a, b.

Holotype: IGPS no. 21406.

St. 1, Bodjong, Bantam, West Java, Indonesia
Formation VI

Pliocene

***Textularia cuneata* Hada, 1931**

Tohoku Imp. Univ., Sci. Rep., 4th Ser., Biol., v. 6, no. 1, 71, Text-figs. 24a, b.

Holotype: (unknown).

Mutsu Bay, Aomori Pref., Japan

Recent

***Textularia hakusikeiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 90, Pl. 5, figs. 6a, b.

Holotype: IGPS no. 63737.

Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)

Unsui group (lowest part)

Late Tertiary

***Textularia hoppoensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 134, Pl. 10, figs. 4a, b.

Holotype: IGPS no. 60855.

Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds (lowest part)

Tertiary

***Textularia imariensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 53, Pl. 8, figs. 2a, b.

Holotype: IGPS no. 77182, Paratype: (Pl. 8, figs. 3a, b)

IGPS loc. no. Sa-4 (Karatsu Coal-field), Takaze, Minamihata-cho, Imari City, Saga Pref., Japan (33°19.7'N, 129°55.8'E)

Kishima Formation

Oligocene

***Textularia intosiana* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 134, Pl. 10, figs. 5, 6.

Holotype: IGPS no. 60856.

Biaisi, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)

Lower Byoritu beds (lowest part)

Tertiary

***Textularia kansireiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 87, Pl. 5, figs. 1a, b.

Holotype: IGPS no. 63732.

Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)

Kansirei Group

Late Tertiary

***Textularia kattegatensis* Höglund *kagoshimaensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 76, Pl. 3, fig. 2a.
 Holotype: ESK F-7434, Paratype: ESK F-7435 (Pl. 3, fig. 2b).
 St. 42, inner part of Kagoshima Bay, Kagoshima Pref., Japan
 (31°39.2'N, 130°48.9'E)
 Water depth: 170 m
 Recent

***Textularia kuwanoi* Oki, 1989**

South Pacific Study, v. 10, no. 1, 77, Pl. 3, fig. 3.
 Holotype: ESK F-7467.
 St. 42, inner part of Kagoshima Bay, Kagoshima Pref., Japan
 (31°39.2'N, 130°48.9'E)
 Water depth: 170 m
 Recent

***Textularia notoensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 20, Pl. 1, fig. 4.
 Holotype: IGPS no. 75268, Paratype: (Pl. 1, fig. 5)
 IGPS loc. no. Iw-16, Gonda, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37°21.4'N, 137°07.2'E)
 Higashi-innai Formation
 Miocene

***Textularia rokuzyukeiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 89, Pl. 5, figs. 5a, b.
 Holotype: IGPS no. 63736.
 Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
 Kansirei Group (upper part)
 Late Tertiary

***Textularia satoi* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 385, Pl. 18, figs. 1a, b.
 Holotype: Fac. Tech., Univ. Tokyo, TU1005, Paratype: Fac. Tech., Univ. Tokyo, TU1006 (Pl. 18, figs. 2a, b).
 St. 44, off the mouth of the River Shinano, Niigata Pref., Japan Sea (38°43.8'N, 139°12'55.8"E)
 Water depth: 60 m
 Recent

***Textularia sineiensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 89, Pl. 5, figs. 4a, b.
 Holotype: IGPS no. 63733.
 Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
 Kansirei Group
 Late Tertiary
 (*Textularia sin'eiensis* in the original description.)

***Textularia sintikuensis* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 135, Pl. 10, figs. 7a, b.
 Holotype: IGPS no. 60858.
 Syomon, Sinpo-syo, Sintiku-gun, Sintiku Pref., northern Taiwan (Formosa)
 Upper Byoritu beds
 Tertiary

***Textularia sirakawaensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 88, Pl. 5, figs. 2a, b.
 Holotype: IGPS no. 63734.
 Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
 Kansirei Group
 Late Tertiary

***Textularia tainanensis* Nakamura, 1942**

Collection of essays on Geology and Paleontology by the late Masayosi Nakamura, 88, Pl. 5, figs. 3a, b.
 Holotype: IGPS no. 63735.
 Kansirei, Sirakawa-syo, Sin'ei-gun, Tainan Pref., southern Taiwan (Formosa)
 Kansirei Group
 Late Tertiary

***Textularia taiwanica* Nakamura, 1937**

Japanese Jour. Geol. Geogr., v. 14, nos. 3-4, 135, Pl. 10, figs. 8a, b.
 Holotype: IGPS no. 60859.
 Taiko, Hoppo-syo, Tikuto-gun, Sintiku Pref., northern Taiwan (Formosa)
 Lower Byoritu beds
 Tertiary

***Textularia uedai* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 611, Pl. 30, figs. 1a, b.
 Holotype: IGPS no. 21363A.
 Muraoka-mura, Kamakura-gun (Fujisawa City), Kanagawa Pref., Japan
 Tomioka beds (Tomioka)
 Pliocene

***Textularia yatsushiroensis* Murata, 1951**

Kyushu Inst. Technol., Bull., no. 1, 96, Pl. 1, figs. 1a, b.
 Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).
 Iwasaka, Yatsushiro-mura (Iwasaka, Kunitomi-cho), Higashimorogata-gun, Miyazaki Pref., Japan (32°02.2'N, 131°17.5'E)
 Kamihokita Formation
 Miocene

***Tosaia hanzawai* Takayanagi, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 30, Pl. 4, figs. 7a, b.

Holotype: IGPS no. 67147.

Ko-25, a cliff, 100 m E of Nobori, Hane-mura, Aki-gun (Nobori, Hane-cho, Muroto City), Kochi Pref., Japan (33 °22'09"N, 134 °3'33"E)

Nobori Formation

Pliocene

***Trifarina maiyai* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 9, figs. 2a, b.

Holotype: IGPS no. 98120.

Sample PRN51, Mikasaporonai River, Mikasa City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Trifarina maiyai* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 9, figs. 4a, b.

Paratype: IGPS no. 98121.

Sample UTN04, Utsunai River, NW of Nakatombetsu, (Hamatombetsu-cho), Hokkaido, Japan

Utsunai Formation

Late Eocene

***Trifarina maiyai* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 9, figs. 3a, b.

Paratype: IGPS no. 98122.

Sample KUM45, Kumanosawa, Yubari City, Hokkaido, Japan

Poronai Formation

Late Eocene

***Trifarina shikokuensis* Kurihara, 1968**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 70, 279, Pl. 28, fig. 16.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 68041.

Near a hilltop, 300 m W of Nobori, Hane-cho, Muroto City, Kochi Pref., Japan

Nobori Formation (upper part), Tonohama Group

Early Pliocene

***Triloculina amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 18, Textfigs. 5a-c; Pl. 4, figs. 9a-c.

Holotype: UMUT CF 58067.

Take, Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °29'39"N, 130 °6'21"E)

Kyoragi beds (about 50 m below the top), Hondo Group

Middle Eocene

***Triloculina okamotoi* Tai, 1959**

Hiroshima Univ., Jour. Sci., Ser. C, v. 2, no. 4, 384, Pl. 39, figs. 4a, b.

Holotype: IGMSH coll. (not numbered).

Road side cutting at Takuno, Nima-machi, Ooda City (Takuno-machi, Nima-cho, Nima-gun), Shimane Pref., Japan

Kawai Formation

Miocene

***Triloculina suttuensis* Asano, 1936**

Geol. Soc. Japan, Jour., v. 43, no. 515, 621, Pl. 33, figs. 2a-c.

Holotype: IGPS no. 21373A.

Kaigarasawa, 300 m W of Nishinosawa, Kuromatsunai-mura (Nishinosawa, Kuromatsunai-cho), Suttu-gun, Hokkaido, Japan

(42 °39.3'N, 140 °16.5'E)

Nakanosawa beds (Setana Formation)

Pliocene

***Triloculina tubiformis* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 116, Pl. 17(1), figs. 9a, b.

Holotype: IGPS no. 21404.

St. no. 1, Bodjong, Bantam, West Java, Indonesia

Formation VI

Pliocene

***Trimosina otukai* Uchio, 1953**

Japanese Jour. Geol. Geogr., v. 23, 155, Pl. 14, figs. 3a, b.

Holotype: UMUT CF 3047.

Great cliff facing Tokyo Bay at Sakurai, Kisarazu City, Chiba Pref., Japan

Sakurai Formation

Pleistocene

***Trimosina? takayanagii* Oki, 1989**

South Pacific Study, v. 10, no. 1, 118, Pl. 12, fig. 2a.

Holotype: ESK F-9261, Paratype: ESK F-9262 (Pl. 12, figs. 2b, g).

St. 104, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °18.0'N, 130 °46.9'E)

Water depth: 38 m

Recent

***Trimosina? takayanagii* Oki, 1989**

South Pacific Study, v. 10, no. 1, 118, Pl. 12, fig. 2c.

Paratype: ESK F-9263.

St. 99, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °19.9'N, 130 °46.2'E)

Water depth: 42 m

Recent

***Trochammina amakusaensis* Fukuta, 1962**

Geol. Survey Japan, Rep., no. 194, 13, Text-fig. 4, Pl. 4, figs. 1a, b.

Holotype: UMUT CF 58046, Paratypes: UMUT CF 58047-58049 (Pl. 4, figs. 2a-4).

Take, Reihoku-machi, Shimo-shima, Kumamoto Pref. (Shimajima, Amakusa Islands), Japan (32 °29'39"N, 130 °6'21"E)

Kyoragi beds (about 50 m below the top), Hondo Group
Middle Eocene

***Trochammina asagaiensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 5, 474, Fig. 1, no. 2a-c.

Holotype: IGPS no. 67030, Paratypes: (Fig. 1, nos. 3, 4a-c)
500 m N of Yumoto Railway Station, Yumoto-machi, Ishiki-gun (Joban-yumoto-machi, Iwaki City), Fukushima Pref., Japan (37 °00.5'N, 140 °51.3'E)

Asagai Formation
Oligocene

***Trochammina ashiyaensis* Murata, 1953**

Kyushu Inst. Technol., Bull., no. 3, 6, Pl. 1, figs. 6a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. MO-3, Asakawa, Wakamatsu-ku, Kitakyushu City, Fukuoka Pref., Japan (33 °52'20.4"N, 130 °42'17.8"E)

Yamaga Formation (30 m below the top, Ashiya Group)
Late Oligocene

***Trochammina enouraensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 69, Pl. 13, figs. 2a-c.

Holotype: IGPS no. 77215.

Roadcut, S of Kawauchi, Toishi-mura (Kawauchi-machi, Nagasaki City), Nagasaki Pref., Japan (32 °46.3'N, 129 °59.3'E)

Enoura Formation
Eocene

***Trochammina hadai* Uchio, 1962**

Seto Marine Biol. Lab., Publ., v. 10, no. 2, 387, Pl. 18, figs. 9a-c.

Holotype: Fac. Tech., Univ. Tokyo, TU1009.

St. 70, off the mouth of the River Shinano, Niigata Pref., Japan Sea (37 °59'45.4"N, 139 °11'53.8"E)

Water depth: 45 m
Recent

***Trochammina japonica* Ishiwada, 1950**

Geol. Survey Japan, Bull., v. 1, no.4, 190, Figs. 2a-c.

Holotype: Geol. Surv. Japan (not numbered).

Station 62, off Tomari, Toyama Pref., Toyama Bay, Japan Sea (37 °05.4'N, 137 °37.8'E)

Water depth: 947 m
Recent

***Trochammina nipponica* Asano, 1953**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 10, 54, Figs. 5a-c.

Holotype: IGPS no. 75288.

600 m W of Inuno-sawa, Wakka, Yoshino-machi (Wakka, Shintotsukawa-cho), Kabato-gun, Hokkaido, Japan (43 °35.7'N, 141 °42.5'E)

Wakkauenbetsu Formation
Middle Miocene

***Trochammina nobensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 11, 8, Figs. 3, 4 .

Holotype: IGPS no. 67101.

Valley cliff at Nobe-gawa, Muikaichi-mura, Koshi-gun (Muikaichi-machi, Nagaoka City), Niigata Pref., Japan (37 °18.5'N, 138 °51.2'E)

Higashiyama Formation
Miocene

***Trochammina osumiensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 80, Pl. 3, fig. 9a.

Holotype: ESK F-7623.

St. 75, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °27.7'N, 130 °35.4'E)

Water depth: 93 m
Recent

***Trochammina osumiensis* Oki, 1989**

South Pacific Study, v. 10, no. 1, 80, Pl. 3, fig. 9b.

Paratype: ESK F-7624.

St. 100, central part of Kagoshima Bay, Kagoshima Pref., Japan (31 °18.1'N, 130 °37.5'E)

Water depth: 75 m
Recent

***Trochammina symmetrica* Ujiie & Watanabe, 1960**

Tokyo Kyoiku Daigaku, Sci. Rep., sec. C (Geol. Mineral. and Geogr.), no. 63, 134, Pl. 1, figs. 10a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50681, Paratype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50659 (Pl. 1, fig. 11).

Kami-ashibetsu, Ashibetsu City (northern Ishikari Coal-field), Hokkaido, Japan
Poronai Formation
Eocene

***Uhlagina boninensis* Yabe & Hanzawa, 1922**

Japanese Jour. Geol. Geogr., v. 1, no. 2, 72, Pl. 12, figs. 1-11.

Holotype: (unknown).

Oki-mura, Haha-jima (Hillsborough Island), Ogasawara (Bonin), Tokyo, Japan

Nummulitic tuff
Middle Eocene

***Uvigerina akitaensis* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 2, 14, Fig. 62.

Holotype: IGPS no. 66945, Paratypes: (Figs. 60, 61)

A cliff at Oibanazaki, Wakimoto-mura, Minami-akita-gun (Oibanazaki, Oga City), Akita Pref. (Oga Peninsula), Japan (39 ° 53.7'N, 139 ° 53.6'E)

Wakimoto Formation
Pliocene

***Uvigerina asanoi* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 113, Pl. 42, figs. 10a, b.

Holotype: IGPS no. 85260.

Yoita-machi, Santo-gun, Niigata Pref., Japan
Nishiyama Formation
Late Miocene or Early Pliocene

***Uvigerina bosoensis* Aoki, 1965**

Saitama Univ., Sci. Rep., Ser. B., v. 5, no. 1, 54, Pl. 7, fig. 13.

Holotype: Saitama Univ. Paleont. Coll. Reg. 11205, Paratype: Saitama Univ. Paleont. Coll. Reg. 11206 (Pl. 7, fig. 14).

Nr. 1567, 0.8 km NW of Sano, S of Otaki-machi, Isumi-gun, Chiba Pref. (Boso Peninsula), Japan
Kiwada Formation, Kazusa Group
Earliest Pleistocene

***Uvigerina flintii* Cushman *semataensis* Aoki, 1965**

Saitama Univ., Sci. Rep., Ser. B., v. 5, no. 1, 54, Pl. 7, fig. 23.

Holotype: Saitama Univ. Paleont. Coll. Reg. 11207, Paratype: Saitama Univ. Paleont. Coll. Reg. 11208 (Pl. 7, fig. 24).

Nr. 167, Semata-no-seki, E of Semata, Toke-machi, Sambu-gun (Semata, Ichihara City), Chiba Pref., Japan
Semata Formation, Shimosa Group
Middle Pleistocene

***Uvigerina miuraensis* Aoki, 1965**

Saitama Univ., Sci. Rep., Ser. B., v. 5, no. 1, 55, Pl. 7, fig. 25.

Holotype: Saitama Univ. Paleont. Coll. Reg. 11209, Paratype: Saitama Univ. Paleont. Coll. Reg. 11210 (Pl. 7, fig. 26).

Nr. 1754, 0.7 km NW of Hoshikawa Station, Hoshikawa-machi, Hodogaya-ku, Yokohama City, Kanagawa Pref., Japan
Kamihoshikawa Formation
Late Pliocene

***Uvigerina ombetsuensis* Kaiho, 1984**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 54, no. 2, 122, Pl. 9, figs. 1a-c.

Holotype: IGPS no. 98119.

Sample STNa03, Satombetsu River, W of Kamicharo, Shiranuka-cho, Shiranuka-gun, Hokkaido, Japan
Charo Formation
Eocene

***Uvigerina peregrina* Cushman *shiwoensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 35, Pl. 6, fig. 5.
Holotype: IGPS no. 77174, Paratypes: (Pl. 6, figs. 7, 8)

Soyo-maru St. no. 355, Kii Channel, Japan

Water depth: 439 m

Recent

***Uvigerina peregrina* Cushman *shiwoensis* Asano, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 35, Pl. 6, fig. 6.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 368, off Shima Peninsula, Mie Pref., Japan
Water depth: 600 m
Recent

***Uvigerina pseudoampullacea* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 613, Pl. 17(6), fig. 28.
Holotype: IGPS no. 21428.

Soyo-maru St. no. 345, off Muroto-zaki, Kochi Pref., Japan
Water depth: 199-165 m
Recent

***Uvigerina pseudoampullacea* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 613, Pl. 17(6), fig. 29.
Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

Soyo-maru St. no. 297, near Tanegasima, Kagoshima Pref., Japan
Water depth: 516 m
Recent

***Uvigerina sakasegawaensis* Asano & Murata, 1958**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 29, 66, Pl. 10, fig. 13.

Holotype: IGPS no. 77209, Paratype: (Pl. 10, fig. 14)

About 1 km NE of Sakasegawa-mura (Sakasegawa, Reihoku-cho), Amakusa-gun, Kumamoto Pref. (Shimojima, Amakusa Islands), Japan (32 ° 31.8'N, 130 ° 06.0'E)
Sakasegawa Formation (middle part)
Eocene

***Uvigerina schencki* Asano, 1950**

Illust. Cat. Japan. Small. Foram., pt. 2, 17, Fig. 75.

Holotype: IGPS no. 66939, Paratype: (Fig. 74)

Road cutting between Takaya and Watanai, Fujisawa City, Kanagawa Pref., Japan (35 ° 20.2'N, 139 ° 30.2'E)
Tomioka Formation
Pliocene

***Uvigerina substriata* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 614, Pl. 17(6), fig. 21.

Holotype: IGPS no. 21430, Paratype: (Pl. 17(6), fig. 22)

S of Sanuki-machi, Kimitsu-gun (Sanuki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 ° 15.0'N, 139 ° 53.3'E)
Nagahama Formation (Sanuki Formation)
Pliocene

***Uvigerina urnula* d'Orbigny *shiiyaensis* Matsunaga, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 35, no. 2, 114, Pl. 43, figs. 4a, b.

Holotype: IGPS no. 85266.

A core at a depth of 1408 m in Umeda R-1 Well of Teikoku Oil Company, Umeda, Nishigoshi-mura (Umeda, Washima-mura), Santo-gun, Niigata Pref., Japan

Shiia Formation

Miocene

***Uvigerina yabei* Asano, 1938**

Geol. Soc. Japan, Jour., v. 45, no. 538, 613, Pl. 17(6), fig. 1.

Holotype: IGPS no. 21429, Paratype: (Pl. 17(6), fig. 2)

A cliff at Oibanazaki, Wakimoto-mura, Minami-akita-gun (Oibanazaki, Oga City), Akita Pref. (Oga Peninsula), Japan (39° 53.7'N, 139° 53.6'E)

Wakimoto Formation

Pliocene

***Uvigerina yokohamaensis* Aoki, 1965**

Saitama Univ., Sci. Rep., Ser. B., v. 5, no. 1, 58, Pl. 7, fig. 11.

Holotype: Saitama Univ. Paleont. Coll. Reg. 11224, Paratype: Saitama Univ. Paleont. Coll. Reg. 11225 (Pl. 7, fig. 12).

Nr. 1754, 0.7 km NW of Hoshikawa Station, Hoshikawa-machi, Hodogaya-ku, Yokohama City, Kanagawa Pref., Japan

Kamihoshikawa Formation

Late Pliocene

***Uvigerinella quadrata* Iwasa, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 712, 17, Text-figs. 3a-c.

Holotype: IGPS no. 65503.

Rotary no. 1 Well at 150 m E of the Funaoka Shrine, Funaoka, Honjo City, Akita Pref., Japan

Osawa Formation

Pliocene

***Vaginulina awaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 208, Pl. 26(3), fig. 8.

Holotype: IGPS no. 21477, Paratype: (Pl. 26(3), fig. 9)

100 m N of Hirose, Kokubu-mura (Ichiba, Miyoshi-mura), Awa-gun, Chiba Pref. (Boso Peninsula), Japan (35° 10.4'N, 139° 55.0'E)

Kiwada Formation

Pliocene

***Vaginulina boso* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 208, Pl. 27(4), fig. 1.

Holotype: IGPS no. 21474, Paratypes: (Pl. 27(4), figs. 2, 3)

Semata, Ichito-mura, Ichihara-gun (Semata, Ichihara City), Chiba Pref., Japan (35° 32.0'N, 140° 12.5'E)

Semata Formation

Pleistocene

***Vaginulina chugokuensis* Murata, 1954**

Kyushu Inst. Technol., Bull., (Math. & Nat. Sci.), no. 4, 73, Pl.

1, figs. 3a, b.

Holotype: Mining Dept., Kyushu Inst. Technol. (not numbered).

Loc. MM-101, Yoshino, Sho-ou-cho, Katsuta-gun, Okayama Pref., Japan (35° 02'50.4"N, 134° 09'36.5"E)

Katsuta Group

Early Miocene

***Vaginulina mimataensis* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 15, 15, Fig. 76.

Holotype: IGPS no. 21476. (Asano, 1938, Pl. 27(4), fig. 6)

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref., Japan (35° 14.8'N, 140° 15.2'E)

Kiwada Formation

Pliocene

(New name for *Vaginulina tibaensis* Asano *striata* Asano, 1938 (not of Costa, 1856).)

***Vaginulina miuraensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 207, Pl. 28(5), fig. 26.

Holotype: IGPS no. 21473.

300 m NW of Kamimiyata, Hatsuse-mura, Miura-gun (Kamimiyata, Minamishitaura-machi, Miura City), Kanagawa Pref., Japan (35° 10.7'N, 139° 39.5'E)

Hatsuse Formation

Pliocene

***Vaginulina miuraensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 207, Pl. 28(5), fig. 25.

Paratype: Inst. Geol. Paleont., Tohoku Univ. (not numbered).

500 m NE of Shimomiyata, Hatsuse-mura, Miura-gun (Shimomiyata, Hatsuse-machi, Miura City), Kanagawa Pref., Japan (35° 10.7'N, 139° 38.6'E)

Hatsuse Formation

Pliocene

***Vaginulina otukai* Uchio, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 671, 370, Pl. 5, figs. 4a-c.

Holotype: UMUT CF 3016.

Southern cliff facing railroad, 600 m NW of Momiyama Station on the Tobu Electric Railway, Momiyama-machi, Kanuma City, Tochigi Pref., Japan (36° 32.0'N, 139° 44.2'E)

Momiyama Member, Kanuma Formation

Miocene

***Vaginulina tibaensis* Asano *striata* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 208, Pl. 27(4), fig. 6.

Holotype: IGPS no. 21476.

100 m N of Mimata, Fusamoto-mura (Mimata, Otaki-machi), Isumi-gun, Chiba Pref. (Boso Peninsula), Japan (35° 14.8'N, 140° 15.2'E)

Kiwada Formation

Pliocene

(*nom. nud.* owing to junior homonym of *Vaginulina striata* Costa, 1856. New name has been given as *Vaginulina mimataensis* by Asano, 1951.)

***Vaginulina tibaensis* Asano, 1938**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 2, 208, Pl. 27(4), fig. 4.

Holotype: IGPS no. 21475, Paratype: (Pl. 27(4), fig. 5)

Semata, Ichito-mura, Ichihara-gun (Semata, Ichihara City), Chiba Pref., Japan (35 °32.0'N, 140 °12.5'E)

Semata Formation

Pliocene

***Vaginulina yoshihamaensis* Inoue & Nakaseko, 1951**

Geol. Soc. Japan, Jour., v. 57, no. 664, 10, Fig. 2.

Holotype: Geol. Inst. Kyoto Univ.(?)

1 km SW of Yoshihama, Sakuma-mura (Yoshihama, Kyonan-machi), Awa-gun, Chiba Pref. (Boso Peninsula), Japan (35 °07.0'N, 139 °50.0'E)

Sakuma Formation

Miocene

***Vaginulinopsis asanoi* Ishizaki, 1942**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 32, no. 221, 106, Text-figs. 1-3.

Holotype: Taipei Imp. Univ. (not numbered).

Road-side cutting near Hagenoshita, Uwa-mura (Hagenoshita, Mochida, Takanabe-cho), Koyu-gun, Miyazaki Pref., Japan (32 °08.5'N, 131 °31.1'E)

Koonji Formation

Pliocene

***Vagocibicides nipponicus* Uchio, 1951**

Palaentol. Soc. Japan, Trans. Proc., N. S., no. 2, 41, Pl. 3, figs. 8a, b.

Holotype: UMUT CF 3015.

Loc. 11, 1000 m SWW of Kazusaminato Railway Station of West Boso Line, Tomiya, Takeoka-mura, Kimitsu-gun (Tomiya, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °12.7'N, 139 °51.3'E)

Tomiya tuffaceous sandstone

Pliocene

***Valvorotalia minuta* Ujiie, 1997**

Bull. Coll. Sci., Univ. Ryukyus, No. 63, 127, Pl. 2, figs. 3a-c.

Holotype: NSM, Micropal. Coll. (not numbered).

Core H3571, Hess Rise, N. Pacific (34 °11.7'N, 179 °15.4'E)

Late Pleistocene to Holocene

***Valvulineria fujikawaensis* Akimoto, 1991**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 61, no. 1, 88, Pl. 1, figs. 2a-c.

Holotype: IGPS no. 100603, Paratypes: IGPS nos. 100665 &

100666 (Pl. 7, figs. 1a, b, 2a, b).

ISH01, near the hamlet of Kanzaka, Shimobe-cho, Nishiyatsushiro-gun, Yamanashi Pref., Japan (35 °27.42'N, 138 °29.15'E)

Kanzaka Formation (basal part)

early Middle Miocene

***Valvulineria fukushimensis* Fujita & Ito, 1957**

Geol. Soc. Japan, Jour., v. 63, no. 744, 511, Pl. 10, figs. 24a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50111.

Canal at Hosoya, Oota-mura (Hosoya, Yanagawa-machi), Date-gun, Fukushima Pref., Japan

Date Formation

Miocene

***Valvulineria gunjii* Akimoto, 1990**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), v. 60, no. 2, 216, Pl. 21, figs. 6a-c.

Holotype: IGPS no. 101119.

KT86-11-P8, Nankai Trough, about 140 km S of Hamamatsu, Shizuoka Pref., Japan (33 °34.5'N, 139 °53.00'E)

Water depth: 4031 m (top of sediment core)

Recent

***Valvulineria ijimai* Ujiie, 1959**

Chichibu Mus., Nat. Hist., Bull., no. 9, 85, Pl. 2, figs. 6a-c.

Holotype: Inst. Geol. Min., Tokyo Univ. Edu., Reg. No. 50237,

Paratypes: Inst. Geol. Min., Tokyo Univ. Edu., Reg. Nos. 50238, 50493 & 50494 (Pl. 2, fig. 7; Text-figs. 1, 2).

Minano-machi, Chichibu-gun, Saitama Pref., Japan

Nenokami Formation

Early Miocene

***Valvulineria japonica* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 7, Figs. 49-51.

Holotype: IGPS no. 67178.

100 m N of Seki, Sekitoyo-mura, Kimitsu-gun (Seki, Futtsu City), Chiba Pref. (Boso Peninsula), Japan (35 °11.5'N, 139 °59.2'E)

Kiwada Formation

Pliocene

***Valvulineria masudai* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 20, Pl. 3, figs. 16a-c.

Holotype: IGPS no. 75270.

IGPS loc. no. Iw-18, Kunimitsu, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 °22.5'N, 137 °05.8'E)

Najimi Formation

Miocene

***Valvulineria nipponica* Ishizaki, 1944**

Trans. Nat. Hist. Soc. Taiwan (Formosa), v. 34, no. 244, 103, Pl. 3, figs. 7a-c.

Holotype: Taipei Imp. Univ. (not numbered).
Shigino, Uwae-mura, Koyo-gun, Miyazaki Pref., Japan (32 ° 08.5'N, 131 ° 31.1'E)
Koonji Formation
Pliocene

***Valvulineria osakaensis* Chiji, 1956**

In Nakaseko and Chiji, Osaka Univ., North and South Colleges, Sci. Rep., no. 5, 63, Figs. 6a-c.
Holotype: Div. Geosci. Inst. Polytech., Osaka City Univ., Coll. Cat. No. CF 2504.
Boring "UFS", Shimofukushima Second. School, Shimofukushima, Fukushima-ku, Osaka City, Osaka Pref., Japan
17.58-17.89 m in depth
Holocene

***Valvulineria sadonica* Asano, 1951**

Illust. Cat. Japan. Small. Foram., pt. 14, 8, Figs. 55-57.
Holotype: IGPS no. 67179.
A sea-cliff facing Mano Bay, Sawane, Sawane-machi (Sawane, Sawata-machi), Sado-gun, Niigata Pref., Japan (37 ° 59.8'N, 138 ° 16.7'E)
Sawane Formation
Pliocene

***Virgulina akitaensis* Iwasa, 1955**

Geol. Soc. Japan, Jour., v. 61, no. 712, 17, Text-figs. 2a, b.
Holotype: IGPS no. 65502.
Rotary no. 1 Well at 150 m E of the Funaoka Shrine, Funaoka, Honjo City, Akita Pref., Japan
Osawa Formation
Pliocene

***Virgulina complanata* Egger *fugeshiensis* Asano, 1953**

Tohoku Univ., Inst. Geol. Paleontol., Short Papers, no. 5, 20, Pl. 2, fig. 22.
Holotype: IGPS no. 75269.
IGPS loc. no. Iw-15, Wasumi, Yanagida-mura, Fugeshi-gun, Ishikawa Pref. (Noto Peninsula), Japan (37 ° 20.9'N, 137 ° 06.5'E)
Higashi-innai Formation
Miocene

***Virgulina honyaensis* Asano, 1953**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 11, 57, Fig. 6.
Holotype: IGPS no. 75290.
Yagawase, Taira, Iwaki City, Fukushima Pref., Japan (37 ° 02.7'N, 140 ° 54.0'E)
Honya shale (Honya Formation)
Miocene

***Virgulina ishikiensis* Asano, 1949**

Jour. Paleontol., v. 23, no. 4, 428, Fig. 1, no. 45.
Holotype: IGPS no. 67041, Paratypes: (Fig. 1, nos. 46, 48, 56)

Road-side cutting at Kokozura, Nakoso-machi, Ishiki-gun (Kokozura, Nakoso-machi, Iwaki City), Fukushima Pref., Japan (36 ° 51.5'N, 140 ° 48.0'E)
Kokozura Formation
Middle Miocene

***Virgulina kushiroensis* Yoshida, 1957**

Palaeontol. Soc. Japan, Trans. Proc., N. S., no. 26, 64, Text-figs. 10, 11 .
Holotype: Hokkaido Gakugei Univ., no. 561256.
Sea cliff at Konbumori, Kushiro-cho, Kushiro-gun Hokkaido, Japan
Shitakara Formation
Late Eocene or Early Oligocene

***Virgulina makiyamai* Chiji, 1961**

Osaka Mus. Nat. Hist., Bull., no. 14, 76, Pl. 1, figs. 3a, b.
Holotype: OMNH Reg. No. F1066F.
A bluff at the hamlet of Sugata, Himi City, Toyama Pref., Japan
Sugata Mudstone (Sugata Formation)
Miocene

***Virgulinea lunata* Yabe & Asano, 1937**

Tohoku Imp. Univ., Sci. Rep., 2nd Ser. (Geol.), v. 19, no. 1, 121, Pl. 17(1), figs. 12a, b.
Holotype: IGPS no. 21399.
St. 848, Tjilegong, Bantam, West Java, Indonesia
Formation VI
Pliocene

***Vulvulina sumitomo* Murata & Sugahara, 1960**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 4, 299, Pl. 32, figs. 1-3.
Holotype: Mining Dept., Kyushu Inst. Technol., coll. cat. no. 14.
Sumitomo Ariake Well, Ariake Bay, Kumamoto Pref., Japan (32 ° 55'N, 130 ° 28'E)
Paleogene

***Wiesnerella ujiiei* Hatta, 1992**

Bull. Coll. Sci., Univ. Ryukyus, No. 53, 62, Pl. 4, figs. 8a-c.
Holotype: NSM, Micropal. Coll. (not numbered).
Loc. 21, Sekisei-sho between Ishigaki and Iriomote Islands, Okinawa Pref., Japan
Water depth: 11 m
Recent

Planktic Foraminifera

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Candeina amicula Takayanagi and Saito, 1962

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Spec. vol., no. 5, p. 101, pl. 28, figs. 13a-c

Holotype: IGPS coll. cat. no 75026

A cliff, 100 m SE of Nobori, Muroto City (formerly Hane-mura, Aki-gun), Kochi Prefecture (33°22'09"N, 134°3'33"E)

Nobori Formation

Pliocene

Dicarinella takayanagii Hasegawa, 1999

Paleontological Research, vol. 3, no. 3, p. 186, fig. 8, 1-4

Holotype: IGPS no. 102515, paratypes: IGPS no. 102513, 102514, 102516

Bottom of the Shirakin (=Hakkinzawa) River (sample SRN-210), 170 m upstream from the third bridge of the Shirakin River from the junction of Shirakin and Penkemoyuparo Rivers, Oyubari, Yubari City, Hokkaido (43°2.60'N, 142°9.73'E)

Lower part of the Takinosawa Formation

Latest Cenomanian

Globanomalina rakhiensis Warraich, Ogasawara and Nishi, 2000

Paleont. Res., vol. 4, no. 4, p. 294, fig. 12

Holotype: IGUT no. 50101, Paratype: IGUT nos. 50102, 50103
Sample R41, Rakhi Nala section, eastern Sulaiman Range, central Pakistan

Dungan Formation; uppermost part

Late Paleocene (P4 Zone)

Globigerina ariakensis Asano, 1962

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 5, p. 55, pl. 20, figs. 5, 7

Holotype (figs. 7a-c), IGPS no. 77223

500 m west of Okubo, Ariake-mura, Amakusa kamishima, Kumamoto Prefecture

Kyoragi Formation

Middle Eocene

Globigerina isahayensis Asano, 1962

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Spec. Vol., no. 5, p. 55, pl. 21, figs. 9a-c

Holotype, IGPS no. 77225

80 m depth in drill hole situated at Kamihara, Enoura-mura,

Kita-takaki-gun, Nagasaki Prefecture

Enoura Formation

Middle Eocene

Globigerina kyushuensis Asano, 1958

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), vol. 29, p. 68, pl. 12, figs. 1a-c

Holotype: IGPS no. 77214

about 1 km W of Kanyama, Itchoda-mura, Amakusa shimojima, Kumamoto Prefecture

Kyoragi Formation

Middle Eocene

Globigerina nipponica Asano, 1957

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), vol. 28, p. 18, pl. 1, figs. 1-3

Holotype: IGPS no. 77167

Soyomaru station no. 355, Kii Channel, Japan (33°28'00"N, 135°25'00"E, 439 m)

Recent

(*Globorotalia inflata* (d'Orbigny): Saito, T., Thompson, P. R. and Breger, D., 1981, Recent and Pleistocene planktonic foraminifera. Univ. Tokyo Press, Tokyo, p. 124)

Globigerina sakitoensis Asano, 1962

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Spec. Vol., no. 5, p. 60, pl. 22, figs. 1a-c

Holotype: IGPS no. 77243

126 m depth in drill hole situated at Nakado, Sakito-machi, Nishisonogi-gun, Nagasaki Prefecture

Nakado Formation

Oligocene

Globigerina weissii Saito, 1963

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), vol. 35, no. 2, p. 188, pl. 54, figs. 13, 14

Holotype: IGPS no. 85321, Paratype: IGPS no. 85322

(Holotype) A road side cliff (sample S-3.5), at foot of an upgrade, about 1 km N of Gomyo, Kakegawa City, Shizuoka Prefecture (Paratype) west bank (sample Od-3) of a northwest

flowing tributary SE of Shuku, Mizunami City, Gifu Prefecture

Saigo Formation (Holotype), Oidawara Formation (Paratype)

Miocene

"Globigerinella" japonica Takayanagi, 1960

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), vol. 32, no. 1, p. 131, pl. 9, figs. 12a, b; text-figs. 22a-e

Holotype: IGPS no. 74975, Paratype: IGPS no. 74894

A section at a river cliff on the right side of the Wakka-uembetsu River about 500 m downstream from the

junction of the Wakka-uembetsu River and the Hannoki-zawa, two tributaries of the Abeshinai Rive, Kowa, Nakagawa-mura,

Nakagawa-gun, Teshio Province, Hokkaido

Usubushinai Formation

Late Cretaceous

(*Globigerinelloides ultramicra* (Subbotina): Takayanagi, Y., Yasuda, H. and Shimamura, K., 1982, Soc. Japan, Spec. Pap., no. 25, p. 108, pl. 19, figs. 5a, b)

***Globigerinoides japonicus* Saito and Maiya, 1973**

Palaeont. Soc. Japan, Trans. Proc., N. S., no. 91, p. 121, pl. 19, figs. 4-6

Holotype: NSMT 678, Paratype: NSMT 677, 679

An exposure on the beach of Daijima at the confluence of a small stream with the sea near the eastern edge of Daijima Village, Oga City, Akita Prefecture

Nishikurosawa Formation

Middle Miocene

***Globigerinoides muratae* Asano, 1962**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 5, p. 62, pl. 23, figs. 7a-c

Holotype: IGPS no. 77248

80 m depth in drill hole situated at Shimuta, Ashiya town, Kitakyushu City, Fukuoka Prefecture

Norimatsu shale Member in the upper part of the Yamaga Formation

Middle Oligocene

(*Globigerinoides muratai* Asano: Takayanagi, Y. and Hasegawa, S., 1987, Checklist and bibliography of post-Paleozoic foraminifera established by Japanese workers, 1890-1986. Toko Print. Co. Ltd., Sendai. p. 21)

***Globoquadrina asanoi* Maiya, Saito and Sato, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 409, pl. 3, figs. 1-3

Holotype and Paratype: coll. no. unwritten

(Holotype) A sea-side cliff (sample N-N-1) on the northern coast of Oga Peninsula. about 500 m NE of Nomura, Oga City, Akita Prefecture: (Paratype) A depth of 760 cm in core RCI0-161 in the North Pacific Ocean (33°05' N, 158°00' E)

Nomura Mudstone Member in the upper part of the Funakawa Formation

Pliocene-Pleistocene

(*Neogloboquadrina asanoi* (Maiya, Saito and Sato): Thompson, P. R., 1980, Init. Repts. DSDP, vol. 56, 57, pt. 2, pl. 3, figs. 10-12)

***Globoquadrina himiensis* Maiya, Saito and Sato, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 410, pl. 4, figs. 1, 2

Holotype and Paratype: coll. no. unwritten

(Holotype) A sea cliff (sample N-YB-65) on the eastern coast of Noto Peninsula, about 1 km E of Ozaki, Himi City, Toyama Prefecture

Yabuta Formation

Pliocene-Pleistocene

(*Neogloboquadrina himiensis* (Maiya, Saito and Sato): Thompson, P. R., 1980, Init. Repts. DSDP, vol. 56, 57, pt. 2, pl. 3, fig. 9)

***Globoquadrina kagaensis* Maiya, Saito and Sato, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 409, pl. 3, figs. 4-6

Holotype and Paratype: coll. no. unwritten

(Holotype) A sea cliff (sample N-YB-65) on the eastern coast of Noto Peninsula, about 1 km E of Ozaki, Himi City, Toyama Prefecture

Yabuta Formation

Pliocene-Pleistocene

(*Trochammina nobensis* Asano: =*Neogloboquadrina nobensis* (Asano): Takayanagi, Y. and Hasegawa, S., 1987, Checklist and bibliography of post-Paleozoic foraminifera established by Japanese workers, 1890-1986. Toko Print. Co. Ltd., Sendai. p. 22)

***Globorotalia adamantea* Saito, 1963**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 35, no. 2, p. 173, pl. 54, figs. 4, 5

Holotype: IGPS no. 79033, Paratype: IGPS no. 79034 and other ten unfigured paratypes

A road side cliff (sample Nz-1), 100 m E of Numazawa, Oguni-machi, Yamagata Prefecture (38°01'18"N, 139°53'04"E)

Numazawa Formation

Miocene

***Globorotalia humerosa* Takayanagi and Saito, 1962**

Tohoku Univ., Sci. Rep., 2nd ser. (Geol.), Spec. Vol., no. 5, p. 78, pl. 28, figs. 1, 2

Holotype: IGPS no 75079

A cliff, 100 m E of Nobori, Muroto City (formerly Hane-mura, Aki-gun), Kochi Prefecture (33°22'09" N, 134°3'33" E)

Nobori Formation

Pliocene

(*Globorotalia (Turborotalia) acostaensis humerosa*: Blow, 1969, Late Middle Eocene to Recent planktonic foraminiferal biostratigraphy. Proc. 1st Intern. Conf. Plankton Microfossils, p. 345.

= *Neogloboquadrina humerosa*: Saito, Thompson and Breger, 1981, Recent and Pleistocene planktonic foraminifera. Univ. Tokyo Press, Tokyo, p. 114, pl. 37, figs. 2a-c)

***Globorotalia (Turborotalia) humerosa* Takayanagi and Saito *praeumerosa* Natori, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 227, pl. 2, figs. 1a-c, 3a-c

Holotype: GSJ no. F 5899

Sample S-30 of Naha-Chinen section. Chinen-son,

Okinawa-jima. Okinawa Prefecture
Yonabaru Formation
Late Miocene - Pliocene

Globorotalia (Globorotalia) ichinosekiensis Takayanagi and Oda, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 374, pl. 1, figs. 1a-c

Holotype: IGPS no. 75026

Southern bank (sample IWA-25) of the Iwai River, 200 m downstream from the junction of the Iwai and Kubo rivers, Kami-kurosawa, Ichinoseki City. Iwate Prefecture

Shimokurosawa Formation

Miocene

Globorotalia ikebei Maiya, Saito and Sato, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 407, pl. 1, figs. 2-4

Holotype and Paratype: coll. no. unwritten

130 m in depth of Japan Petroleum Exploration Company Araya SK-1 well, Niigata Prefecture (37°16' N., 138°50' E)

Shiia Formation

Pliocene

Globorotalia inflata (d'Orbigny) praeinflata Maiya, Saito and Sato, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 408, pl. 2, figs. 5-7

Holotype and Paratype: coll. no. unwritten

(Holotype) Depth of 1130 cm in core V20-119 in the North Pacific Ocean (47°57' N., 168°48' E), (Paratype) ditch-cutting samples taken at a depth of 560 m in Japan Petroleum Exploration Company Daimon SK-1 well, Niigata Prefecture (37°32' N., 138°40' E)

Nishiyama Formation (Paratype)

Late Pliocene- Early Pleistocene

Globorotalia (Globorotalia) iwaiensis Takayanagi and Oda, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 376, pl. 1, figs. 2, 3

Holotype: IGPS no. 75027, Paratype IGPS no. 75028

(Holotype) Southern bank (sample IWA-15) of the Iwai River, 600 m downstream from the junction of the Iwai and Kubo rivers, Kamikurosawa, Ichinoseki City, Iwate Prefecture (Paratype), A roadside cutting near Usuba, 2050 m NE of Isohara Station of the Joban JR Railway, Kitaibaragi City, Ibaragi Prefecture

Shimokurosawa Formation (Holotype), Isohara Formation (Paratype)

Miocene

Globorotalia orientalis Maiya, Saito and Sato, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 408, pl. 1, figs. 5a-c; pl. 2, figs. 1a, b

Holotype and Paratype: coll. no. unwritten

A tributary (sample My 3013) of the Toriyoshi River east of Jyogajima-machi, Nagaoka City, Niigata Prefecture (37°25' N, 138°52' 40" E)

Nishiyama Formation

Pliocene

Globorotalia quinifalcata Saito and Maiya, 1973

Palaeont. Soc. Japan, Trans. Proc., N. S., no. 91, p. 119, Pl. 18, figs. 5, 6

Holotype: NSMT 672, Paratype: NSMT 673

A small road-side cliff (sample N-H-13) in the village of Go, on the north side of the road, about 3 km W of the Ukai railroad station, Ukai City, Kanazawa Prefecture

Hoji Formation

Middle Miocene

Globorotalia (Turborotalia) rikuchiuensis Takayanagi and Oda, 1976

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 372, pl. 1, figs. 4, 5

Holotype: IGPS no. 75024, paratype: IGPS no. 75025

Southern bank (sample IWA-25) of the Iwai River, 200 m downstream from the junction of the Iwai and Kubo rivers, Kami-kurosawa, Ichinoseki City. Iwate Prefecture

Shimo-kurosawa Formation

Miocene

Globorotalia tosaensis Takayanagi and Saito, 1962

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Spec. Vol., no. 5, p. 181, pl. 28, figs. 11, 12

Holotype: IGPS no 75075

a cliff, 100 m E of Nobori, Muroto City (formerly Hane-mura, Aki-gun), Kochi Prefecture (33°22'09" N, 134°3'33" E)

Nobori Formation

Late Pliocene

(*Globorotalia (Turborotalia) tosaensis tosaensis*: Blow, 1969, Proc. 1st Intern. Conf. Plankton Microfossils, p. 357)

Globotruncana hanzawae Takayanagi, 1960

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 1, p. 136, pl. 10, figs. 6a-c

Holotype: IGPS no. 74983

A section (sample Sn-385-8') at a river cliff of the left side of the Deto-futamata River, about 5650 m upstream junction of the Haboro River and the Deto-futamata River, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido

Ug of the Upper Yezo Group

Cretaceous

(*Globotruncana hanzawai*: Takayanagi, Y. and Hasegawa, S., 1987, Checklist and bibliography of post-Paleozoic foraminifera established by Japanese workers, 1890-1986. Toko Print. Co. Ltd., Sendai. p. 22)

***Globotruncana japonica* Takayanagi, 1960**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 1, p. 135, pl. 10, figs. 4a-c

Holotype: IGPS no. 74981

A section at a river cliff of a western tributary of the Akano-sawa, a tributary of the Obirashibe River, about 2500 m upstream from the junction of the Obirashibe River and the Akano-sawa. Obira-mura, Rumoi-gun, Teshio Province, Hokkaido

Late Cretaceous

(*Dicarinella japonica* (Takayanagi): Takayanagi, Yasuda and Shimamura, 1982, Soc. Japan, Spec. Pap., no. 25, p. 111, pl. 21. figs. 5a-c)

***Globotruncana japonica* Takayanagi *robusta* Takayanagi, 1960**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 1, p. 136, pl. 10, figs. 5a-c

Holotype: IGPS no. 74982

A section (sample Ob-3) at a river cliff of a western tributary of the Akano-sawa, a tributary of the Obirashibe River, about 3800 m N72 ° E of Daitengu-dake, and about 3750 m N7 ° W of Kawakami, Obira-mura, Rumoi-gun, Teshio Province, Hokkaido

Upper part (Uj) of the Yezo Group

Late Cretaceous

(*Globotruncana robusta* Takayanagi: Takayanagi, Y. and Hasegawa, S., 1987, Checklist and bibliography of post-Paleozoic foraminifera established by Japanese workers, 1890-1986. Toko Print. Co. Ltd., Sendai. p. 22)

***Globotruncana putahensis* Takayanagi, 1965**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 36, no. 2, p. 221, pl. 27 figs. 2a-c

Holotype: Stanford Univ. Paleo. Type coll. no. 9799

Core at 70-76 feet in Diamond Core Hole No. 5A, Section A, along Putah Creek, California, U.S.A. (about 38 °30' N, 122 ° 03'W)

Forbes Formation

Campanian

***Hastigerina parapelagica* Saito and Thompson, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 283, pl. 2, fig. 2; pl. 6, fig. 6

Holotype: Nat. Mus, Natur. His., Washington, D.C., no. 211734 571 cm below the top of core Core V26-128, Caribbean Sea

(20 °27' N, 83 °22'W, 3868m)

Pleistocene

***Hastigerinopsis digitiformans* Saito and Thompson, 1976**

Saito, Thompson and Breger, p. 285, pl. 2, figs. 3 (Paratype), 4; pl. 6, fig. 5; pl. 8, fig. 2

Holotype: British Mus. no. 1959.5.11.744. (Banner and Blow, 1960, p. 25-26, text-figs. 8a-c), Paratype: British Mus. no. 1959.5.11.745, Nat. Mus, Natur. His., Washington, D.C., no. 211735.

(Paratype) 571 cm below the top of core Core V26-128, Caribbean Sea (20 °27' N, 83 °22'W, 3868 m)

Pleistocene

***Hedbergella kyphoma* Hasegawa, 1999**

Paleontological Research, vol. 3, no. 3, p. 180, fig. 5, 1-4

Holotype: IGPS no. 102504, Paratypes: IGPS nos. 102505-102507

Floor of the Shirakin (=Hakkinzawa) River (sample SRN-525A), 36 m upstream from the fourth bridge of the Shirakin River from the junction of Shirakin and Penkemoyuparo Rivers, Oyubari, Yubari City, Hokkaido (43 °2.50'N, 142 °9.72'E)

Lower part of the Takinosawa Formation

Early Turonian

***Hedbergella madagascarensis* Ujiie and Randrianasolo, 1977**

Natl. Sci. Mus., Tokyo, Bull., Ser. C (Geol. & Paleont.), vol. 3, no. 4, p. 189, pl. 5, figs. 2-4

Holotype: Micropal. coll. NSM 1815, Paratype: Micropal. coll. NSM 1816

Dg3, Betahitra Valley, Diego-Suarez, northern Madagascar (12 ° 21'N, 49 °18'E)

Marly mudstone of so-called Cenomanian sediments

Middle Cenomanian

***Hedbergella trocoidea* (Gandolfi) yezoana Takayanagi and Iwamoto, 1962**

Palaeont. Soc. Japan, Trans. Proc., N. S., no. 45, p. 191, pl. 28, figs. 1, 2

Holotype: IGPS no. 75142, Paratype: IGPS no. 75143

A cliff of an eastern branch the Sekiyu-zawa, a northern tributary of the Horomui River, about 7630 m S12.5 ° W of the Ikushumbetsu Station, and about 7070 m S40 ° E of the Mikasa Station of the Poronai Railway Line, Iwamizawa City, Ishikari Province, Hokkaido

Lower Middle part (Unit Mc) of the Yezo Group

late Albian

***Porticulasphaera beckmanni* Saito, 1962**

Pal. Soc. Japan. Trans. Proc., no. 45., p. 221, pl. 34, figs. 1, 2

Holotype: IGPS no. 79016, Paratype: IGPS no. 79017

The sea cliff of Onion Beach, at the east side of the small embayment of Oki-mura, Haha-jima Island, Ogasawara Group, Tokyo (26 °40'N, 138 °10'E)

Globigerina tuff, in a light greenish gray tuffaceous compact medium to fine grained sandstone

Eocene

(*Orbulinoides bechmanni* (Saito): Blow and Saito, 1968, Micropaleontology. v. 14. no. 3, p. 360)

***Praeglobotruncana compressa* Hasegawa, 1999**

Paleontological Research, vol. 3, no. 3, p. 182, fig. 5, 5, 6

Holotype: IGPS no. 102707, Paratype: IGPS no. 102708

Bottom of the Shirakin (=Hakkinzawa) River (sample SRN-207), 210 m upstream from the third bridge of the Shirakin River from the junction of Shirakin and Penkemoyuparo Rivers, Oyubari, Yubari City, Hokkaido (43 °2.60'N, 142 °9.78'E)

Lower part of the Takinosawa Formation

Late Cenomanian

***Praeglobotruncana inermis* Hasegawa, 1999**

Paleontological Research, vol. 3, no. 3, p. 182, fig. 6, 1-4

Holotype: IGPS no. 102704, Paratypes: IGPS nos. 102703, 102705, 102706

Bottom of the Shirakin (=Hakkinzawa) River (sample SRN-220), 175 m upstream from the third bridge of the Shirakin River from the junction of Shirakin and Penkemoyuparo Rivers, Oyubari, Yubari City, Hokkaido (43 °2.60'N, 142 °9.72'E)

Lower part of the Takinosawa Formation

Latest Cenomanian

***Praeglobotruncana shirakinensis* Hasegawa, 1999**

Paleontological Research, vol. 3, no. 3, p. 184, fig. 5, 8

Holotype: IGPS no. 102523

Bottom of the Shirakin (=Hakkinzawa) River (sample SRN-210), 200 m upstream from the third bridge of the Shirakin River from the junction of Shirakin and Penkemoyuparo Rivers, Oyubari, Yubari City, Hokkaido (43 °2.60'N, 142 °9.77'E)

Lower part of the Takinosawa Formation

Late Cenomanian

***Prosphaeroidinella parkerae* Ujiie, 1976**

Natl. Sci. Mus., Tokyo, Bull., Ser. C (Geol. & Paleont.), vol. 2, no. 1, p. 14, pl. 3, fig. 4; pl. 4, figs. 1, 2, 4; pl. 5, figs. 1-4; pl. 12, figs. 5; pl. 13, fig. 1

Holotype: Micropal. coll. NSM 1057

390 cm below the top of core V21-98, North Philippine Sea (23 °06'N, 134 °26'E, 2134 m)

Early Pliocene

***Pulleniatina okinawaensis* Natori, 1976**

Progress in Micropaleontology: Selected Papers in Honor of Prof. Kiyoshi Asano, Micropaleont. Press, New York, p. 227, pl. 5, figs. 5a-c, 6a-c

Holotype: GSJ Reg. no. F 5946

Sample T-91, Chinen, Naha-Chinen section. Okinawa-jima, Okinawa-jima. Okinawa Prefecture

Chinen Sand of the Ryukyu Group

Pleistocene

***Trochammina nobensis* Asano, 1951**

Illustrated catalogue of Japanese Tertiary smaller foraminifera. pt. 11, Family Trochamminidae. (Stach, L. W., comp. & ed.) Hosokawa Printing Co. Tokyo, p. 8, figs. 3, 4

Holotype: IGPS no. 67101

Valley cliff at Nobegawa, Muikaichi-mura, Koshi-gun, Niigata Prefecture (37 °18'32"N, 138 °51'10"E)

Higashiyama Formation

Miocene

(*Neogloboquadrina nobensis* (Asano): Takayanagi, Y. and Hasegawa, S., 1987, Checklist and bibliography of post-Paleozoic foraminifera established by Japanese workers, 1890-1986. Toko Print. Co. Ltd., Sendai. p.50)

***Turborotalia guaymasensis* Matoba and Oda, 1982**

Init. Repts. DSDP, v. 44, pt. 2, U. S. Govt. Printing Office, Washington, p. 1018, pl. 5, figs. 1A-13B

Holotype: IGPS no. 96730, Paratypes: IGPS nos. 96731-96742

Deep Sea Drilling Project Leg 64, Site 478, Core 22, Section 1, 28-31 cm, Guaymas Basin, Gulf of California, U.S.A. (27 °05.81'N, 111 °30.45 'W, 1889 m)

Pleistocene

Fusulinoidea**Katsumi Ueno**

**Department of Earth System Science
Fukuoka University, Fukuoka 814-0180, Japan**

***Acervoschwagerina fujimotoi* Kanuma, 1959**

Bull. Tokyo Gakugei Univ., vol. 10, p. 132-133, pl. 4, figs. 6-8
Syntypes: IES10236-4, 83-11 (Tokyo Gakugei University)
Akuda, Aioi-mura and Inunaki, Kuchimyogata-mura, Gifu
Prefecture, Japan
Akuda Formation
Late Early Permian

***Afghanella ozawai* Hanzawa, 1954**

Japan. Jour. Geol. Geogr., vol. 24, p. 3-7, pl. 1, figs. 1-6, pl. 2,
figs. 1-3
No type designation
Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Murgabian, Middle Permian

***Afghanella zomekiensis* Kawano, 1961**

Bull. Fac. Educ., Yamaguchi Univ., vol. 11, spec. no., p.
119-120, pl. 13, figs. 7-11
Holotype: IKT3-b (no information on the registered place)
Kiwada, Ikumo, Ato-cho, Yamaguchi Prefecture, Japan
Zomeki Limestone
Murgabian, Middle Permian

***Akiyoshiella ozawai* Toriyama, 1953**

Jour. Paleont., vol. 27, no. 2, p. 253-255, pl. 35, figs. 1-9, pl. 36,
figs. 1-3, 11
Holotype: GK.D352-6a (Department of Geology, Kyushu
University)
Western slope of Shishide-dai, Akiyoshi-dai, Mito-cho,
Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Atetsuella imamurai* Okimura, 1958**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 2, p. 253, pl. 34, figs. 2,
9, pl. 36, figs. 4-6, 11
Holotype: specimen illustrated on pl. 34, fig. 2 (no register
number)
Between Morikuni and Kodani, Atetsu-dai, Niimi City,
Okayama Prefecture, Japan
Uppermost part of the Nagoe Formation, Atetsu Limestone
Bashkirian, Late Carboniferous

***Atetsuella meandera* Okimura, 1958**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 2, p. 253-254, pl. 34,
fig. 7, pl. 35, figs. 4, 10, pl. 36, figs. 1, 7

Holotype: specimen illustrated on pl. 35, fig. 4 (no register
number)

Between Morikuni and Kodani, Atetsu-dai, Niimi City,
Okayama Prefecture, Japan

Uppermost part of the Nagoe Formation, Atetsu Limestone
Bashkirian, Late Carboniferous

***Biwaella omiensis* Morikawa and Isomi, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 302-304, pl.
54, figs. 1-5
Holotype: specimen illustrated on pl. 54, fig. 1 (no register
number)
Minamitoba near Lake Biwa, Shiga Prefecture, Japan
Late Early Permian

***Boultonia truncata* Konishi, 1953**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 12, p. 107-108, pl.
11, figs. 1-8
Cotypes: PF7203 (no information on the registered place)
About 60 km NW of Chiang Mai, Northern Thailand
Early Permian

***Brevaxina hataii* Ishizaki, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 50, p. 62-63, pl. 9,
figs. 19-22
Holotype: IGPS78880 (Institute of Geology and Paleontology,
Tohoku University)
About 400 m N of Takinoshita, Shirakidani, Nangoku City,
Kochi Prefecture, Japan
Shinkai Formation
Bolorian, Early Permian

***Cancellina kobayashii* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 74-75, pl. 16, figs.
15-22
No type designation
Eastern roadside just between Hiraiso and Hinoura (about 800 m
SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura,
Kochi Prefecture, Japan
Kubergandian?, Middle Permian

***Cancellina matsushitai* Yamagiwa, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 236-237, pl.
34, figs. 1-4
Holotype: IAGG54001 (Institute of Astronomy, Geophysics and
Geology, Osaka University of Liberal Arts and Education)
Kusakidani, Isobe-cho, Mie Prefecture, Japan
Murgabian, Middle Permian

***Cancellina nipponica* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p.
160-161, pl. 34, figs. 12-17, pl. 35, figs. 8b, 10a, pl. 44, fig. 1a,
pl. 45, figs. 4-5
No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Nn Zone, Akasaka Limestone
Kubergandian, Middle Permian

***Cancellina phlongphrabensis* Toriyama and Kanmera, 1975**
Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 83-85,
pl. 16, figs. 16-25
Holotype: GK.D13728* (Department of Geology, Kyushu
University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian, Middle Permian

***Cancellina tenuitesta* Kanmera, 1963**
Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 14, no. 2, p. 114-115,
pl. 13, figs. 7-13, pl. 19, figs. 16-17
Holotype: GK.D12292 (Department of Geology, Kyushu
University)
Mameguridani, Sakamoto-mura, Kumamoto Prefecture, Japan
Kozaki Formation
Early Middle Permian

***Cancellina tosayamensis* Toriyama, 1947**
Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 75-76, pl. 17, figs.
1-3
No type designation
Eastern roadside just between Hiraiso and Hinoura (about 800 m
SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura,
Kochi Prefecture, Japan
Kubergandian?, Middle Permian

***Chusenella? atetsuensis* Sada, 1964**
Jour. Sci., Hiroshima Univ., Ser. C, vol. 4, p. 254-257, pl. 26,
figs. 12-18
Holotype: IGSU-KU-SA2-9(a) (no information on the registered
place)
Atetsu-dai, Niimi City, Okayama Prefecture, Japan
Iwamoto Formation, Atetsu Limestone
Early Permian

***Chusenella choshiensis* Chisaka, 1960**
Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 2, p. 245, pl. 3,
figs. 1-8, pl. 4, figs. 7-8
Holotype: specimen illustrated on pl. 3, fig. 1 (no register
number)
Takagami Quarry, Choshi City, Chiba Prefecture, Japan
Pebble in the Takagami Conglomerate
Late Middle Permian

***Chusenella tenuis* Toriyama and Kanmera, 1975**
Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 43-45,
pl. 11, figs. 12-18
Holotype: GK.D13631* (Department of Geology, Kyushu
University)

Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian and Murgabian, Middle Permian

***Chusenella (Chusenella) shengi* Toriyama and Kanmera, 1979**
Geol. Palaeont. SE Asia, vol. 20, p. 49-50, pl. 7, figs. 8-11
Holotype: NIGP8150 (Nanjing Institute of Geology and
Palaeontology), a specimen described as *Schwagerina douvillei*
(pl. 7, fig. 1) in Sheng (1956)
1.5 km NW of Wuchiaping, Liangshan, Hanchung Hsien,
Shaanxi, China
Maokou Limestone
Late Middle Permian
Sheng, J. C. (1956): Acta Palaeont. Sinica, vol. 4, no. 2, p.
175-228, pls. 1-8

***Codonofusiella abukumaensis* Ueno, 1992**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 168, p. 1280-1282,
figs. 6-13--31
Holotype: IGUT-KU0084* (Institute of Geoscience, University
of Tsukuba)
Takakurayama, Yaguki, Iwaki City, Fukushima Prefecture,
Japan
Motomura Formation, Takakurayama Group
Late Middle Permian

***Codonofusiella akiyoshiensis* Sakamoto, Sugimura and Ishibashi, 2000**
Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 32-35, pl. 10, figs.
1-23, pl. 11, figs. 1-27, pl. 12, figs. 1-23
Holotype: ASM29039 (Akiyoshi-dai Museum of Natural
History)
Approximately 500 m to the southwest of Serita, Nishinodai,
Shuho-cho, Yamaguchi Prefecture, Japan
Lepidolina multiseptata and *Codonofusiella akiyoshiensis* Zones,
Akiyoshi Limestone
Midian, Middle Permian

***Codonofusiella cuniculata* Kanmera, 1954**
Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 6, pl. 3,
figs. 12, 14-19
No type designation
N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan
Kuma Formation
Midian, Middle Permian

***Codonofusiella explicata* Kawano, 1960**
Sci. Repts., Tohoku Univ., 2nd Ser., Spec. Vol., no. 4, p.
225-226, pl. 24, figs. 3-14
No type designation
Aratani Conglomerate in Aratani, 1.5 km NW of Mt. Suzumi,
Yamaguchi City, Yamaguchi Prefecture, Japan
Pebbles in the Aratani Conglomerate

Murgabian, Middle Permian

***Codonofusiella japonica* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 278-279, pl. 46, figs. 1-14

Holotype: IW14-6 (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesennuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Late Middle Permian

***Codonofusiella kimurai* Ishii and Takahashi, 1960**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 7, p. 211-212, pl. 4, fig. 14

Holotype: Reg. no. 31011 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ogamata-zawa, Otaki-mura, Saitama Prefecture, Japan

Ogamata Formation

Late Middle Permian

***Darvasites ingavati* Igo, Ueno and Sashida, 1993**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 169, p. 29, figs. 5-14--20

Holotype: IGUT-KU0304* (Institute of Geoscience, University of Tsukuba)

E of Ban Phia, Loei, Northeast Thailand

Wang Saphung Formation

Yakhtashian, Early Permian

***Doliolina iisakai* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 71-72, pl. 16, figs. 9-12

No type designation

Eastern roadside just between Hiraiso and Hinoura (about 800 m SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura,

Kochi Prefecture, Japan

Kubergandian?, Middle Permian

***Doliolina tosensis* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 72-73, pl. 16, fig. 13

No type designation, but the specimen illustrated on pl. 16, fig. 13 should automatically be designated as a lectotype because of only one figured specimen; no register number

Eastern roadside just between Hiraiso and Hinoura (about 800 m SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura,

Kochi Prefecture, Japan

Kubergandian?, Middle Permian

***Dunbarinella densa* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 123-125, pl. 13, figs. 12-20

Holotype: GK.D684 (Department of Geology, Kyushu University)

Loc. 336 of Toriyama (1958); around the highest point of "Kirigadai," Akiyoshi-dai, Kyowa, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Gzhelian?, Late Carboniferous and Early Permian?

***Dunbarula plana* Ueno, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 168, p. 1282-1283, figs. 7-6--24

Holotype: IGUT-KU0116* (Institute of Geoscience, University of Tsukuba)

Takakurayama, Yaguki, Iwaki City, Fukushima Prefecture, Japan

Motomura Formation, Takakurayama Group

Late Middle Permian

***Dunbarula suzukii* Igo and Igo, 1977**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 106, p. 94, pl. 13, figs. 7-20

Holotype: IGUT5013 (Institute of Geoscience, University of Tsukuba)

Semba, Kuzu-machi, Tochigi Prefecture, Japan

Pebble in the basal conglomerate of the Triassic Adoyama Formation

Late Permian

***Dunbarula uenoi* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 629-630, figs. 11-35--36

Holotype: TGUFU1060 (Department of Astronomy and Earth Sciences, Tokyo Gakugei University)

N. of Horikoshi Pass, Hachiman-machi, Gifu Prefecture, Japan

Early Middle Permian

***Eoparafusulina malayensis* Igo, Rajah and Kobayashi, 1979**

Geol. Palaeont. SE Asia, vol. 20, p. 105-106, pl. 19, figs. 9-16

Holotype: IGUT5012 (Institute of Geoscience, University of Tsukuba)

Southeastern slope of Gunung Sumalayang, Sungei Sedili, Johore, Peninsular Malaysia

Sumalayang Limestone Member, Dohol Formation

Early Middle Permian

***Eoschubertella inomineensis* Toriyama, 1945**

Japan. Jour. Geol. Geogr., vol. 20, no. 1, p. 9-10, pl. 1, figs. 27-33

No type designation

Inomine, Hidaka-mura, Kochi Prefecture, Japan

Moscovian, Late Carboniferous

***Eoschubertella minima* Toriyama, 1945**

Japan. Jour. Geol. Geogr., vol. 20, no. 1, p. 10-11, pl. 1, figs. 34-35

No type designation

Inomine, Hidaka-mura, Kochi Prefecture, Japan
Moscovian, Late Carboniferous

***Eoschubertella toriyamai* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 5-6, pl. 6, figs. 23-37

Holotype: PF1098b (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan
Itadorigawa Limestone

Moscovian, Late Carboniferous

***Eostaffella akiyoshiensis* Sada, 1975**

Mem. Fac. Integr. Arts and Sci. IV, Hiroshima Univ., vol. 1, p. 9-10, pl. 1, figs. 6-10

Holotype: OLY6-10 (no information on the registered place)

Hirotani, E of Shuhodo cave, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella and *Profusulinella* Zones, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Eostaffella columbiana* Sada and Danner, 1974**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 93, p. 258-259, pl. 35, figs. 1-8, pl. 36, figs. 1-5

Holotype: Slide Upper Harper Ranch 93-a (no information on the registered place)

Upper Harper Ranch near Kamloops, British Columbia, Canada

Late Early Carboniferous

***Eostaffella etoi* Ota, 1971**

Bull. Akiyoshi-dai Sci. Mus., no. 7, p. 69-70, pl. 13, figs. 16-33

Holotype: GK.D12691 (Department of Geology, Kyushu University)

Uzura Quarry, Yowara, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella yowarensis Zone, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Eostaffella excavata* Niko, 1987**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 147, p. 120-121, figs. 3-A--H

Holotype: UMUT PF18013 (University Museum, University of Tokyo)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Early Carboniferous

***Eostaffella igoi* Niko, 1987**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 147, p. 121, figs. 4-A--E

Holotype: UMUT PF18021 (University Museum, University of Tokyo)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Early Carboniferous

***Eostaffella kamiyozawensis* Kobayashi, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 176, p. 624-626, figs. 3-23--28

Holotype: D2-1777 (Division of Earth Sciences, Museum of Nature and Human Activities, Hyogo)

Kamiyozawa, Akiruno City, Tokyo, Japan

Latest Early Carboniferous?

***Eostaffella nagaiwaensis* Kobayashi, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 203-204, pl. 30, figs. 9-13

Holotype: Reg. no. 2095-2 (Institute of Geology and Astronomy, Tokyo Gakugei University)

Nagaiwa, Ofunato City, Iwate Prefecture, Japan

Lower-middle Nagaiwa Formation

Bashkirian, Late Carboniferous

***Eostaffella oregonensis* Sada and Danner, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 91, p. 155-157, pl. 23, figs. 1-10, 14-16

Holotype: CF-C-46c (no information on the registered place)

DS1 of Sada and Danner (1973); Trout Creek near Suplee, Crook County, Oregon, USA

Coffee Creek Formation

Visean or Serpukhovian, Early Carboniferous

***Eostaffella postnagaiwaensis* Kobayashi, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 204-205, pl. 30, figs. 17-20

Holotype: Reg. no. 2056-21 (Institute of Geology and Astronomy, Tokyo Gakugei University)

Nagaiwa, Ofunato City, Iwate Prefecture, Japan

Middle Nagaiwa Formation

Bashkirian, Late Carboniferous

***Eostaffella shuhodoensis* Sada, 1975**

Mem. Fac. Integr. Arts and Sci. IV, Hiroshima Univ., vol. 1, p. 10-11, pl. 2, figs. 2-4

Holotype: OLY23-8 (no information on the registered place)

Hirotani, E of Shuhodo cave, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella and *Profusulinella* Zones, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Eostaffella subulba* Niko, 1987**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 147, p. 126, figs. 5-A--C, E?

Holotype: UMUT PF180128 (University Museum, University of Tokyo)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Early Carboniferous

***Eostaffella toriyamai* Ozawa, 1976**

Geol. Palaeont. SE Asia, vol. 17, p. 122-124, pl. 23, figs. 1-29, pl. 24, figs. 15, 16?

Holotype: GK.D14305 (Department of Geology, Kyushu University)

Bukit Charas, Pahang, Peninsular Malaysia

Late Early Carboniferous

***Eostaffella ultragigantea* Kobayashi, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 202-203, pl. 30, figs. 1-5

Holotype: Reg. no. 2141-1 (Institute of Geology and Astronomy, Tokyo Gakugei University)

Nagaiwa, Ofunato City, Iwate Prefecture, Japan

Lower Nagaiwa Formation

Bashkirian, Late Carboniferous

***Fujimotoella obscura* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 37, pl. 1, fig. 9

Cotype: Reg. no. 10805 (Department of Earth Sciences, Saitama University); this specimen should automatically be designated as a lectotype because of only one figured specimen

Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

Sakamotozawa Formation

Early Permian

***Fujimotoella salixifolia* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 36-37, pl. 1, figs. 5-8

Cotypes: Reg. no. 10804 (Department of Earth Sciences, Saitama University)

Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

Sakamotozawa Formation

Early Permian

***Fujimotoella umblicata* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 36, pl. 1, figs. 1-4

Cotypes: Reg. no. 10803 (Department of Earth Sciences, Saitama University)

Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

Sakamotozawa Formation

Early Permian

***Fusiella hayashii* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 191-192, pl. 4, figs. 1-8

Holotype: Reg. no. 20440 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusiella inouei* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 190, pl. 3, figs. 16-17, 19

Holotype: Reg. no. 20447 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulina akiyoshiensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 61-63, pl. 5, figs. 13-15

Holotype: GK.D320 (Department of Geology, Kyushu University)

Loc. 327 of Toriyama (1958); on the uphill path from Seto to Ryugoho, about 900 m N of Seto quarry, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Moscovian, Late Carboniferous

***Fusulina cheni* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 216-218, pl. 10, figs. 11-15

Holotype: Reg. no. 20191 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulina elliptica* Ishii, 1958**

Jour. Inst. Polytech., Osaka City Univ., Ser. G, vol. 4, p. 9-11, pl. 1, fig. 4, pl. 5, figs. 6-15

Holotype: PF1058 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulina fujimotoi* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 212-214, pl. 11, figs. 6-10, 17

Holotype: Reg. no. 20419 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulina higoensis* Kanmera, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1/2, p. 133-136, pl. 14, figs. 1-11

Holotype: specimen illustrated on pl. 14, fig. 2 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Moscovian, Late Carboniferous

***Fusulina ichinotaniensis* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 218-220, pl. 9, figs. 1-3, 8, 10-12, pl. 11, figs. 1-5

Holotype: Reg. no. 210120 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulina ichinotaniensis* var. *rotundata* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 220-222, pl. 9, figs. 4-7, 9, 13-16

Holotype: Reg. no. 20194 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulina japonica* Gümbel, 1874**

Das Ausland, Stuttgart, Jg. 47, p. 479

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

See Schwager (1883) for more information on this species; Schwager, C. (1883): Carbonische Foraminiferen aus China und Japan. In von Richthofen, F. F., China, vol. 4, Palaeont. Theil. Abhandl. 7, p. 106-159, pls. 15-18. Verlag von Dietrich Reimer, Berlin

***Fusulina japonica* var. *akasakensis* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 9-10, pl. 3, figs. 10-11

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Fusulina japonica* var. *constricta* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 10, pl. 3, fig. 9

No type designation, but the specimen illustrated on pl. 3, fig. 9 should automatically be designated as a lectotype because of only one figured specimen; no register number

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Fusulina kanmerai* Ishii, 1958**

Jour. Inst. Polytech., Osaka City Univ., Ser. G, vol. 4, p. 7-9, pl. 1, fig. 3, pl. 3, figs. 14-15, pl. 4, figs. 1-19, pl. 5, figs. 1-5

Holotype: PF1035 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulina kurikiensis* Kanmera, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1/2, p. 138-141, pl. 13, figs. 24-29

Holotype: specimen illustrated on pl. 13, fig. 26 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Moscovian, Late Carboniferous

***Fusulina ohtanii* Kanmera, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1/2, p. 136-138, pl. 13, fig. 30, pl. 14, figs. 12-20

Holotype: specimen illustrated on pl. 14, fig. 12 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Moscovian, Late Carboniferous

***Fusulina propinqua* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 10-11, pl. 1, figs. 12-13

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Fusulina regularis* Ishii, 1958**

Jour. Inst. Polytech., Osaka City Univ., Ser. G, vol. 4, p. 5-7, pl. 1, fig. 2, pl. 3, figs. 7-13

Holotype: PF1028 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulina shikokuensis* Ishii, 1958**

Jour. Inst. Polytech., Osaka City Univ., Ser. G, vol. 4, p. 2-5, pl. 1, fig. 1, pl. 2, figs. 1-17, pl. 3, figs. 1-6

Holotype: PF1004 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulina sinkaiensis* Toriyama, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 241-242, pl. 24, fig. 6

No type designation, but the specimen illustrated on pl. 24, fig. 6 should automatically be designated as a lectotype because of only one figured specimen; no register number

Yasuba, Tosayamada-cho, Kochi Prefecture, Japan
Uncertain

Fusulina (Schellwienia) prisca var. chinensis Ozawa, 1923

Japan. Jour. Geol. Geogr., vol. 2, no. 2, p. 36-38, pl. 5, figs. 2a-2b, text-fig. 2

No type designation

Shihtungkou and Tungkou, Mihsien, and Huoshihkou, Shetsun, Kunghsien, Hunan, China

Early Permian

Fusulina (Schellwienia) watanabei Ozawa, 1923

Japan. Jour. Geol. Geogr., vol. 2, no. 2, p. 33, pl. 5, figs. 1a-1b

No type designation

Huoshihkou, Shetsun, Kunghsien, Hunan, China

Early Permian

Fusulinella asiatica Igo, 1957

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 202-205, pl. 6, figs. 4-22

Holotype: Reg. no. 20410 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Moscovian, Late Carboniferous

Fusulinella bingoensis Ueno and Mizuno, 1993

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 170, p. 141-143, figs. 6-1--6

Holotype: IGUT-KU0474* (Institute of Geoscience, University of Tsukuba)

Unata, Taishaku-dai, Tojo-cho, Hiroshima Prefecture, Japan

Eimyoji Formation, Taishaku Limestone

Moscovian, Late Carboniferous

Fusulinella bocki biconiformis Ishii, 1962

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 25-26, pl. 12, figs. 8-17

Holotype: PF1072 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

Fusulinella bocki rotunda Ishii, 1962

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 24-25, pl. 11, figs. 14-18, pl. 12, figs. 1-7

Holotype: PF1176 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

Fusulinella bocki var. zidoensis Huzimoto, 1938

Jour. Geol. Soc. Japan, vol. 45, no. 533 (Trans. Palaeont. Soc. Japan, no. 56), p. 274, pl. (8)1, figs. 12-13

No type designation

Zido Coal-field, Korean Peninsula

Koten Series

Moscovian, Late Carboniferous

Fusulinella compressa Ozawa, 1927

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 142-143, pl. 37, fig. 6f, pl. 38, figs. 2b, 10, 13b, 16b, pl. 39, figs. 3, 7

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Nn Zone, Akasaka Limestone

Early Middle Permian

Fusulinella elegantula Ishii, 1962

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 20-22, pl. 10, figs. 20-34

Holotype: PF1144 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

Fusulinella gracilis Kanmera, 1954

Japan. Jour. Geol. Geogr., vol. 25, nos. 1/2, p. 127-130, pl. 13, figs. 9-23

Holotype: specimen illustrated on pl. 13, fig. 9 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Moscovian, Late Carboniferous

Fusulinella hanzawai Igo, 1957

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 209-211, pl. 7, figs. 10-21

Holotype: Reg. no. 20406 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Middle Member, Ichinotani Formation

Moscovian, Late Carboniferous

Fusulinella hayasakai Watanabe, 1973

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 389-390, pl. 53, figs. 11-14

Holotype: TGU-72064 (Tokyo Gakugei University)

Uta and 0.5 km E of Uta, Omi Limestone, Omi-machi, Niigata Prefecture, Japan

Omi Limestone

Moscovian, Late Carboniferous

***Fusulinella hirokoeae* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 13-14, pl. 3, figs. 9-13

Holotype: 102 (no information on the registered place)

200 m S of the trigonometrical point 532.5 m, S of Otani, Anan City, Tokushima Prefecture, Japan

Daigo Group

Moscovian, Late Carboniferous

***Fusulinella imamurai* Sada, 1964**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 4, p. 235-237, pl. 23, figs. 8-11

Holotype: IGSH-AZ-SA4-5 (no information on the registered place)

Atetsu-dai, Niimi City, Okayama Prefecture, Japan

Upper part of the Kodani Formation, Atetsu Limestone

Moscovian, Late Carboniferous

***Fusulinella incaica* Sakagami, 1998**

Bull. Natl. Sci. Mus., Ser. C, vol. 24, nos. 1/2, p. 28-30, figs. 7-1--10, 8-1--11, 9-1--4

Holotype: NSM PA-14103a (National Science Museum, Tokyo)

About 3 km W of Tarma, Peru

Tarma Limestone,

Moscovian, Late Carboniferous

***Fusulinella irumensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 38-40, pl. 2, figs. 1-8, 27?

No type designation

Asamido, Naguri-mura, Saitama Prefecture, Japan

Late Early Permian

***Fusulinella itadorigawaensis* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 11-14, pl. 8, figs. 7-25

Holotype: PF1077 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulinella itoi* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 19, pl. 3, figs. 6, 8

No type designation

Shiraiwa, Akiyoshi Plateau, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Moscovian, Late Carboniferous

***Fusulinella iyoensis* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 14-15, pl. 10, figs. 3-4

Holotype: PF1087 (Division of Geoscience, Osaka City

University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulinella kamitakarensis* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 201-202, pl. 6, figs. 1-3

Holotype: Reg. no. 20390 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Middle Member, Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulinella matsushitai* Sakaguchi, 1963**

Mem. Osaka Univ. Liberal Arts and Sci., B, no. 12, p. 91-92, pl. 1, figs. 1-10

Holotype: specimen illustrated on pl. 1, fig. 1 (no register number)

An old quarry near Kumasaki, N of Sonobe, Kyoto Prefecture, Japan

Moscovian, Late Carboniferous

***Fusulinella minutissima* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 10-11, pl. 7, figs. 20-33, pl. 8, figs. 1-6

Holotype: PF1131 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulinella pygmaea* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 19-20, pl. 10, figs. 8-19

Holotype: PF1152 (Division of Geoscience, Osaka City University)

Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan

Itadorigawa Limestone

Moscovian, Late Carboniferous

***Fusulinella rhomboidalis* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 549-550, pl. 8, figs. 1-9

Holotype: UHR.30309 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Moscovian, Late Carboniferous

***Fusulinella simplicata* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 36-39, pl. 2, figs. 7-17

Holotype: GK.D260 (Department of Geology, Kyushu

University)

Loc. 235 of Toriyama (1958); 350 m NNE of a small irrigation reservoir on the by-path between Kama and Tonogakochi, Akiyoshi-dai, Showa, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Fusulinella simplicata onoi* Ishii, 1962**

Jour. Geosci., Osaka City Univ., vol. 6, art. 1, p. 17-18, pl. 9, figs. 10-19, pl. 10, figs. 1-2
Holotype: PF1090 (Division of Geoscience, Osaka City University)
Itadorigawa, Shirokawa-cho, Ehime Prefecture, Japan
Itadorigawa Limestone
Moscovian, Late Carboniferous

***Fusulinella subspherica* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 52-54, pl. 4, figs. 7-11
Holotype: GK.D305 (Department of Geology, Kyushu University)
Loc. 354 of Toriyama (1958); southwest-western slope of Shishide-dai, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Fusulinella taishakuensis* Sada in Sada and Yokoyama, 1970**

Mem. Fac. Gen. Educ., Hiroshima Univ., III, vol. 4, p. 39-41, pl. 1, figs. 1-10, 12-15
Holotype: A1401-04 (no information on the registered place)
A1401 of Sada and Yokoyama (1970), Taishaku-dai, Tojo-cho, Hiroshima Prefecture, Japan
Fusulinella Zone, Taishaku Limestone
Moscovian, Late Carboniferous

***Fusulinella tudai* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 41-42, pl. 2, figs. 10-14
No type designation
Futagoyama, Ogano-machi, Saitama Prefecture, Japan
Moscovian, Late Carboniferous

***Gifuella amacula* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol.10, p. 136-137, pl. 6, fig. 2, pl. 9, figs. 1-2, 4
Holotype: HU13453 (Department of Geology and Mineralogy, Hokkaido University)
About 100 m W of the Nobi Hakkei Kinshozan monument, Akasaka, Ogaki City, Gifu Prefecture, Japan
Nm zone, Akasaka Limestone
Murgabian, Middle Permian

***Gifuella gifuensis* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol.10, p. 134-136, pl. 6, fig. 7, pl. 9, figs. 3-7, pl. 8
Holotype: HU13454 (Department of Geology and Mineralogy, Hokkaido University)
About 120 m W of the Nobi-Hakkei Kinshozan monument, about 20 m S of the main building of Kinshozan Shrine, Akasaka, Ogaki City, Gifu Prefecture, Japan
Nm zone, Akasaka Limestone
Murgabian, Middle Permian

***Hayasakaina kawadai* Igo, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 22, p. 173-174, pl. 27, figs. 2-5, 7-11, 17-20
Cotypes: Reg. nos. 20246, 20241, 20238, 20243, 20242, 20237, 20236, 20239, 20245, 20240 (Institute of Geology and Mineralogy, Tokyo University of Education)
Osobudani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan
Pebbles in the Osobudani Conglomerate
Late Early Permian

***Hayasakaina kotakiensis* Fujimoto and Kawada, 1953**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 2, no. 13, p. 208-209, pl. 1, figs. 1-10
No type designation
Mt. Myojo, Ktaki, Itoigawa City, Niigata Prefecture, Japan
Omi Limestone
Early Permian?

***Hemifusulina? hamadai* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 86-87, pl. 11, figs. 8-22, 30
Holotype: Reg. no. 22160* (Institute of Geology and Mineralogy, Tokyo University of Education)
Huai Bun Nak, about 4 km E of Wang Saphung, Loei, Northeast Thailand
Wang Saphung Formation
Moscovian, Late Carboniferous

***Hemifusulina? thaiensis* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 87-89, pl. 11, figs. 23-29, pl. 13, figs. 1-3
Holotype: Reg. no. 22027* (Institute of Geology and Mineralogy, Tokyo University of Education)
Huai Bun Nak, about 4 km E of Wang Saphung, Loei, Northeast Thailand
Wang Saphung Formation
Moscovian, Late Carboniferous

***Hidaella kameii* Fujimoto and Igo, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 18, p. 46-48, pl. 7, figs. 1-10
Holotype: Reg. no. 20101 (Institute of Geology and Mineralogy, Tokyo University of Education)
Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation
Moscovian, Late Carboniferous

***Jigulites grandis* Ueno and Igo, 1993**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 171, p. 224-227, figs. 6-1--16

Holotype: IGUT-KU0448* (Institute of Geoscience, University of Tsukuba)

Ban Na Din Dam, Loei, Northeast Thailand

Nam Maholan Formation

Gzhelian, Late Carboniferous

***Kwantoella fujimotoi* Sakagami and Omata, 1957**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 252-253, pl. 19, figs. 5-7

Holotype: Reg. no. 2039-A (Department of Geology, Hokkaido Gakugei University; see remarks)

Shiraiwa, Ome City, Tokyo, Japan

Shiraiwa Limestone

Late Late Carboniferous

The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Leella grossa* Ishibashi, 1983**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 25, no. 1, p. 97-98, pl. 11, figs. 1-16

Holotype: GK.D15000a (Department of Geology, Kyushu University)

10 km W of Odana, Yamato-son, Amami-oshima, Okinawa Prefecture, Japan

Naon Formation

Late Middle Permian

***Lepidolina? gigantea* Toriyama, 1954**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 15, p. 179-182, pl. 24

Holotype: UHR185-3 (Department of Geology and Mineralogy, Hokkaido University)

Kanokura-zawa, Setamai, Sumita-cho, Iwate Prefecture, Japan

Kanokura Formation

Probably Midian, Middle Permian

***Lepidolina kumaensis* Kanmera, 1954**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 22-24, pl. 5, figs. 1-13

Holotype: specimen illustrated on pl. 5, fig. 1 (no register number)

N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan

Kuma Formation

Midian, Middle Permian

***Lepidolina toriyamai* Kanmera, 1954**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 24-26, pl.

6, figs. 1-19

Holotype: specimen illustrated on pl. 6, fig. 1 (no register number)

N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan

Kuma Formation

Midian, Middle Permian

***Lepidolina toriyamai maizurensis* Nogami, 1958**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 25, no. 2, p. 106-108, pl. 2, figs. 1-5

Holotype: JPF10039 (Institute of Geology and Mineralogy, Kyoto University)

Maizuru Belt

Midian, Middle Permian

***Maklaya saraburiensis* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 5, p. 41-43, pl. 4, figs. 17-20

Holotype: GK.D13330* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Kubergandian, Middle Permian

***Maklaya sethaputi* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 5, p. 37-41, pl. 5, figs. 1-17

Holotype: GK.D13658* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Kubergandian, Middle Permian

***Mediocris lenticuliformis* Niko, 1985,**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 35, no. 2, p. 168-170, pl. 1, figs. 20-21

Holotype: NSR5-3201 (University Museum, University of Tokyo)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Early Carboniferous

***Mediocris simplex* Niko, 1985**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 35, no. 2, p. 170-172, pl. 3, figs. 1-16

Holotype: NS70-7001 (University Museum, University of Tokyo)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Bashkirian, Late Carboniferous

***Mediocris terminalis* Ueno in Ueno et al., 1994**

Sci. Repts., Inst. Geosci., Univ. Tsukuba, Sect. B, vol. 15, p. 21-23, figs. 6-1--9

Holotype: IGUT-KU0888* (Institute of Geoscience, University of Tsukuba)

Nam Thao Reservoir, E. of Ban Sup, Loei, Northeast Thailand
Wang Saphung Formation
Moscovian, Late Carboniferous

***Mesoschubertella akiyoshiensis* Ueno, 1996**

Bull. Akiyosahi-dai Mus. Nat. Hist, no. 31, p. 27-29, pl. 6, figs. 18-27

Holotype: ASM25316* (Akiyoshi-dai Museum of Natural History)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Bolorian, Early Permian

***Mesoschubertella sakagami* Ueno, 1996**

Bull. Akiyosahi-dai Mus. Nat. Hist, no. 31, p. 26-27, pl. 6, figs. 1-17

Holotype: ASM25307A* (Akiyoshi-dai Museum of Natural History)

Managatake, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Yakhtashian, Early Permian

***Mesoschubertella shimadaniensis* Kanuma in Kanuma and Sakagami, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 26, p. 44-45, pl. 9, figs. 11-19

Holotype: Reg. no. 23918-A (Department of Geology, Tokyo Gakugei University)

Shimadani, Hachiman-cho, Gifu Prefecture, Japan

Late Early Permian

***Mesoschubertella thompsoni* Sakagami in Kanuma and Sakagami, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 26, p. 43-44, pl. 9, figs. 1-10

Holotype: Reg. no. 2611-A (Department of Geology, Hokkaido Gakugei University; see remarks)

Yagooki-dani, Tamanouchi, Hinode-machi, Tokyo, Japan

Pebble in the Tamanouchi Conglomerate

Late Early Permian

The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Metadoliolina pinguis* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 81-83, pl. 16, figs. 11-15

Holotype: GK.D13693* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Murgabian, Middle Permian

***Metaschwagerina ovalis* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol.10, p. 151-155, pl. 7, figs. 1-2, pl. 8

Holotype: HU13494 (Department of Geology and Mineralogy, Hokkaido University)

10 m N of the Shirokiya Limestone Company's powder magazine, Shirokiya Quarry, Akasaka, Ogaki City, Gifu Prefecture, Japan

Mm zone, Akasaka Limestone

Murgabian, Middle Permian

***Metaschwagerina ovalis* Minato and Honjo, 1958** (see remarks)

Earth Science (Chikyu Kagaku), no. 38, plate on the cover and its explanation

Name not available because of no description; see *Metaschwagerina ovalis* Honjo, 1959

***Millerella bigmmicula* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 172-174, pl. 1, figs. 1-9, 15-17, 27

Holotype: Reg. no. 20206 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Bashkirian, Late Carboniferous

***Millerella discoidea* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 177-178, pl. 2, figs. 1-3

Holotype: Reg. no. 20677 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Visean or Serpukhovian, Early Carboniferous

***Millerella gigantea* Kanmera, 1952**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 3, no. 4, p. 172-173, pl. 12, figs. 4-14

Holotype: GK.D10022 (Department of Geology, Kyushu University)

Kakisako, Izumi-mura, Kumamoto Prefecture, Japan

Kakisako Formation

Bashkirian?, Late Carboniferous

***Millerella hataii* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 5, pl. 1, figs. 5-6

Holotype: 213a (no information on the registered place)

200 m N of Kotaki, Shirakidani, Nangoku City, Kochi Prefecture, Japan

Kameiwa Formation

Early Permian

***Millerella japonica* Kanmera, 1952**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 3, no. 4, p. 170-172, pl. 11, figs. 1-19, pl. 12, figs. 1-2

Holotype: GK.D10004 (Department of Geology, Kyushu University)

Kakisako, Izumi-mura, Kumamoto Prefecture, Japan

Kakisako Formation

Bashkirian?, Late Carboniferous

***Millerella kanmerai* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 175-177, pl. 1, figs. 20-26, pl. 2, fig. 14

Holotype: Reg. no. 20369 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Visean or Serpukhovian, Early Carboniferous

***Millerella komatsui* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 174-175, pl. 1, figs. 10-12, pl. 2, figs. 4-5

Holotype: Reg. no. 20336 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Visean or Serpukhovian, Early Carboniferous

***Millerella kotakiensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 4-5, pl. 1, figs. 1-4

Holotype: 206a (no information on the registered place)

200 m N of Kotaki, Shirakidani, Nangoku City, Kochi Prefecture, Japan

Kameiwa Formation

Early Permian

***Millerella paracuta* Niko and Watanabe, 1987**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 37, no. 1, p. 41, figs. 3-C--F

Holotype: IGMH SN0001 (Institute of Geology and Mineralogy, Hiroshima University)

N of Kuzuryu Late, Izumi-mura, Fukui Prefecture, Japan

Late Late Carboniferous

***Millerella toriyamai* Ota, 1971**

Bull. Akiyoshi-dai Sci. Mus., no. 7, p. 67-68, pl. 13, figs. 1-15

Holotype: ASM2280a (Akiyoshi-dai Museum of Natural History)

Uzura Quarry, Yowara, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella yowarensis Zone, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Millerella tosaensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 5-6, pl. 1, figs. 7-9

Holotype: 211b (no information on the registered place)

200 m N of Kotaki, Shirakidani, Nangoku City, Kochi Prefecture, Japan

Kameiwa Formation

Early Permian

***Millerella yowarensis* Ota, 1971**

Bull. Akiyoshi-dai Sci. Mus., no. 7, p. 66-67, pl. 12, figs. 1-19

Holotype: GK.D12685 (Department of Geology, Kyushu University)

Uzura Quarry, Yowara, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella yowarensis Zone, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Minojapanella elongata* Fujimoto and Kanuma, 1953**

Jour. Paleont., vol. 27, no. 1, p. 152, pl. 19, figs. 1-11

Syntypes: Reg. nos. 38181, 1083, 8310, 8311 (Institute of Geology and Mineralogy, Tokyo University of Education)

Iritsu, Hachiman-cho, Gifu Prefecture, Japan

Late Early Permian

***Misellina cylindrica* Ishizaki, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 50, p. 56-59, pl. 9, figs. 3-5

Holotype: IGPS78879 (Institute of Geology and Paleontology, Tohoku University)

About 400 m N of Takinoshita, Shirakidani, Nangoku City, Kochi Prefecture, Japan

Shinkai Formation

Bolorian, Early Permian

***Misellina ibukiensis* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 297-298, pl. 1, figs. 20-27

Holotype: Reg. no. 20516b (Institute of Geology and Mineralogy, Tokyo University of Education)

About 2 km SW of Ibukiyama, Shiga Prefecture, Japan

Ibukiyama Limestone

Bolorian, Early Permian

***Misellina otai* Sakaguchi and Sugano, 1966**

Mem. Osaka Univ. Liberal Arts and Educ., B, no. 15, p. 145-147, figs. 1-12

Holotype: specimen illustrated in fig. 1 (no register number)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Bolorian, Early Permian

***Misellina subcycloidea* Ishizaki, 1962**

Sci. Repts., Tohoku Univ., 2nd. Ser., vol. 34, no. 2, p. 167-169, pl. 10, figs. 18-21, pl. 11, figs. 1-2

No type designation

Pass of Otado to Takano, about 500 m NE of triangulated point 1455.8 m, NE of Otado, Yusuhara-cho, Kochi Prefecture, Japan
Onogahara Formation
Bolorian, Early Permian

***Misellina (Brevaxina) nipponica* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 164, p. 979-981, figs. 7-1--12

Holotype: ASM25072* (Akiyoshi-dai Museum of Natural History)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Bolorian, Early Permian

***Misellina (Misellina) postclaudiae* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 164, p. 985-987, figs. 8-15--18

Holotype: ASM25199* (Akiyoshi-dai Museum of Natural History)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kubergandian, Middle Permian

***Misellina (Misellina)? ventricosa* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 164, p. 989-990, figs. 8-19--24

Holotype: ASM25115A* (Akiyoshi-dai Museum of Natural History)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Bolorian, Early Permian

***Monodioxodina kumensis* Kanmera, 1963**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 14, no. 2, p. 103-104, pl. 19, figs. 1-7

Holotype: GK.D12447 (Department of Geology, Kyushu University)

Kozakidani, Sakamoto-mura, Kumamoto Prefecture, Japan

Kozaki Formation

Early Middle Permian

***Montiparus matsumotoi inflatus* Watanabe, 1991** (see remarks)

Palaeont. Soc. Japan, Spec. Pap., no. 32, figs. 18-1--6, 20-29--37, 22-12--13

No register number

N of Akiyoshi-dai Museum of Natural History, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian, Late Carboniferous

Name not available because of no description

***Nagatoella fujimotoi* Morikawa, 1951**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 3, p. 82-83, pl. 8, figs. 1-9

Cotype: Reg. no. 10506 (Department of Earth Sciences, Saitama University)

Shimokuzu, Agano-machi, Saitama Prefecture, Japan

Late Early Permian?

***Nagatoella ikenoensis* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 22-23, pl. 20, figs. 6-13

Holotype: a specimen illustrated on pl. 20, fig. 6 (no register number)

Ikenooku, near Lake Biwa, Shiga Prefecture, Japan

Late Early Permian

***Nagatoella kobayashii* Thompson, 1936**

Jour. Geol. Soc. Japan, vol. 43, no. 510, p. 200-202, pl. 2, figs. 4-6

Cotypes: no register number (Geological Institute, University of Tokyo)

Akiyoshi-dai, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Late Early Permian

***Nagatoella minatoi* Kanmera and Mikami, 1965**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 16, fig. 3, p. 307-308, pl. 50, figs. 9-11, pl. 53, figs. 7-9

Holotype, GK.D12718 (Department of Geology, Kyushu University)

Shiratorizawa, Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

Sd member, Sakamotozawa Formation

Late Early Permian

***Nankinella kozakiensis* Kanmera, 1963**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 14, no. 2, p. 81-82, pl. 11, figs. 14-21, pl. 12, figs. 5-7

Holotype: GK.D12151 (Department of Geology, Kyushu University)

Kozakidani, Sakamoto-mura, Kumamoto Prefecture, Japan

Kozaki Formation

Early Middle Permian

***Nankinella kuzuensis* Igo and Igo, 1977**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 106, p. 93-94, pl. 13, figs. 1-6

Holotype: IGUT5006 (Institute of Geoscience, University of Tsukuba)

Semba, Kuzu-machi, Tochigi Prefecture, Japan

Pebble in the basal conglomerate of the Triassic Adoyama Formation

Late Permian

***Nankinella? loeiensis* Igo, Ueno and Sashida, 1993**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 169, p. 38, figs. 8-5--14

Holotype: IGUT-KU0354* (Institute of Geoscience, University of Tsukuba)

E of Ban Phia, Loei, Northeast Thailand

Wang Saphung Formation

Yakhtashian, Early Permian

***Nankinella nagatoensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 65-68, pl. 6, figs. 5-13

Holotype: GK.D1623 (Department of Geology, Kyushu University)

Loc. 497 of Toriyama (1958); NE of Okugawara, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Gzhelian, Late Carboniferous and Early Permian

***Nankinella shengi* Toriyama and Kanmera, 1979**

Geol. Palaeont. SE Asia, vol. 20, p. 86-87, pl. 14, figs. 3-5

Holotype: GK.D14525 (Department of Geology, Kyushu University)

Khao Khao, Saraburi, Central Thailand

Saraburi Limestone

Murgabian, Middle Permian

***Nankinella yokoyamai* Sada, 1972**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 87, p. 441-443, pl. 52, fig. 22, pl. 53, figs. 1-2, 4-11

Holotype: A53112704 (no information on the registered place)

Taishaku-dai, Tojo-cho, Hiroshima Prefecture, Japan

Taishaku Limestone

Moscovian, Late Carboniferous

***Neofusulinella biconica* Hayasaka, 1924**

Sci. Repts., Tohoku Imp. Univ., 2nd Ser, p. 13-14, pl. 2, figs. 4-7

No type designation

Omi Limestone, Omi-machi, Niigata Prefecture, Japan

Omi Limestone

Moscovian, Late Carboniferous

***Neofusulinella saraburiensis* Toriyama, Kanmera and Ingavat, 1969**

Geol. Palaeont. SE Asia, vol. 7, p. 22-23, pl. 3, figs. 1-11

Holotype: GK.D13134* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Bolorian, Early Permian and Kubergandian, Middle Permian

***Neoschwagerina akasakensis* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 56-57, pl. 8,

fig. 4, pl. 18, figs. 1-13

Holotype: Ak70-3 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Neoschwagerina colaniae* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 157-158, pl. 40, figs. 9, 12-13, pl. 41, figs. 3, 11

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Murgabian, Middle Permian

***Neoschwagerina craticulifera* var. *minoensis* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 27, pl. 7, figs. 9-10

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Murgabian, Middle Permian

***Neoschwagerina craticulifera* var. *robusta* Ueno, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 165, p. 1051-1053, figs. 8-1--10, 10-6--11

Holotype: ASM25179* (Akiyoshi-dai Museum of Natural History)

Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Murgabian, Middle Permian

***Neoschwagerina craticulifera* var. *rotunda* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 26, pl. 8, figs. 6-13

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Murgabian, Middle Permian

***Neoschwagerina craticulifera* var. *spheroidea* Ozawa, 1922**

Jour. Geol. Soc. Japan, vol. 29, no. 348, p. 374, fig. 4

No type designation, but the specimen illustrated on fig. 4 should automatically be designated as a lectotype because of only one figured specimen; no register number

Akiyoshi-dai, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Murgabian, Middle Permian

***Neoschwagerina delicata* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 48-49, pl. 4, figs. 1-2, pl. 12, figs. 1-3

Holotype: Ak16-8 (Department of Earth Sciences, Saitama

University)
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina fujimotoi* Yamagiwa, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 239, pl. 34, figs. 11-15

Holotype: IAGG54012 (Institute of Astronomy, Geophysics and Geology, Osaka University of Liberal Arts and Education)

Kusakidani, Isobe-cho, Mie Prefecture, Japan
Murgabian, Middle Permian

***Neoschwagerina fuwensis* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 50-51, pl. 5, figs. 1-2, pl. 12, figs. 9-12, pl. 13, figs. 1-8

Holotype: Ak6-18 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina globosa* Yabe, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 5, p. 4, pl. 1, fig. 5, pl. 3, fig. 1

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Midian, Middle Permian

***Neoschwagerina hanaokensis* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 64, pl. 9, fig. 2, pl. 15, figs. 7-11, pl. 18, fig. 14

Holotype: Ak75-14 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina iisakai* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 81-82, pl. 17, figs. 12-17

No type designation

Eastern roadside just between Hiraiso and Hinoura (about 800 m SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura, Kochi Prefecture, Japan
Murgabian, Middle Permian

***Neoschwagerina irregularis* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol.10, p. 146-147, pl. 3, figs. 2, 7, pl. 5

Holotype: HU13512 (Department of Geology and Mineralogy, Hokkaido University)

About 130 m NW of the Nobi Hakkei Kinshozan monument,

Akasaka, Ogaki City, Gifu Prefecture, Japan
Nc zone, Akasaka Limestone
Murgabian, Middle Permian

***Neoschwagerina katoi* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 159, pl. 41, figs. 1, 10, pl. 42, fig. 3, pl. 43, figs. 1a, 2a, 3, 5-6

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Ng Zone, Akasaka Limestone
Midian, Middle Permian

***Neoschwagerina larga* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 57-58, pl. 8, fig. 3, pl. 19, figs. 1-6

Holotype: Ak81-10 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina megaspherica miyanoensis* Kawano, 1960**

Sci. Repts., Tohoku Univ., 2nd Ser., Spec. Vol., no. 4, p. 228-230, pl. 25, figs. 4-11

Holotype: 283 (no information on the registered place)

Aratani Conglomerate in Aratani, 1.5 km NW of Mt. Suzumi, Yamaguchi City, Yamaguchi Prefecture, Japan
Pebbles in the Aratani Conglomerate
Murgabian, Middle Permian

***Neoschwagerina muratai* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 54-55, pl. 6, fig. 3, pl. 14, figs. 4-6

Holotype: Ak11-8 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina okuboi* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 55-56, pl. 6, fig. 4, pl. 17, figs. 1-8

Holotype: Ak17-46 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Neoschwagerina paranipponica* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 53-54, pl. 6, figs. 1-2, pl. 14, figs. 1-3

Holotype: Ak3-13 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone
Middle Permian

***Neoschwagerina sakaguchii* Yamagiwa, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 237-238, pl. 34, figs. 5-10, 17

Holotype: IAGG54005 (Institute of Astronomy, Geophysics and Geology, Osaka University of Liberal Arts and Education)
Kusakidani, Isobe-cho, Mie Prefecture, Japan
Murgabian, Middle Permian

***Neoschwagerina simplex* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 153-154, pl. 34, figs. 7-11, 22-23, pl. 37, figs. 3a, 6a

No type designation
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Nn Zone, Akasaka Limestone
Murgabian, Middle Permian

***Neoschwagerina simplex tenuis* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 97-99, pl. 19, figs. 14-24

Holotype: GK.D13470* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Murgabian, Middle Permian

***Neoschwagerina staffelloides* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 80-81, pl. 17, fig. 8

No type designation, but the specimen illustrated on pl. 17, fig. 8 should automatically be designated as a lectotype because of only one figured specimen; no register number
Eastern roadside just between Hiraiso and Hinoura (about 800 m SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura, Kochi Prefecture, Japan
Murgabian, Middle Permian

***Neoschwagerina takagamiensis* Chisaka, 1960**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 2, p. 246-248, pl. 9, figs. 4-10

Holotype: specimen illustrated on pl. 9, fig. 4 (no register number)
Takagami Quarry, Choshi City, Chiba Prefecture, Japan
Pebble in the Takagami Conglomerate
Late Middle Permian

***Neoschwagerina toriyamai* Sada, 1961**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 4, p. 118-120, pl. 11, figs. 1-11

Holotype: IGSH-Hr-SA514-22 (no information on the registered place)

Hirose, Atetsu-dai, Niimi City, Okayama Prefecture, Japan
Maki Formation, Atetsu Limestone
Murgabian, Middle Permian

***Neoschwagerina (Minoella) eonipponica* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol.10, p. 127-129, pl. 1, figs. 2-5, 7

Holotype: HU13510 (Department of Geology and Mineralogy, Hokkaido University)
About 30 m S of the Akasaka Kindergarten, Taniyashiki, Akasaka, Ogaki City, Gifu Prefecture, Japan
Mn zone, Akasaka Limestone
Kubergandian, Middle Permian

***Neothailandina komalarjuni* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 4, p. 39-40, pl. 8, figs. 12-14
Holotype: GK.D13759* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian and Murgabian, Middle Permian

***Neothailandina pitakpaivani* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 4, p. 37-38, pl. 7, figs. 9-19, pl. 8, figs. 1-11
Holotype: GK.D13074a* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian and Murgabian, Middle Permian

***Nipponitella auriculla* Hanzawa, 1938**

Proc. Imp. Acad. Tokyo, vol. 14, no. 7, p. 257, figs. 1-2
Cotypes: IGPSJ21845 (Institute of Geology and Paleontology, Tohoku University) (IGPS21845)
Oshimizu, Nishikori-mura, Iwate Prefecture, Japan
Early Permian

***Nipponitella expansa* Hanzawa, 1938**

Proc. Imp. Acad. Tokyo, vol. 14, no. 7, p. 257-259, figs. 4-7
Holotype: IGPSJ21486 (Institute of Geology and Paleontology, Tohoku University) (IGPS21486)
Yahagi-mura, Iwate Prefecture, Japan
Early Permian

***Nipponitella explicata* Hanzawa, 1938**

Proc. Imp. Acad. Tokyo, vol. 14, no. 7, p. 256, figs. 8-16
Cotypes: IGPSJ21487 (Institute of Geology and Paleontology, Tohoku University) (IGPS21487)
Sakamotozawa, Ofunato City, Iwate Prefecture, Japan
Sakamotozawa Formation
Early Permian

***Obsoletes horridus* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 163, p. 815-818, figs. 4-1--8

Holotype: ASM25037A* (Akiyoshi-dai Museum of Natural History)

E of Managatake, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian, Late Carboniferous

***Oketaella shiroishiensis* Morikawa and Kobayashi, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 310-312, pl. 55, figs. 12-19

Holotype: KR28-43a (Department of Earth Sciences, Saitama University)

Shiroishiyama, Ogano-machi, Saitama Prefecture, Japan

Shiroishiyama Limestone

Early Permian?

***Oketaella takahashii* Morikawa and Kobayashi, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 308-310, pl. 55, figs. 1-11

Holotype: KR28-40a (Department of Earth Sciences, Saitama University)

Shiroishiyama, Ogano-machi, Saitama Prefecture, Japan

Shiroishiyama Limestone

Early Permian?

***Ozawainella akiyoshiensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 64-65, pl. 6, figs. 1-4

Holotype: GK.D114 (Department of Geology, Kyushu University)

Loc. 523 of Toriyama (1958); southern slope of a hill located about 500 m NE of the hill of 319 m in height, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Early Permian

***Ozawainella hidensis* Igo and Adachi, 1981**

Sci. Repts, Inst. Geosci., Univ. Tsukuba, Sect. B, vol. 2, p. 114-115, pl. 4, figs. 16, 18-23, pl. 5, figs. 1, 3, 4

Holotype: IGUT5345 (Institute of Geoscience, University of Tsukuba)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Bashkirian, Lower Carboniferous

***Ozawainella japonica* Sada, 1975**

Mem. Fac. Integr. Arts and Sci. IV, Hiroshima Univ., vol. 1, p. 13-15, pl. 2, figs. 5-7, 12, pl. 3, figs. 1-13, pl. 4, figs. 1-11, pl. 6, fig. 3

Holotype: OLY19-15-b (no information on the registered place)

Hirotoni, E of Shuhodo cave, Akiyoshi-dai, Shuho-cho,

Yamaguchi Prefecture, Japan

Millerella Zone, Akiyoshi Limestone

Bashkirian, Late Carboniferous

***Ozawainella nakatsugawensis* Ishii and Takahashi, 1960**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 7, p. 209, pl. 4, figs. 1-5

Holotype: specimen illustrated on pl. 4, fig. 1 (no register number) (Institute of Geology and Mineralogy, Tokyo University of Education)

Oyama-zawa, Otaki-mura, Saitama Prefecture, Japan

Ogamata Formation

Late Middle Permian

***Palaeoreichelina disoluta* Matsusue, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 152, p. 651, figs. 4-8, 10

Holotype: GK.D7004 (Department of Geology, Kyushu University)

Okubo, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Fusulinella biconica Zone, Akiyoshi Limestone

Moscovian, Late Carboniferous

***Pamirina leveni* Kobayashi, 1977**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 105, p. 11-14, pl. 1, figs. 13-38

Holotype: Reg. no. 2676-2C (Institute of Geology and Mineralogy, Tokyo University of Education)

Hanagiri, Agano-machi, Saitama Prefecture, Japan

Hanagiri Limestone

Yakhtashian, Early Permian

***Pamirina tethydis* Kobayashi, 1977**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 105, p. 11, pl. 1, figs. 1-12

Holotype: Reg. no. 2676-13 (Institute of Geology and Mineralogy, Tokyo University of Education)

Hanagiri, Agano-machi, Saitama Prefecture, Japan

Hanagiri Limestone

Yakhtashian, Early Permian

***Paraboultonia inuboensis* Chisaka, 1960**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 2, p. 243, pl. 1, figs. 1-6

Holotype: specimen illustrated on pl. 1, fig. 6 (no register number)

Takagami Quarry, Choshi City, Chiba Prefecture, Japan

Pebble in the Takagami Conglomerate

Late Middle Permian

***Paradoxiella japonica* Ishii and Takahashi, 1960**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 7, p. 213, pl. 4, figs. 21-22, pl. 5, figs. 1-6

Holotype: specimen illustrated on pl. 4, fig. 21 (no register

number) (Institute of Geology and Mineralogy, Tokyo University of Education)
Oyama-zawa, Otaki-mura, Saitama Prefecture, Japan
Ogamata Formation
Late Middle Permian

***Parafusulina chungi* Igo, Rajah and Kobayashi, 1979**

Geol. Palaeont. SE Asia, vol. 20, p. 107-109, pl. 24, figs. 1-9
Holotype: IGUT5120 (Institute of Geoscience, University of Tsukuba)
Southeastern slope of Gunung Sumalayang, Sungei Sedili, Johore, Peninsular Malaysia
Sumalayang Limestone Member, Dohol Formation
Early Middle Permian

***Parafusulina fukasensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 28, pl. 9, figs. 1-4
Holotype: 185 (no information on the registered place)
1 km E of Fukase between Kusune and Fukase, Anan City, Tokushima Prefecture, Japan
Kusune Formation
Early Permian

***Parafusulina funafusensis* Matsumaru, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 61, p. 347-348, pl. 37, figs. 1-14
Holotype: IGPS86620-a (Institute of Geology and Paleontology, Tohoku University)
Funafuseyama, Gifu Prefecture, Japan
Funafuseyama Limestone
Late Early Permian?

***Parafusulina gigas* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 293-295, pl. 8, figs. 4-7
Holotype: Reg. no. 20639 (Institute of Geology and Mineralogy, Tokyo University of Education)
About 300 m NE of Ibukiyama, Gifu Prefecture, Japan
Ibukiyama Limestone
Late Middle Permian

***Parafusulina hayashii* Igo, 1959**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 6, p. 249-250, pl. 4, figs. 4-6
Holotype: Reg. no. 20499 (Institute of Geology and Mineralogy, Tokyo University of Education)
Upstream of the Hirayugawa River, Kamitakara-mura, Gifu Prefecture, Japan
Kubergandian, Middle Permian

***Parafusulina hirayuensis* Igo, 1959**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 6, p. 250-252, pl. 4, figs. 1-3
Holotype: Reg. no. 20533a (Institute of Geology and

Mineralogy, Tokyo University of Education)
Upstream of the Hirayugawa River, Kamitakara-mura, Gifu Prefecture, Japan
Kubergandian, Middle Permian

***Parafusulina iisakai* Igo and Ogawa, 1958**

Jubilee Publ. Commem. Prof. H. Fujimoto 60th Birthday, p. 52-53, pl. 1, figs. 1, 4-6, pl. 2, figs. 1-4
Holotype: Reg. no. 21273 (Institute of Geology and Mineralogy, Tokyo University of Education)
Road cutting at about midway between Enbara and Konjima, Miyama-mura, Gifu Prefecture, Japan
Funafuseyama Limestone
Middle Permian

***Parafusulina iwasensis* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 24-25, pl. 18, figs. 1-7
Holotype: specimen illustrated on pl. 18, fig. 1 (no register number)
Iwasayama, near Lake Biwa, Shiga Prefecture, Japan
Middle Permian

***Parafusulina japonica* var. *kinshoensis* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 114, pl. 20, figs. 1-6
Holotype: Ak28-1 (Department of Earth Sciences, Saitama University)
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Parafusulina johorensis* Igo, Rajah and Kobayashi, 1979**

Geol. Palaeont. SE Asia, vol. 20, p. 112-113, pl. 22, figs. 1-6
Holotype: IGUT5144 (Institute of Geoscience, University of Tsukuba)
Southeastern slope of Gunung Sumalayang, Sungei Sedili, Johore, Peninsular Malaysia
Sumalayang Limestone Member, Dohol Formation
Early Middle Permian

***Parafusulina kawaii* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 124-125, pl. 25, figs. 1-8
Holotype: Ak52-22 (Department of Earth Sciences, Saitama University)
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Parafusulina kawaii sotensis* Igo, 1967**

Mem. Mejiro Gakuen Woman's Junior Coll., vol. 4, p. 12, pl. 8, figs. 1-6
Holotype: Reg. no. 21075 (Institute of Geology and Mineralogy, Tokyo University of Education)

Sotedani, Nyukawa-mura, Gifu Prefecture, Japan
Upper Sote Formation
Early Middle Permian

***Parafusulina? kesenensis* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 33-34, pl. 1, figs. 8-10
Cotypes: Reg. no. 10802 (Department of Earth Sciences, Saitama University)
Sakamotozawa, Ofunato City, Iwate Prefecture, Japan
Sakamotozawa Formation
Early Permian

***Parafusulina kuramensis* Sakaguchi, 1963**

Mem. Osaka Univ. Liberal Arts and Sci., B, no. 12, p. 108-110, pl. 8, figs. 4-6, pl. 10, figs. 1-4
Holotype: specimen illustrated in pl. 10, fig. 1 (no register number)
Kurama Limestone at Okunoin of the Kurama-ji, Kyoto
Kitayama, Kyoto City, Kyoto Prefecture, Japan
Kurama Limestone
Middle Permian

***Parafusulina matsubaishi* Fujimoto, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 21, p. 158-160, pl. 25, figs. 1-10
Holotype: Reg. no. 19495 (Institute of Geology and Mineralogy, Tokyo University of Education)
Tsukitate, Kesennuma City, Miyagi Prefecture, Japan
Middle Permian

***Parafusulina minokerensis* Kanomata and Miyawaki, 1967**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 5, no. 1, p. 161-162, pl. 1, figs. 10-12, pl. 2, fig. 3
No type designation
Kamiyatsuse, Kesennuma City, Miyagi Prefecture, Japan
Late Early Permian

***Parafusulina mizutanii* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 121-122, pl. 20, figs. 7-10, pl. 23, fig. 5
Holotype: Ak27-15 (Department of Earth Sciences, Saitama University)
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Parafusulina mongeri* Sada and Danner, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 90, p. 77-78, pl. 12, figs. 1-5, pl. 13, fig. 4
Holotype: D20 (no information on the registered place)
Loc. D1 of Sada and Danner (1973), Chilliwack Valley, British Columbia, Canada
Chilliwack Group

Leonardian, Early Permian

***Parafusulina nabeyamensis* Morikawa and Takaoka, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 41, p. 37, pl. 8, figs. 1-9
Holotype: specimen illustrated on pl. 8, fig. 1 (no register number)
Tomuro, W of Kuzu-machi, Tochigi Prefecture, Japan
Kuzu Limestone
Middle Permian

***Parafusulina nakamigawai* Morikawa and Horiguchi, 1956**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 2, p. 262-263, pl. 35, figs. 1-7
Syntypes: Reg. nos. 930081-930083 (Department of Earth Sciences, Saitama University)
Aoyama, Kuzu-machi, Tochigi Prefecture, Japan
Aoyama Formation, Kuzu Limestone
Middle Permian

***Parafusulina parakinosakii* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 23-24, pl. 17, figs. 1-9
Holotype: a specimen illustrated on pl. 17, fig. 1 (no register number)
Iwasayama, near Lake Biwa, Shiga Prefecture, Japan
Middle Permian

***Parafusulina rodaiensis* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 544-545, pl. 7, figs. 1-5
Holotype: specimen illustrated on pl. 7, fig. 1 (no register number)
Maiya-Toyoma area, Miyagi Prefecture, Japan
Rodai Formation
Early Middle Permian

***Parafusulina sublineata* Igo, 1965**

Jour. Paleont., vol. 39, no. 2, p. 221-222, pl. 30, figs. 1-3, pl. 32, figs. 1-2
Holotype: Reg. no. 21337 (Institute of Geology and Mineralogy, Tokyo University of Education)
Nyukawa-mura, Gifu Prefecture, Japan
Lower Sote Formation
Bolorian, Lower Permian

***Parafusulina takanoae* Igo, 1965**

Jour. Paleont., vol. 39, no. 2, p. 220-221, pl. 32, figs. 6-8
Holotype: Reg. no. 21055 (Institute of Geology and Mineralogy, Tokyo University of Education)
Nyukawa-mura, Gifu Prefecture, Japan
Lower Sote Formation
Bolorian, Early Permian

***Parafusulina takeyamai* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 24, pl. 7, fig. 13, pl. 19, figs. 1-8

Holotype: specimen illustrated on pl. 19, fig. 1 (no register number)

Iwasayama, near Lake Biwa, Shiga Prefecture, Japan

Middle Permian

***Parafusulina taniyashikiensis* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 120-121, pl. 24, figs. 1-7

Holotype: Ak28-84 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Parafusulina tomeganensis* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 122-123, pl. 12, fig. 15, pl. 15, fig. 11, pl. 25, figs. 1-7

Holotype: Ak48-3 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Parafusulina tomuroensis* Morikawa and Takaoka, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 41, p. 36-37, pl. 7, figs. 1-4

Holotype: specimen illustrated on pl. 7, fig. 1 (no register number)

Okada Quarry, Nabeyama, Kuzu-machi, Tochigi Prefecture, Japan

Kuzu Limestone

Middle Permian

***Parafusulina? tschernyschewiformis* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 32-33, pl. 1, figs. 1, 6-7

Cotypes: Reg. no. 10801 (Department of Earth Sciences, Saitama University)

Sakaishi, Kanto Mountains, Japan

Early Permian?

***Parafusulina undata* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 115-116, pl. 21, figs. 1-5, pl. 18, fig. 8

Holotype: Ak70-16 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Middle Permian

***Parafusulina vulgarisiformis* Morikawa, 1952**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 1, p. 31-32, pl. 1, figs. 1-4

Cotypes: Reg. no. 10800 (Department of Earth Sciences, Saitama University)

Koika, Kanto Mountains, Japan

Early Permian?

***Parafusulina yabei* Hanzawa, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 127-130, pl. 13, figs. 1-4, pl. 14, figs. 1-5

Syntypes: IGPSJ22321 (Institute of Geology and Paleontology, Tohoku University) (IGPS22321)

Tomuro, W of Kuzu-machi, Tochigi Prefecture, Japan

Kuzu Limestone

Middle Permian

***Parafusulina yabei hanzawae* Igo, 1964**

Mem. Mejiro Gakuen Woman's Junior Coll., vol. 1, p. 17-18, pl. 7, figs. 1-4

Holotype: Reg. no. 21590 (Institute of Geology and Mineralogy, Tokyo University of Education)

Yamasuge, Kuzu-machi, Tochigi Prefecture, Japan

Yamasuge Limestone Member, Kuzu Limestone

Early Middle Permian

***Parafusulina yini* Igo, Rajah and Kobayashi, 1979**

Geol. Palaeont. SE Asia, vol. 20, p. 114, pl. 18, figs. 8-10, pl. 26, figs. 1-3

Holotype: IGUT5154 (Institute of Geoscience, University of Tsukuba)

Southeastern slope of Gunong Sumalayang, Sungei Sedili, Johore, Peninsular Malaysia

Sumalayang Limestone Member, Dohol Formation

Early Middle Permian

***Parafusulina (Parafusulina) himalayensis* Ozawa and Gupta in Gupta and Ozawa, 1986**

In Gupta, V. J. ed., Geology of Western Himalayas (Contributions to Himalayan Geology, vol. 3), Hindustan Publ. Co., Delhi, p. 4-5, pl. 1, figs. 15-17, pl. 2, figs. 1-4

Holotype: Punjab Univ. Paleont. Coll. no. 1001 (Centre of Advanced Study in Geology, Punjab University, India)

Saser Brangsa-Margo area, Upper Shyok Valley, Karakoram, India

Saser Brangsa Formation

Late? Middle Permian

***Parafusulina (Parafusulina) kuzuensis* Chisaka and Fuse, 1969**

Bull. Fac. Educ., Chiba Univ., vol. 18, p. 184-185, pl. 1, figs. 1-5

Holotype: specimen illustrated on pl. 1, fig. 1 (no register number)

Kuzu-machi, Tochigi Prefecture, Japan
Yamasuge Limestone Member, Kuzu Limestone
Early Middle Permian

***Paraschwagerina hosozawensis* Kanomata and Miyawaki, 1967**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 5, no. 1, p. 159-161, pl. 1, figs. 1-5
No type designation
Kamiyatsuse, Kesennuma City, Miyagi Prefecture, Japan
Early Permian

***Paraschwagerina indigesta* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 113, pl. 19, figs. 7-8
Holotype: Reg. no. 22147* (Institute of Geology and Mineralogy, Tokyo University of Education)
Tham Nam Maholan, SE of Wang Saphung, Loei, Northeast Thailand
Nam Maholan Formation
Asselian, Early Permian

***Paraschwagerina kanmerai* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 185-187, pl. 4, figs. 4-7
Holotype: JPF10180 (Institute of Geology and Mineralogy, Kyoto University)
Atetsu-dai, Okayama Prefecture, Japan
Atetsu Limestone
Early Permian

***Paraschwagerina shimodakensis* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 181-183, pl. 29, figs. 1-13
Holotype: specimen illustrated on pl. 29, fig. 1 (no register number)
Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan
Yayamadake Limestone
Gzhelian, Late Carboniferous

***Paraschwagerina yanagidai* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 111-113, pl. 19, figs. 1-6
Holotype: Reg. no. 22140* (Institute of Geology and Mineralogy, Tokyo University of Education)
Ban Nam Lum, S of Phetchabun, Northeast Thailand
Gzhelian, Late Carboniferous

***Paraschwagerina (Acervoschwagerina) endoi* Hanzawa, 1949**

Jour. Paleont., vol. 23, no. 2, p. 208-209, figs. 2-3, pl. 43, figs. A-D
Cotypes: IGPS21962 (Institute of Geology and Paleontology, Tohoku University)
Gonbo, Nyukawa-mura, Gifu Prefecture, Japan
Early Permian

***Paraschwagerina (Paraschwagerina) akiyoshiensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 155-158, pl. 18, figs. 1-14
Holotype: GK.D881 (Department of Geology, Kyushu University)
Loc. 613 of Toriyama (1958); southeastern part of the Ubekosan's quarry, Omine, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Asselian?, Early Permian

***Pravitoschwagerina thailandensis* Toriyama, 1982**

Geol. Palaeont. SE Asia, vol. 23, p. 5-6, pl. 1, figs. 1-12, pl. 2, figs. 1-6, pl. 3, fig. 1
Holotype: GF.D10142f* (Department of Earth System Science, Fukuoka University)
TF369, about 12 km east of Wang Saphung, Loei, Northeast Thailand
Nam Maholan Formation
Bolorian, Early Permian

***Profusulinella beppensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 31-33, pl. 2, figs. 1-6
Holotype: GK.D132 (Department of Geology, Kyushu University)
Loc. 359 of Toriyama (1958); around the top of Tsugunenoatama, northeastern hill of Ofuku-dai, Beppu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Bashkirian or Moscovian, Late Carboniferous

***Profusulinella daiyamensis* Hasegawa, 1967**

Sci. Repts., Niigata Univ., Ser. E, no. 1, p. 10-14, pl. 1, figs. 1-38, pl. 2, figs. 1-2, pl. 3, figs. 1-4
Holotype: Reg. no. 216-11 (Department of Geology and Mineralogy, Niigata University)
Loc. 216, about 750 m S of Sankakubara, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Bashkirian or early Moscovian, Late Carboniferous

***Profusulinella fukujiensis* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 199-201, pl. 4, figs. 16-25
Holotype: Reg. no. 20250 (Institute of Geology and Mineralogy, Tokyo University of Education)
Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan
Lower Member, Ichinotani Formation
Bashkirian, Late Carboniferous

***Profusulinella fusiformis* Sada, 1972**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 87, p. 439-440, pl.

52, figs. 5-12

Holotype: A12801D13b (no information on the registered place)
Taishaku-dai, Tojo-cho, Hiroshima Prefecture, Japan
Taishaku Limestone
Moscovian, Late Carboniferous

***Profusulinella hinodensis* Kobayashi, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 176, p. 627-630, figs. 4-3--7, 6-5
Holotype: D2-1832 (Division of Earth Sciences, Museum of Nature and Human Activities, Hyogo)
Kamiyozawa, Akiruno City, Tokyo, Japan
Early Late Carboniferous

***Profusulinella omiensis* Watanabe, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 382, pl. 52, figs. 1-10
Holotype: TGU-72021 (Tokyo Gakugei University)
0.7 km E of Uta, Omi Limestone, Omi-machi, Niigata Prefecture, Japan
Omi Limestone
Moscovian, Late Carboniferous

***Profusulinella probiconica* Watanabe, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 383-384, pl. 52, figs. 21-24
Holotype: TGU-72039 (Tokyo Gakugei University)
0.5 km E of Uta, Omi Limestone, Omi-machi, Niigata Prefecture, Japan
Omi Limestone
Moscovian, Late Carboniferous

***Profusulinella toriyamai* Sada, 1961**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 4, p. 97-99, pl. 9, figs. 1-13
Holotype: GK.D183 (Department of Geology, Kyushu University) identified as *Profusulinella* sp. A (pl. 1, fig. 20) in Toriyama (1958)
Loc. 352 of Toriyama (1958); Southwest-western slope of Shishide-dai, Akago, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Bashkirian or early Moscovian, Late Carboniferous
Toriyama, R. (1958): Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 1-264, pls. 1-48

***Protriticites masamichii* Ota, 1994**

Bull. Kitakyushu Mus. Nat. Hist., no. 13, p. 17-21, pl. 2, figs. 1-7
Holotype: KMNH IvP400,003 (Kitakyushu Museum of Natural History)
Maruyama, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan
Akiyoshi Limestone

Kasimovian, Late Carboniferous

***Protriticites nakahatensis* Ishizaki, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 51, p. 110-111, pl. 16, figs. 7-11
Holotype: IGPS78379 (Institute of Geology and Paleontology, Tohoku University)
Nakahata, Nyukawa-mura, Gifu Prefecture, Japan
Nakahata Formation
Kasimovian?, Late Carboniferous

***Protriticites robustus* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 163, p. 813-814, figs. 3-1--4
Holotype: ASM25040B* (Akiyoshi-dai Museum of Natural History)
E of Managatake, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Kasimovian, Late Carboniferous

***Protriticites tethydis* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 95, pl. 12, figs. 13-18, pl. 13, fig. 4
Holotype: Reg. no. 22221* (Institute of Geology and Mineralogy, Tokyo University of Education)
Ban Pha Noi, close to Wang Saphung, Loei, Northeast Thailand
Wang Saphung Formation
Late Moscovian or early Kasimovian, Late Carboniferous

***Protriticites toriyamai* Ota, 1994**

Bull. Kitakyushu Mus. Nat. Hist., no. 13, p. 22-26, pl. 3, figs. 1-4
Holotype: KMNH IvP400,005 (Kitakyushu Museum of Natural History)
Maruyama, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Kasimovian, Late Carboniferous

***Protriticites yanagidai* Ota, 1994**

Bull. Kitakyushu Mus. Nat. Hist., no. 13, p. 12-16, pl. 1, figs. 1-7
Holotype: KMNH IvP400,001 (Kitakyushu Museum of Natural History)
Maruyama, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Kasimovian, Late Carboniferous

***Pseudodoliolina gracilis* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 75-76, pl. 15, figs. 19-24
Holotype: GK.D13741* (Department of Geology, Kyushu

University)

Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian and Murgabian, Middle Permian

***Pseudodoliolina otakiensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 110-111, pl. 22, figs. 1-5
No type designation
Otaki-mura, Saitama Prefecture, Japan
Late Early Permian

***Pseudodoliolina primigena* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 73-75, pl. 15, figs. 8-18
Holotype: GK.D13145c* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian and Murgabian, Middle Permian

***Pseudodoliolina pseudolepida gravitesta* Kanmera, 1954**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 12-14, pl. 2, figs. 1-6
No type designation
N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan
Kuma Formation
Midian, Middle Permian

***Pseudodoliolina saraburiensis* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 71-73, pl. 14, figs. 19-22, pl. 15, figs. 1-7
Holotype: GK.D13059a* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Kubergandian, Middle Permian

***Pseudoendothyra? constricta* Igo, Ueno and Sashida, 1993**
(see remarks)

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 169, p. 39-40, figs. 7-5--13
Holotype: IGUT-KU0340* (Institute of Geoscience, University of Tsukuba)
E of Ban Phia, Loei, Northeast Thailand
Wang Saphung Formation
Yakhtashian, Early Permian
The specific name is preoccupied by *P. constricta* Bogush and Yuferev, 1962 (Foraminifery i stratigrafiya kamennougol'nykh otlozheniy Karatau i Talasskogo Alatau. AN SSSR, Sibirskoe Otdel., 234 pp), therefore a new replaced name is necessary

***Pseudoendothyra musashiensis* Kobayashi, 1994**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 176, p. 634-635,

figs. 5-2--9

Holotype: D2-1746 (Division of Earth Sciences, Museum of Nature and Human Activities, Hyogo)
Kamiyozawa, Akiruno City, Tokyo, Japan
Latest Early Carboniferous?

***Pseudofusulina aganoensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 70-71, pl. 10, figs. 4-8
No type designation
Shomaru Pass, Saitama Prefecture, Japan
Middle Permian

***Pseudofusulina arataniensis* Kawano, 1960**

Sci. Repts., Tohoku Univ., 2nd Ser., Spec. Vol., no. 4, p. 226-228, pl. 24, figs. 15-20, pl. 25, figs. 1-3
Holotype: 635 (no information on the registered place)
Aratani Conglomerate in Aratani, 1.5 km NW of Mt. Suzumi, Yamaguchi City, Yamaguchi Prefecture, Japan
Pebbles in the Aratani Conglomerate
Murgabian, Middle Permian

***Pseudofusulina atetsuensis* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 208-210, pl. 8, figs. 6-12
Holotype: JPF10259 (Institute of Geology and Mineralogy, Kyoto University)
Atetsu-dai, Okayama Prefecture, Japan
Atetsu Limestone
Early Permian

***Pseudofusulina bacca* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 15, pl. 6, figs. 9-14
Holotype: specimen illustrated on pl. 6, fig. 11 (no register number)
Onogi, near Lake Biwa, Shiga Prefecture, Japan
Lower Permian

***Pseudofusulina bustosi* Chisaka and Corvalan, 1979**

Bull. Fac. Educ., Chiba Univ., vol. 28, pt. 2, p. 43-44, pl. 3, figs. 1-8, pl. 6, figs. 1-10
Holotype: specimen illustrated on pl. 6, fig. 5 (no register number)
Isla Guarello, Isla Madre de Dios, Southern Chile
Early Permian

***Pseudofusulina confrage* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 101-102, pl. 14, figs. 1-3
Holotype: Ak28-217 (Department of Earth Sciences, Saitama University)
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Pseudofusulina cuniculata* Igo, 1967**

Mem. Mejiro Gakuen Woman's Junior Coll., vol. 4, p. 8-9, pl. 6, figs. 1-6

Holotype: Reg. no. 21061a (Institute of Geology and Mineralogy, Tokyo University of Education)

Sotedani, Nyukawa-mura, Gifu Prefecture, Japan

Upper Sote Formation

Early Middle Permian

***Pseudofusulina duplithicata* Igo, 1956**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 4, p. 297-299, pl. 18, figs. 1-10, pl. 19, figs. 1-3, 6

Holotype: Reg. no. 20220 (Institute of Geology and Mineralogy, Tokyo University of Education)

Osobudani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Pebbles of the Osobudani Conglomerate

Bolorian, Early Permian

***Pseudofusulina futagoensis* Takaoka, 1966**

Bull. Chichibu Museum Nat. Hist., no. 13, p. 54-55, pl. 9, figs. 8-14

Holotype: specimen illustrated on pl. 9, fig. 12, no register number

Futagoyama, Kanto Mountain, Japan

Futagoyama Limestone

Late Early Permian

***Pseudofusulina globosa* var. *exilis* Toroiyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 175-178, pl. 23, figs. 7-16, pl. 24, figs. 1-20

Holotype: GK.D1601 (Department of Geology, Kyushu University)

Loc. 463 of Toriyama (1958); northwestern slope of Benkei-yama, 600 m N of Minami-yama, Ota, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Late Early Permian and early Middle Permian

***Pseudofusulina gobbetti* Igo, 1967**

Geol. Palaeont. SE Asia, vol. 3, p. 33-34, pl. 5, figs. 1-9, pl. 6, fig. 7

Holotype: MF1028 (no information on the registered place)

Jenka Pass, Pahang, Peninsular Malaysia

Midian, Middle Permian

***Pseudofusulina gujoensis* Kanuma, 1959**

Bull. Tokyo Gakugei Univ., vol. 10, p. 135-136, pl. 5, figs. 1-3

Syntypes: IES83-11 (Tokyo Gakugei University)

Inunakidani, Kuchimyogata-mura, Gifu Prefecture, Japan

Akuda Formation

Late Early Permian

***Pseudofusulina hashigamiensis* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 281-282, pl.

48, figs. 10-13

Holotype: IW21C-19b (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesenuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Middle Permian

***Pseudofusulina hexagonaria* Igo, 1964**

Jour. Paleont., vol. 38, no. 4, p. 647, pl. 105, figs. 1-7

Holotype: Reg. no. 20513 (Institute of Geology and Mineralogy, Tokyo University of Education)

Nyukawa-mura, Gifu Prefecture, Japan

Shiroi Formation

Late Early Permian

***Pseudofusulina hisamatsui* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 287-288, pl. 52, figs. 5-8

Holotype: IW21-10a (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesenuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Middle Permian

***Pseudofusulina horadaniensis* Igo, 1964**

Jour. Paleont., vol. 38, no. 4, p. 647, pl. 104, figs. 7-9

Holotype: Reg. no. 21130 (Institute of Geology and Mineralogy, Tokyo University of Education)

Horadani, Nyukawa-mura, Gifu Prefecture, Japan

Kono Formation

Late Early Permian

***Pseudofusulina horrida* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 196-199, pl. 31, figs. 13-20

Holotype: specimen illustrated on pl. 31, fig. 14 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Gzhelian, Late Carboniferous

***Pseudofusulina? isaensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 184-186, pl. 27, figs. 14-21

Holotype: GK.D1627 (Department of Geology, Kyushu University)

Loc. 522 of Toriyama (1958); southern slope of a hill located about 500 m NE of the hill of 319 m in height, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Late Early Permian and early Middle Permian

***Pseudofusulina isomie* Igo, 1965**

Jour. Paleont., vol. 39, no. 2, p. 219-220, pl. 29, fig. 6, pl. 30,

figs. 5-6, pl. 31, figs. 6-7

Holotype: Reg. no. 23999 (Institute of Geology and Mineralogy, Tokyo University of Education)
Nyukawa-mura, Gifu Prefecture, Japan
Lower Sote Formation
Bolorian, Lower Permian

***Pseudofusulina iwaizakiensis* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 290-291, pl. 48, figs. 1-9
Holotype: IW21B-6 (Department of Earth Sciences, Saitama University)
Iwaizaki, Kesennuma City, Miyagi Prefecture, Japan
Iwaizaki Limestone
Middle Permian

***Pseudofusulina kagemoriensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 71-73, pl. 9, figs. 2-4
No type designation
Kagemori, Chichibu City, Saitama Prefecture, Japan
Early Permian

***Pseudofusulina kanoensis* Takaoka, 1966**

Bull. Chichibu Museum Nat. Hist., no. 13, p. 60-61, pl. 14, figs. 1-12, 14
Holotype: specimen illustrated on pl. 14, fig. 1, no register number
Kano-san, Nakazato-mura, Gunma Prefecture, Japan
Kano-san Limestone
Late Early Permian

***Pseudofusulina kikuchii* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 288-289, pl. 49, figs. 1-6
Holotype: IW53-9a (Department of Earth Sciences, Saitama University)
Iwaizaki, Kesennuma City, Miyagi Prefecture, Japan
Iwaizaki Limestone
Middle Permian

***Pseudofusulina kiyoharai* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 286-287, pl. 50, figs. 1-7
Holotype: IW68-33 (Department of Earth Sciences, Saitama University)
Iwaizaki, Kesennuma City, Miyagi Prefecture, Japan
Iwaizaki Limestone
Middle Permian

***Pseudofusulina krafftii* var. *magna* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 178-181, pl. 25, figs. 1-10, pl. 26, figs. 1-15
Holotype: GK.D1582 (Department of Geology, Kyushu

University)

Loc. 382 of Toriyama (1958); southwestern slope of Tanaiwa, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Early Permian and early Middle Permian

***Pseudofusulina krafftii norikurensis* Igo, 1959**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 6, p. 244-245, pl. 2, figs. 1-3
Holotype: Reg. no. 20276 (Institute of Geology and Mineralogy, Tokyo University of Education)
Western slope of the Hirayu Pass, Kamitakara-mura, Gifu Prefecture, Japan
Yakhtashian, Early Permian

***Pseudofusulina krotowi elata* Ishizaki, 1962**

Sci. Repts., Tohoku Univ., 2nd. Ser., vol. 34, no. 2, p. 150-152, pl. 8, fig. 2
Lectotype(?): specimen with Cat. no. 2944 (no information on registered place) identified as *Pseudofusulina prisca* (pl. 4, fig. 5) of Chen (1934)
Kuantzushan, Kueichih, Anhui Province, China
Late Early Permian
Chen, S. (1934): Palaeont. Sinica, Ser. B, vol. 4, fasc. 2, p. 1-133, pls. 1-16

***Pseudofusulina krotowi* var. *nakaoensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 84, pl. 15, figs. 6-8
No type designation
Nakao, Agano-machi, Saitama Prefecture, Japan
Early Permian

***Pseudofusulina kumasoana* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 199-201, pl. 32, figs. 9-15, pl. 35, figs. 10-12
Holotype: specimen illustrated on pl. 32, fig. 9 (no register number)
Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan
Yayamadake Limestone
Gzhelian, Late Carboniferous

***Pseudofusulina kusamensis* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 219-221, pl. 11, figs. 1-4
Holotype: JPF10298 (Institute of Geology and Mineralogy, Kyoto University)
Atetsu-dai, Okayama Prefecture, Japan
Atetsu Limestone
Middle Permian

***Pseudofusulina?* *kyowaensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 190-192 pl. 29, figs. 10-18

Holotype: GK.D617 (Department of Geology, Kyushu University)

Loc. 258 of Toriyama (1958); along the uphill road from Kuroiwa southeastward to Chojagamori, Kuroiwa, Kyowa, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Early Permian?

***Pseudofusulina kyowaensis angusta* Ishizaki, 1962**

Sci. Repts., Tohoku Univ., 2nd. Ser., vol. 34, no. 2, p. 156-157, pl. 9, figs. 5-6.

No type designation

About 2 km NE of Otado, Yusuhara-cho, Kochi Prefecture, Japan

Onogahara Formation

Murgabian, Middle Permian

***Pseudofusulina leavicula* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 87-88, pl. 11, figs. 1-10

Holotype: Reg. no. 10947 (Department of Earth Sciences, Saitama University)

Kamikagemori, Chichibu City, Saitama Prefecture, Japan

Late Early Permian

***Pseudofusulina leavicula* var. *expansa* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 88-89, pl. 6, figs. 25-27

Syntypes: Reg. nos. 10941, 10945 (Department of Earth Sciences, Saitama University)

Kamikagemori, Chichibu City, Saitama Prefecture, Japan

Late Early Permian

***Pseudofusulina midoridaniensis* Sashida, 1980**

Prof. Saburo Kanno Mem. Vol., p. 300, pl. 35, figs. 1-3

Holotype: IGUT5706 (Institute of Geoscience, University of Tsukuba)

Yoganeyama area, Gifu Prefecture, Japan

Early Permian

***Pseudofusulina minoensis* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 640-642, figs. 7-1--9

Holotype: TGUFU1022 (Department of Astronomy and Earth Sciences, Tokyo Gakugei University)

Nishi-Akuda, Hachiman-cho, Gifu Prefecture, Japan

Late Early Permian?

***Pseudofusulina miyamensis* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 642, figs. 7-10--11

Holotype: TGUFU1031 (Department of Astronomy and Earth Sciences, Tokyo Gakugei University)

Nishi-Akuda, Hachiman-cho, Gifu Prefecture, Japan

Late Early Permian?

***Pseudofusulina motoyoshiensis* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 283-284, pl. 47, figs. 13-18

Holotype: IW21B-17 (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesenuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Middle Permian

***Pseudofusulina nishikoriensis* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 543-544, pl. 5, figs. 6-11

Holotype: specimen illustrated on pl. 5, fig. 6 (no register number)

Maiya-Toyoma area, Miyagi Prefecture, Japan

Rodai Formation

Early Middle Permian

***Pseudofusulina onukii* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 537-538, pl. 7, figs. 6-14

Holotype: specimen illustrated on pl. 7, fig. 6 (no register number)

Maiya-Toyoma area, Miyagi Prefecture, Japan

Rodai Formation

Early Middle Permian

***Pseudofusulina otukai* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 62-63, pl. 6, fig. 11, pl. 7, figs. 1-2

No type designation

Kano-san, Nakazato-mura, Gunma Prefecture, Japan

Early Permian

***Pseudofusulina oyensis* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, 285-286, pl. 51, figs. 1-5p.

Holotype: IW46-19 (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesenuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Middle Permian

***Pseudofusulina ozakii* Chisaka, 1960**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 2, p. 243-244, pl. 2, figs. 1-6, 9-10

Holotype: specimen illustrated on pl. 2, fig. 1 (no register number)

Takagami Quarry, Choshi City, Chiba Prefecture, Japan

Pebble in the Takagami Conglomerate

Late Middle Permian

***Pseudofusulina paracontractus* Kanuma, 1959** (see remarks)

Bull. Tokyo Gakugei Univ., vol. 10, p. 142-143, pl. 7, figs. 4-5

Syntypes: IES4214-1 (Tokyo Gakugei University)

Irasu, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Okumyogata Formation

Late Early Permian

The species name may be *paracontracta* following the gender of the genus***Pseudofusulina paramotohashii* Morikawa, 1960**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 3, p. 284-285, pl. 49, figs. 7-11

Holotype: IW40-20 (Department of Earth Sciences, Saitama University)

Iwaizaki, Kesenuma City, Miyagi Prefecture, Japan

Iwaizaki Limestone

Middle Permian

***Pseudofusulina paratschernyshewi* Kanuma, 1959**

Bull. Tokyo Gakugei Univ., vol. 10, p. 137-138, pl. 6, figs. 4-7

Syntypes: IES867-1, 854-2-a, 3824-b (Tokyo Gakugei University)

Akuda, Aioi-mura, Kuchibora, Nishiwara-mura, and Kamikowa, Suwara-mura, Gifu Prefecture, Japan

Kuchibora Formation

Late Early Permian

***Pseudofusulina popoensis* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 540-541, pl. 4, figs. 1, 3-6, 8-9, pl. 5, figs. 1-5

Holotype: specimen illustrated on pl. 4, fig. 1 (no register number)

Maiya-Toyoma area, Miyagi Prefecture, Japan

Nishikoro and Rodai Formations

Late Early and early Middle Permian

***Pseudofusulina santyuensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 79-80, pl. 13, figs. 1-5

No type designation

Kano-ushiro, Nakazato-mura, Gunma Prefecture, Japan

Early Permian

***Pseudofusulina sekii* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 280-281, pl. 5, figs. 3-8

Holotype: Reg. no. 20524a (Institute of Geology and Mineralogy, Tokyo University of Education)

About 500 m S of Ibukiyama, Shiga Prefecture, Japan

Ibukiyama Limestone

Bolorian, Early Permian

***Pseudofusulina siamensis* Igo, Ueno and Sashida, 1993**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 169, p. 29-33, figs.

6-1--15

Holotype: IGUT-KU0313* (Institute of Geoscience, University of Tsukuba)

E of Ban Phia, Loei, Northeast Thailand

Wang Saphung Formation

Yakhtashian, Early Permian

***Pseudofusulina subtenuis* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 81, pl. 6, figs. 1-9

Holotype: Reg. no. 10942 (Department of Earth Sciences, Saitama University)

Sakaishi, Agano-machi, Saitama Prefecture, Japan

Late Early Permian

***Pseudofusulina tambensis* Sakaguchi, 1963**

Mem. Osaka Univ. Liberal Arts and Sci., B, no. 12, p. 103-104, pl. 7, figs. 1-3, pl. 8, figs. 2-3

Holotype: specimen illustrated in pl. 7, fig. 1 (no register number)

N of Izuriha-Kamijo, Takatsuki City, Osaka Prefecture, Japan

Middle Permian

***Pseudofusulina tanoensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 99-100, pl. 16, figs. 11-13, pl. 19, figs. 18-20

No type designation

Kano-ushiro, Nakazato-mura, Gunma Prefecture, Japan

Early Permian

***Pseudofusulina toyomensis* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 537-538, pl. 3, figs. 1-13

Holotype: specimen illustrated on pl. 3, fig. 1 (no register number)

Maiya-Toyoma area, Miyagi Prefecture, Japan

Rodai Formation

Early Middle Permian

***Pseudofusulina tschernyschewi* var. *globosa* Huzimoto, 1936** (see remarks)

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 86, pl. 16, figs. 9-10

No type designation

Shomaru Pass, Saitama Prefecture, Japan

Middle Permian

Junior primary homonym preoccupied by *Pseudofusulina vulgaris globosa* (Schellwien) of Huzimoto (1936), p.77-78***Pseudofusulina uenoensis* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 282-283, pl. 4, figs. 1-8

Holotype: Reg. no. 20516 (Institute of Geology and Mineralogy, Tokyo University of Education)

About 2 km SW of Ibukiyama, Shiga Prefecture, Japan
Ibukiyama Limestone
Bolorian, Early Permian

***Pseudofusulina vulgaris* var. *horiguchii* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 90-91, pl. 9, figs. 7-14
Syntypes: Reg. nos. 11002, 11008, 11009, 11012, 11014 (Department of Earth Sciences, Saitama University)
Hanagiri, Agano-machi, Saitama Prefecture, Japan
Late Early Permian

***Pseudofusulina vulgaris* var. *megaspherica* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 170-172, pl. 22, figs. 8-17, pl. 23, figs. 1-3
Holotype: GK.D1666 (Department of Geology, Kyushu University)
Loc. 568C of Toriyama (1958); around a hill located about 650 m NNE of the hill of 319 m height, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Early Permian and early Middle Permian

***Pseudofusulina vulgaris* var. *pseudowatanabei* Kanuma, 1959**

Bull. Tokyo Gakugei Univ., vol. 10, p. 147-148, pl. 8, figs. 4-8, 10, 12
Syntypes: IES 10236-4, 83-11 (Tokyo Gakugei University)
Arakurabora, Okumyogata-mura, Gifu Prefecture, Japan
Okumyogata Formation
Late Early Permian

***Pseudofusulina yubanosawensis* Chisaka, 1962**

Jour. Coll. Arts and Sci., Chiba Univ., vol. 3, no. 4, p. 542, pl. 2, figs. 6-13, pl. 4, figs. 2, 7, 10
Holotype: specimen illustrated on pl. 2, fig. 6 (no register number)
Maiya-Toyoma area, Miyagi Prefecture, Japan
Nishikoro and Rodai Formations
Late Early and early Middle Permian

***Pseudofusulina (Daixina) petchabunensis* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 107-109, pl. 17, figs. 7-12, pl. 18, figs. 1-4
Holotype: Reg. no. 22118* (Institute of Geology and Mineralogy, Tokyo University of Education)
Ban Nam Lum, S of Phetchabun, Northeast Thailand
Gzhelian, Late Carboniferous

***Pseudofusulina (Schwagerina?) nishiwarensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 10, p. 136, pl. 6, figs. 1-3
Syntypes: IES398266-1-a (Tokyo Gakugei University)
Iruma, Nishiwara-mura, Gifu Prefecture, Japan
Akuda Formation
Late Early Permian

***Pseudofusulinella (Kanmeria) japonica* Ozawa, 1967**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 68, p. 166-168, pl. 14, fig. 7, pl. 15, figs. 1-21
Holotype: GK.D15001 (Department of Geology, Kyushu University)
Loc. RA151, Raidenyama, Ome City, Tokyo, Japan
Raidenyama Formation
Late Carboniferous?

***Pseudoreichelina discoidea* Ueno, 1992**

Sci. Repts., Inst. Geosci., Univ. Tsukuba, Sect. B, vol. 13, p. 10, figs. 6-22--30
Holotype: ASM25291A* (Akiyoshi-dai Museum of Natural History)
Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Yakhtashian, Early Permian

***Pseudoreichelina endothyroidea* Ueno, 1992**

Sci. Repts., Inst. Geosci., Univ. Tsukuba, Sect. B, vol. 13, p. 10-12, figs. 6-1--21
Holotype: ASM25272* (Akiyoshi-dai Museum of Natural History)
Kaerimizu, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Yakhtashian, Early Permian

***"Pseudoschwagerina" nakazawai* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 183-185, pl. 3, figs. 5-13
Holotype: JPF10170 (Institute of Geology and Mineralogy, Kyoto University)
Atetsu-dai, Okayama Prefecture, Japan
Atetsu Limestone
Late Late Carboniferous

***Pseudoschwagerina kanmerai* Sada, 1964**

Jour. Sci., Hiroshima Univ., Ser. C, vol. 4, p. 263-266, pl. 28, figs. 1-4
Holotype: IGSB-AZ-SA6-98 (no information on the registered place)
Atetsu-dai, Niimi City, Okayama Prefecture, Japan
Iwamoto Formation, Atetsu Limestone
Early Permian

***Pseudoschwagerina miharanoensis* Akagi, 1958**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 6, p. 153-156, pl. 1, figs. 1-15
Holotype: Reg. no. 22022 (Institute of Geology and Mineralogy, Tokyo University of Education)
Miharanoro, Tojo-cho, Hiroshima Prefecture, Japan
Taishaku Limestone

Early Permian

***Pseudoschwagerina minatoi* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 179-181, pl. 28, figs. 1-8

Holotype: specimen illustrated on pl. 28, fig. 1 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Gzhelian, Late Carboniferous

***Pseudoschwagerina morikawai* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 238-239, pl. 15, figs. 11-17

Holotype: Reg. no. 20178 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Gzhelian, Late Carboniferous

***Pseudoschwagerina orientale* Huzimoto, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3/4, p. 123-125, pl. 7, figs. 17-21

No type designation

Huren Limestone Cave, Notsu-machi, Oita Prefecture, Japan

Tsukumi Limestone

Late Late Carboniferous

***Pseudoschwagerina saigusai* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 179-180, pl. 2, figs. 12-15

Holotype: JPF100157 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Asselian, Early Permian

***Pseudoschwagerina samegaiensis* Huzimoto, 1941**

Jour. Geol. Soc. Japan, vol. 48, no. 269 (Trans. Paleont. Soc. Japan, no. 120), p. 96-97, pl. 5(2), figs. 8-12

No type designation

Shimonyu, Samegai, Maibara-cho, Shiga Prefecture, Japan

Early Permian

***Pseudoschwagerina schellwieni* Hanzawa, 1938**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1/2, p. 71-72, pl. 4, figs. 1-3

Cotypes: IGPSJ21355 (Institute of Geology and Paleontology, Tohoku University) (IGPS21355)

N of Maiya, Towa-cho, Miyagi Prefecture, Japan

Early Permian

***Pseudoschwagerina skinneri* Sada and Danner, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 167, p. 1260-1262,

figs. 2-1--2, 3-1

Holotype: UHBHHR-1 (no information on the registered place) Southwest side of large limestone knob (McGregor Hill) just N of Ida Lake and S of Pinantan Lake, NE of Kamloops, British Columbia, Canada

Early Permian

***Pseudoschwagerina subsphaerica* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 181-182, pl. 3, figs. 1-4

Holotype: JPF10164 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Sakmarian, Early Permian

***Pseudoschwagerina taiensis* Toriyama, 1944**

Japan. Jour. Geol. Geogr., vol. 19, nos. 1-4, p. 245-246, pl. 26, figs. 4-7

No type designation

Between Ban Doi Hoato and Ban Ai, about 80 km NNE of Chiang Mai, North Thailand

Asselian, Early Permian

***Pseudoschwagerina toriyamai* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 110-111, pl. 18, figs. 5-9

Holotype: Reg. no. 22135* (Institute of Geology and Mineralogy, Tokyo University of Education)

Ban Nam Lum, S of Phetchabun, Northeast Thailand

Gzhelian, Late Carboniferous

***Pseudoschwagerina (Robustoschwagerina) hidensis* Igo, 1964**

Jour. Paleont., vol. 38, no.2, p. 290-291, pl. 45, figs. 1-3

Holotype: Reg. no. 21711 (Institute of Geology and Mineralogy, Tokyo University of Education)

Nyukawa-mura, Gifu Prefecture, Japan

Late Early Permian

***Pseudoschwagerina (Zellia) nunosei* Hanzawa, 1938**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1/2, p. 72-73, pl. 4, figs. 4-6

Cotypes: IGPSJ21356, 21357 (Institute of Geology and Paleontology, Tohoku University) (IGPS21356, 21357)

Magoe and Nagaiwa, Ofunato City, Iwate Prefecture, Japan

Sakamotozawa Formation

Early Permian

***Pseudostaffella japonica* Kobayashi, 1973**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 92, p. 211, pl. 31, figs. 7-16

Holotype: Reg. no. 2056-1 (Institute of Geology and Astronomy, Tokyo Gakugei University)

Nagaiwa, Ofunato City, Iwate Prefecture, Japan

Middle Nagaiwa Formation

Bashkirian, Late Carboniferous

***Pseudostaffella kanumai* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 194-196, pl. 4, fig. 26, pl. 5, figs. 1-5

Holotype: Reg. no. 20205 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Bashkirian, Late Carboniferous

***Pseudostaffella kanumai* var. *pauciseptata* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 196-197, pl. 5, figs. 6-8

Holotype: 20454 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Lower Member, Ichinotani Formation

Bashkirian, Late Carboniferous

***Pseudostaffella minatoi* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 545, pl. 3, figs. 5-7

Holotype: UHR.30273 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Bashkirian, Late Carboniferous

***Pseudostaffella minuta* Sada, 1975**

Mem. Fac. Integr. Arts and Sci. IV, Hiroshima Univ., vol. 1, p. 21-22, pl. 7, figs. 6-9

Holotype: OLY19-23b (no information on the registered place)

Hirotoni, E of Shuhodo cave, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Millerella and *Profusulinella* Zones, Akijoshi Limestone

Bashkirian, Late Carboniferous

***Pseudostaffella subrotunda* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 544-545, pl. 2, figs. 1-11

Holotype: UHR.30250 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Bashkirian, Late Carboniferous

***Pseudostaffella taishakuensis* Sada, 1972**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 87, p. 440-441, pl. 52, figs. 13-21, pl. 53, fig. 12

Holotype: A12801D4d (no information on the registered place)

Taishaku-dai, Tojo-cho, Hiroshima Prefecture, Japan

Taishaku Limestone

Moscovian, Late Carboniferous

***Quasifusulina hanzawai* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 11, pl. 4, figs. 15-17

Holotype: 347a (no information on the registered place)

500 m E of Suita, Tosayamada-cho, Kochi Prefecture, Japan

Late Late Carboniferous?

***Quasifusulina ichikawai* Niko and Watanabe, 1987**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 37, no. 1, p. 48-51, figs. 6-A--B, D--E

Holotype: IGMH SN0030 (Institute of Geology and Mineralogy, Hiroshima University)

N of Kuzuryu Late, Izumi-mura, Fukui Prefecture, Japan

Late Late Carboniferous

***Quasifusulina izumiensis* Niko and Watanabe, 1987**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 37, no. 1, p. 51, figs. 6-C, 7-B?, C, 10-B?, E--F

Holotype: IGMH SN0038 (Institute of Geology and Mineralogy, Hiroshima University)

N of Kuzuryu Late, Izumi-mura, Fukui Prefecture, Japan

Late Late Carboniferous

***Quasifusulina longissima ultima* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 158-160, pl. 24, figs. 1-8

Holotype: specimen illustrated on pl. 24, fig. 1 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Gzhelian, Late Carboniferous

***Quasifusulinoides toriyamai* Ueno, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 163, p. 821-824, figs. 6-1--13

Holotype: ASM25068* (Akiyoshi-dai Museum of Natural History)

E of Managatake, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian, Late Carboniferous

***Quasireichelina expansa* Ueno, 1992**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 168, p. 1285-1287, figs. 8-1--8

Holotype: IGUT-KU0136* (Institute of Geoscience, University of Tsukuba)

Takakurayama, Yaguki, Iwaki City, Fukushima Prefecture, Japan

Motomura Formation, Takakurayama Group

Late Middle Permian

***Rauserella fujimotoi* Kobayashi, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 226, pl. 32,

figs. 1-7

Holotype: Reg. no. 20501 (Institute of Geology and Mineralogy, Tokyo University of Education)

A ridge about 500 m NE of Ibukiyama, Shiga Prefecture, Japan
Ibukiyama Limestone
Middle Permian

***Rectomillerella okuboensis* Matsusue, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 152, p. 648-649, figs. 4-1--2

Holotype: GK.D7001a (Department of Geology, Kyushu University)

Okubo, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Millerella yowarensis Zone, Akiyoshi Limestone
Bashkirian, Late Carboniferous

***Reichelina chichibuensis* Morikawa, 1956**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 2, p. 251-252, pl. 32, figs. 1-13

Holotype: Reg. no. 11046 (Department of Earth Sciences, Saitama University)

Onagata, Kamiyoshida-machi, Saitama Prefecture, Japan
Late Permian

***Reichelina matsushitai* Nogami, 1958**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 25, no. 2, p. 99, pl. 1, figs. 11-22

Holotype: JPF10010 (Institute of Geology and Mineralogy, Kyoto University)

Kawahigashi and Yakuno, Kyoto Prefecture, Japan
Maizuru Group
Late Permian

***Robustoschwagerina xekongensis* Ueno, 1998**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 24, p. 60-63, figs. 2 (1-5), 3 (1-2).

Holotype: IGUT-KU1075* (Institute of Geoscience, University of Tsukuba)

Ban Huang-Kang along the Xe Kong River, Xe Kong district, southern Laos

A limestone pebble of a conglomerate bed of the Triassic Manggiang Formation

Sakmarian or Yakhtashian, Early Permian

***Rugosofusulina ibukiensis* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 267, pl. 1, figs. 31-34

Holotype: Reg. no. 20588a (Institute of Geology and Mineralogy, Tokyo University of Education)

About 300 m NE of Ibukiyama, Gifu Prefecture, Japan
Ibukiyama Limestone
Early Permian

***Rugosofusulina pristina* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 184-186, pl. 30, figs. 6-10

Holotype: specimen illustrated on pl. 30, fig. 6 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan
Yayamadake Limestone

Gzhelian, Late Carboniferous

***Schellwienia deprati* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 34-35, pl. 5, figs. 6-7

No type designation

Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Early Permian?

***Schellwienia edoensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 30-31, pl. 6, figs. 1b, 2-3

No type designation

Kaerimizu, Yowara, and Ofuku-dai, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Middle Permian

***Schellwienia ellipsoidalis* var. *orientis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 22-23, pl. 6, fig. 1a, pl. 8, figs. 3, 5

No type designation

Ofukudai, Nakamura, and Kaerimizu, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Bolorian, Early Permian

***Schellwienia gracilis* Ozawa, 1927**

Japan. Jour. Geol. Geogr., vol. 5, no. 3, p. 84-85, pl. 7, figs. 5-6

No type designation

Wuhutsui coalfield, N of Dairen, Liaoning Province, China

Permian?

***Schellwienia haydeni* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 39-40, pl. 9, figs. 8-9

No type designation

Ueyama, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Late Carboniferous?

***Schellwienia japonica* var. *truncata* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 149, pl. 37, figs. 1a-1b, pl. 39, fig. 11, pl. 45, fig. 13

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone
Early Middle Permian

***Schellwienia kaerimizensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 31-32, pl. 4, figs. 5-7, pl. 6, fig. 5
No type designation
Kaerimizu, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Middle Permian

***Schellwienia oblonga* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 45-46, pl. 8, figs. 7, 9
No type designation
Yowara, Akiyoshi-dai, Shuho Town, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Early Permian

***Schellwienia ominensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 42-43, pl. 4, figs. 3-4
No type designation
Kamiryo, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Permian

***Schellwienia ozawai* Iisaka, 1932**

Jour. Geol. Soc. Tokyo, vol. 39, p. 1-4, figs. 1-4
No type designation
Funafuse-yama, Gifu Prefecture, Japan
Funafuse-yama Limestone
Middle Permian

***Schellwienia satoi* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 44-45, pl. 8, figs. 4, 6a, 8, pl. 9, fig. 3?
No type designation
Hoso-ono, Shuho-cho and Ueyama, Mito-cho, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Kasimovian, Late Carboniferous

***Schellwienia staffi* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 21, pl. 4, fig. 1
No type designation
Shishide-dai, Akago, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Schellwienia subobsoleta* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 41-42, pl. 5, fig. 2, pl. 9, figs. 2, 4, 5?, 6-7
No type designation
Kagekiyodo cave and Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Late Carboniferous?

***Schellwienia subobsoleta* var. *okuboensis* Ozawa, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. II, vol. 2, pt. 3, p. 149-150, pl. 37, figs. 8a, 9a
No type designation
Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Early Middle Permian

***Schellwienia suzukii* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 43-44, pl. 4, fig. 2
No type designation
Kamiryo, Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Permian

***Schellwienia yobarensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 27, pl. 7, figs. 7-8
No type designation
Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Late Early Permian

***Schubertella cylindrica* Sakagami and Omata, 1957**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 250-251, pl. 19, figs. 2-4
Holotype: Reg. no. 2051-A (Department of Geology, Hokkaido Gakugei University; see remarks)
Shiraiwa, Ome City, Tokyo, Japan
Shiraiwa Limestone
Late Late Carboniferous
The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Schubertella haginoensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 6-7, pl. 2, figs. 1-3
Holotype: 225 (no information on the registered place)
900 m N of Hagino, Shirakidani, Nangoku City, Kochi Prefecture, Japan
Kameiwa Formation
Early Permian

***Schubertella haginoensis fusiformis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 7-8, pl. 2, figs. 4-6
 Holotype: 260a (no information on the registered place)
 900 m N of Hagino, Shirakidani, Nangoku City, Kochi
 Prefecture, Japan
 Kameiwa Formation
 Early Permian

***Schubertella yadaniensis* Morikawa and Isomi, 1961**

Geol. Surv. Japan, Report, no. 191, p. 7-8, pl. 2, figs. 1-9, 16
 Holotype: specimen illustrated on pl. 2, fig. 1 (no register
 number)
 Yadani, near Lake Biwa, Shiga Prefecture, Japan
 Lower Permian

***Schwagerina craticulifera* Schwager, 1884**

In Richthofen, F. von, China, Band 4, Beiträge zur
 Paläontologie von China, Abhandlungen, vol. 7, p. 140-143, pl.
 18, figs. 15-25
 Lectotype: specimen illustrated on pl. 18, fig. 17 designated by
 Thompson (1948) (no register number)
 Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
 Akasaka Limestone
 Murgabian, Middle Permian
 Thompson, M. L. (1948): Univ. Kansas, Paleont. Contrib.,
 Protozoa, art. 1, p. 1-184, pls. 1-38

***Schwagerina etoi* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 129-131, pl. 14,
 figs. 17-29
 Holotype: GK.D1640 (Department of Geology, Kyushu
 University)
 Loc. 553 of Toriyama (1958); about 600 m SSW of the top of
 Managatake, Akago, Akiyoshi-dai, Mito-cho, Yamaguchi
 Prefecture, Japan
 Akiyoshi Limestone
 Early Permian

***Schwagerina exilis* var. *takeii* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 106-107, pl.
 24, figs. 8-14
 Holotype: Ak38-11 (Department of Earth Sciences, Saitama
 University)
 Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
 Akasaka Limestone
 Middle Permian

***Schwagerina furoni* var. *tamanouchiensis* Sakagami, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 24, p. 262-265, pl.
 37, figs. 4-12
 Holotype: Reg. no. 2544-A (Department of Geology, Hakodate
 Branch, Hokkaido Gakugei University; see remark)
 Yagooki-dani, Tamanouchi, Hinode-machi, Tokyo, Japan
 Limestone pebble in the Tamanouchi Conglomerate

Bolorian, Early Permian

The type specimens of this species have been stored and will be
 registered in the collections of National Science Museum
 (NSM)

***Schwagerina gifuensis* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 108, pl. 16,
 figs. 1-9
 Holotype: Ak26-12 (Department of Earth Sciences, Saitama
 University)
 Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
 Akasaka Limestone
 Middle Permian

***Schwagerina gigantojaponica* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 287-288,
 pl. 6, fig. 8, pl. 7, figs. 6-7
 Holotype: Reg. no. 20563 (Institute of Geology and Mineralogy,
 Tokyo University of Education)
 About 300 m NE of Ibukiyama, Gifu Prefecture, Japan
 Ibukiyama Limestone
 Late Middle Permian

***Schwagerina globulus japonicus* Watanabe, 1991 (see
 remarks)**

Palaeont. Soc. Japan, Spec. Pap., no. 32, figs. 41-1--16,
 47-7a--7c
 No register number
 N of Akiyoshi-dai Museum of Natural History, Akiyoshi-dai,
 Shuho-cho, Yamaguchi Prefecture, Japan
 Akiyoshi Limestone
 Early Early Permian
 Name not available because of no description

***Schwagerina guembeli compacta* Sakagami and Omata, 1957
 (see remarks)**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 258, pl. 20, figs.
 13-14
 Holotype: Reg. no. 2010-A (Department of Geology, Hokkaido
 Gakugei University; see remarks)
 Shiraiwa, Ome City, Tokyo, Japan
 Shiraiwa Limestone
 Late Late Carboniferous

The subspecific name is preoccupied by *S. compacta* White,
 1932 (Univ. Texas Bull., no. 3211, p. 1-104, pls. 1-10). See *S.*
guembeli omiensis Sakagami and Omata, 1959 as a replaced
 name; The type specimens of this species have been stored and
 will be registered in the collections of National Science Museum
 (NSM)

***Schwagerina guembeli omiensis* Sakagami and Omata, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 34, p. 111
 Replaced name of *S. guembeli compacta* Sakagami and Omata,
 1957

***Schwagerina hawkinsiformis* Igo, 1965**

Jour. Paleont., vol. 39, no. 2, p. 216-217, pl. 30, figs. 7-8
 Holotype: Reg. no. 21041 (Institute of Geology and Mineralogy,
 Tokyo University of Education)
 Hatahoko, Nyukawa-mura, Gifu Prefecture, Japan
 Lower Sote Formation
 Bolorian, Early Permian

***Schwagerina higashidaniensis* Igo, 1964**

Jour. Paleont., vol. 38, no. 4, p. 644-645, pl. 104, figs. 1-4
 Holotype: Reg. no. 21394 (Institute of Geology and Mineralogy,
 Tokyo University of Education)
 Nyukawa-mura, Gifu Prefecture, Japan
 Shiroy Formation
 Late Early Permian

***Schwagerina ibukiensis* Kobayashi, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 289-290,
 pl. 5, figs. 1-2
 Holotype: Reg. no. 20527 (Institute of Geology and Mineralogy,
 Tokyo University of Education)
 About 300 m NE of Ibukiyama, Gifu Prefecture, Japan
 Ibukiyama Limestone
 Late Middle Permian

***Schwagerina ishiie* Igo, 1965**

Jour. Paleont., vol. 39, no. 2, p. 217-218, pl. 31, figs. 2-3
 Holotype: Reg. no. 21073 (Institute of Geology and Mineralogy,
 Tokyo University of Education)
 Sotedani and Hatahoko Nishinotani, Nyukawa-mura, Gifu
 Prefecture, Japan
 Lower Sote Formation
 Bolorian, Early Permian

***Schwagerina kanumai* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 632, figs.
 9-1-4
 Holotype: TGUFU1055 (Department of Astronomy and Earth
 Sciences, Tokyo Gakugei University)
 Nishi-Akuda, Hachiman-cho, Gifu Prefecture, Japan
 Late Early Permian?

***Schwagerina kinosakii* Morikawa, 1958**

Sci. Repts., Saitama Univ., Ser. B, vol. 3, no. 1, p. 109-110, pl.
 16, fig. 10, pl. 17, figs. 1-10
 Holotype: Ak48-15 (Department of Earth Sciences, Saitama
 University)
 Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
 Akasaka Limestone
 Middle Permian

***Schwagerina mongraiensis* Sakagami, 1969**

Geol. Palaeont. SE Asia, vol. 6, p. 269-271, pl. 28, figs. 1-7
 Holotype: KTR-26b (no information on the registered place; see

remarks)

Khao Ta Mong Rai, Prachuap Khiri Khan, Peninsular Thailand
 Ratburi Limestone
 Middle Permian

The type specimens of this species have been stored and will be
 registered in the collections of National Science Museum
 (NSM)

***Schwagerina motohashii* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 101-103, pl.
 12, figs. 1-9
 Holotype: Reg. no. 10928 (Department of Earth Sciences,
 Saitama University)
 Shomaru Pass, Agano-machi, Saitama Prefecture, Japan
 Late Early Permian

***Schwagerina muraii* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 104-105, pl.
 14, figs. 1-4
 Holotype: Reg. no. 10938 (Department of Earth Sciences,
 Saitama University)
 Kamikagemori, Chichibu City, Saitama Prefecture, Japan
 Late Early Permian

***Schwagerina nakazawae* Nogami, 1963**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 30, no. 2, p. 63-64, pl.
 3, figs. 13-17
 Holotype: JPF10517 (Institute of Geology and Mineralogy,
 Kyoto University)
 Southeastern foot of Fatu Auveon, about 2 km NW of Pualaca,
 East Timor
 Late Middle Permian

***Schwagerina odakai* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 100-101, pl.
 12, figs. 10-15
 Holotype: Reg. no. 10970 (Department of Earth Sciences,
 Saitama University)
 Kamikagemori, Chichibu City, Saitama Prefecture, Japan
 Late Early Permian

***Schwagerina okafujii* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 126-129, pl. 14,
 figs. 1-16
 Holotype: GK.D875 (Department of Geology, Kyushu
 University)
 Loc. 613 of Toriyama (1958); southeastern part of the
 Ubekosan's quarry, Omine, Akiyoshi-dai, Mine City,
 Yamaguchi Prefecture, Japan
 Akiyoshi Limestone
 Early Permian

***Schwagerina oshioensis* Sakaguchi, 1963**

Mem. Osaka Univ. Liberal Arts and Sci., B, no. 12, p. 101-102,

pl. 4, figs. 7-10, pl. 5, fig. 11, pl. 6, fig. 9

Holotype: specimen illustrated on pl. 4, fig. 7 (no register number)

Mt. Oshio, Kyoto City, Kyoto Prefecture, Japan

Early Permian?

***Schwagerina otai* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 194-195, pl. 6, figs. 1-5

Holotype: JPF10212 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Midian, Middle Permian

***Schwagerina otakiensis* Ishii and Takahashi, 1960**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 7, p. 213-215, pl. 5, figs. 7-21

Holotype: specimen illustrated on pl. 5, fig. 7 (no register number) (Institute of Geology and Mineralogy, Tokyo University of Education)

Ogamata-zawa, Otaki-mura, Saitama Prefecture, Japan

Ogamata Formation

Late Middle Permian

***Schwagerina paraguembeli* Morikawa, 1955**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 1, p. 103-104, pl. 15, figs. 1-10

Holotype: Reg. no. 11023 (Department of Earth Sciences, Saitama University)

Terazawa, Arakawa-mura, Saitama Prefecture, Japan

Late Early Permian

***Schwagerina primigena* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 187-189, pl. 2, figs. 16-22

Holotype: JPF10188 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Early Permian

***Schwagerina pseudocrassa* Kanmera, 1954**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 9-11, pl. 1, figs. 6-7

Holotype: specimen illustrated on pl. 1, fig. 6 (no registration number)

N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan

Kuma Formation

Midian, Middle Permian

***Schwagerina santyuensis globosa* Sakagami, 1958**

Jour. Hokkaido Gakugei Univ., vol. 9, no. 2, p. 85-86, pl. 2, figs. 13-14

Holotype: Reg. no. 1262-A (Department of Geology, Hokkaido Gakugei University; see remarks)

Nishinoori-dani, Hinode-machi, Tokyo, Japan

Pebble in the Nishinoori Conglomerate

Late Early Permian

The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Schwagerina semilucera* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 189-191, pl. 5, figs. 1-5

Holotype: JPF10196 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Late Early Permian

***Schwagerina semilucera granda* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 191-192, pl. 5, figs. 6-8

Holotype: JPF10203 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Late Early Permian

***Schwagerina shiromensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 23-24, pl. 8, figs. 11-13

Holotype: 252 (no information on the registered place)

Limestone quarry at Toyama-shirome, 1.5 km N of Ryoseki, Nangoku City, Kochi Prefecture, Japan

Kameiwa Formation

Early Permian

***Schwagerina shukoa* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 630, figs. 9-5--7

Holotype: TGUFU1099 (Department of Astronomy and Earth Sciences, Tokyo Gakugei University)

Nishi-Akuda, Hachiman-cho, Gifu Prefecture, Japan

Late Early Permian?

***Schwagerina toyamaensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 24, pl. 8, figs. 4-6

Holotype: 243a (no information on the registered place)

Limestone quarry at Toyama-shirome, 1.5 km N of Ryoseki, Nangoku City, Kochi Prefecture, Japan

Kameiwa Formation

Early Permian

***Schwagerina uritensis* Igo, 1964**

Jour. Paleont., vol. 38, no. 4, p. 643-644, pl. 103, figs. 1-5

Holotype: Reg. no. 20519 (Institute of Geology and Mineralogy, Tokyo University of Education)
Nyukawa-mura, Gifu Prefecture, Japan
Shiroi Formation
Late Early Permian

***Seminovella sadai* Niko, 1989**

Sci. Repts., Coll. Arts and Sci., Univ. Tokyo, vol. 39, no. 2, p. 129-131, figs. 2-D, E, G--L, N--P
Holotype: UMUT PF18768 (University Museum, University of Tokyo)
Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan
Ichinotani Formation
Bashkirian, Late Carboniferous

***Sphaerulina akudensis* Igo, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 184, p. 627-628, figs. 11-9--14
Holotype: TGUFU1099 (Department of Astronomy and Earth Sciences, Tokyo Gakugei University)
Nishi-Akuda, Hachiman-cho, Gifu Prefecture, Japan
Late Early Permian?

***Sphaerulina crassispira japonica* Kanmera, 1963**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 14, no. 2, p. 83-85, pl. 12, figs. 13-29, pl. 19, figs. 10-12
Holotype: GK.D12206 (Department of Geology, Kyushu University)
Eridani, Sakamoto-mura, Kumamoto Prefecture, Japan
Kozaki Formation
Early Middle Permian

***Staffella akagoensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 22-24, pl. 1, figs. 6-8
Holotype: GK.D171 (Department of Geology, Kyushu University)
Loc. 351 of Toriyama (1958); southwest-western slope of Shishide-dai, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Staffella moelleri* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 19-20, pl. 2, fig. 9
No type designation
Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Moscovian, Late Carboniferous

***Staffella? ovalis* Igo, Ueno and Sashida, 1993**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 169, p. 35-37, figs. 9-9--15

Holotype: IGUT-KU0379* (Institute of Geoscience, University of Tsukuba)
E of Ban Phia, Loei, Northeast Thailand
Wang Saphung Formation
Yakhtashian, Early Permian

***Staffella? tamanouchiensis* Sakagami, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 24, p. 262, pl. 37, figs. 1-3
Holotype: Reg. no. 2526-E (Department of Geology, Hakodate Branch, Hokkaido Gakugei University; see remarks)
Yagooki-dani, Tamanouchi, Hinode-machi, Tokyo, Japan
Limestone pebble in the Tamanouchi Conglomerate
Bolorian, Early Permian
The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Staffella yobarensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 20, pl. 3, figs. 1b, 5
No type designation
Yowara, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Early Permian?

***Sumatrana japonica* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 123-124, pl. 26, figs. 8-12
No type designation
Shomaru Pass, Saitama Prefecture, Japan
Late Middle Permian

***Sumatrana pesuliensis* Ozawa and Tobler, 1929**

Ecol. Geol. Helv., vol. 22, no. 1, p. 48-49, pl. 5, figs. 8a-8d, 9b
No type designation
Pesula, Island of Katakupho, Greece
Murgabian, Middle Permian

***Thailandina buravasi* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 4, p. 32-33, pl. 6, figs. 1-15
Holotype: GK.D14009* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone
Bolorian, Early Permian and Kubergandian, Middle Permian

***Thailandina hongnusunthiae* Toriyama and Kanmera, 1968**

Geol. Palaeont. SE Asia, vol. 4, p. 35-36, pl. 7, figs. 1-8
Holotype: GK.D13712a* (Department of Geology, Kyushu University)
Khao Phlong Phrab, Saraburi, Central Thailand
Saraburi Limestone

Kubergandian, Middle Permian

***Toriyamaia laxiseptata* Kanmera, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 24, p. 252-255, pl. 36, figs. 1-14

Holotype: GK.D10201 (Department of Geology, Kyushu University)

Uminoura, Tanoura-mura, Kumamoto Prefecture, Japan

Kozaki Formation

Early Middle Permian

***Triticites biconica* Toriyama, 1958** (see remarks)

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 102-104, pl. 10, figs. 10-25

Holotype: GK.D777 (Department of Geology, Kyushu University)

Loc. 540 of Toriyama, 1958; along the uphill path from Sayama to the top of Managatake, Akago, Akiyoshi-dai, Mito-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous and Early Permian

The specific name may be *biconicus* following the gender of the genus

***Triticites debilis* Kawano, 1961**

Bull. Fac. Educ., Yamaguchi Univ., vol. 11, spec. no., p. 77-78, pl. 4, figs. 3-13

Holotype: 14b-2 (no information on the registered place)

Handa-dai, Fukuei-son, Yamaguchi Prefecture, Japan

Handa Limestone

Late Late Carboniferous?

***Triticites douglassi* Igo and Adachi, 1998**

Bull. Natl. Sci. Mus., Ser. C, vol. 24, nos. 1/2, p. 9-15, figs. 2-5

Holotype: IGUT5845 (Institute of Geoscience, University of Tsukuba)

FSJ-12, the second edge of limestone on the trail to Mt. Pope from Fort St. James, British Columbia, Canada

Large exotic limestone block in the Cache Creek Terrane

Early Permian

***Triticites ellipsoidalis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 115-118, pl. 12, figs. 13-34

Holotype: GK.D910 (Department of Geology, Kyushu University)

Loc. 613 of Toriyama (1958); southeastern part of the Ubekosan's quarry, Omine, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Early Permian

***Triticites elongatus* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 567, pl. 14, figs. 3-4

Holotype: UHR.30360 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Late Carboniferous

***Triticites exsculptus* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 225-228, pl. 12, figs. 1-17

Holotype: Reg. no. 20160 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Kasimovian, Late Carboniferous

***Triticites exsculptus* var. *naviforme* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 228-230, pl. 12, figs. 18-24

Holotype: Reg. no. 20173 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Kasimovian, Late Carboniferous

***Triticites fornicatus* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 3, p. 171-173, pl. 24, figs. 9-17

Holotype: specimen illustrated on pl. 24, fig. 9 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Gzhelian, Late Carboniferous

***Triticites fujinoi* Sakagami and Omata, 1957**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 254, pl. 20, figs. 1-4

Holotype: Reg. no. 2041-A (Department of Geology, Hokkaido Gakugei University; see remarks)

Shiraiwa, Ome City, Tokyo, Japan

Shiraiwa Limestone

Late Late Carboniferous

The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Triticites hanzawae* Kawano, 1961**

Bull. Fac. Educ., Yamaguchi Univ., vol. 11, spec. no., p. 72-74, pl. 3, figs. 16-26

Holotype: 5809-7 (no information on the registered place)

Handa-dai, Fukuei-son, Yamaguchi Prefecture, Japan

Handa Limestone

Late Late Carboniferous?

***Triticites hanzawae gigantea* Kawano, 1961**

Bull. Fac. Educ., Yamaguchi Univ., vol. 11, spec. no., p. 74-75, pl. 3, figs. 27-33

Holotype: 5809-9 (no information on the registered place)

Handa-dai, Fukuei-son, Yamaguchi Prefecture, Japan

Handa Limestone

Late Late Carboniferous?

***Triticites hataii* Igo, 1957**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 241-243, pl. 18, figs. 1-5, 15

Holotype: Reg. no. 20196 (Institute of Geology and Mineralogy, Tokyo University of Education)

Upper part of the Ichinotani Valley, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Pebble in a conglomerate bed of the Sorayama Formation

Kasimovian or Gzhelian, Late Carboniferous

***Triticites henbesti* Igo, 1957**

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 243-245, pl. 18, figs. 6-14

Holotype: Reg. no. 20430 (Institute of Geology and Mineralogy, Tokyo University of Education)

Upper part of the Ichinotani Valley, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Pebble in a conglomerate bed of the Sorayama Formation

Kasimovian or Gzhelian, Late Carboniferous

***Triticites hidensis* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 232-234, pl. 13, figs. 1-21

Holotype: Reg. no. 20521 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Kasimovian, Late Carboniferous

***Triticites ichinotaniensis* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 566-567, pl. 13, figs. 8-9

Holotype: UHR.30356 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Late Carboniferous

***Triticites intermedia* Sakagami and Omata, 1957** (see remarks)

Japan. Jour. Geol. Geogr., vol. 28, no. 4, p. 253-254, pl. 19, figs. 8-13

Holotype: Reg. no. 2038-A (Department of Geology, Hokkaido Gakugei University; see remarks)

Shiraiwa, Ome City, Tokyo, Japan

Shiraiwa Limestone

Late Late Carboniferous

The specific name is preoccupied by *T. jigulensis* var. *intermedia* Shlykova, 1938 (Trudy VNIGRI, nov. ser., vyp. 31, p. 109-136, pls. 1-7), and again by *T. (Jigulites) intermedius* Rozovskaya, 1950 (Trudy Paleont. Inst., tom. 26, p. 1-80, pls. 1-10). See *T. thalmani* Sakagami and Omata, 1959 as a replaced name; The type specimens of this species have been stored and will be registered in the collections of National Science Museum (NSM)

***Triticites irasensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 119-120, pl. 2, figs. 16-18

Syntypes: IES32521-15, 2920 (Tokyo Gakugei University)

Irasu, Oppara, Gifu Prefecture, Japan

Oppara Formation

Late Late Carboniferous

***Triticites isaensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 83-85, pl. 7, figs. 35-50

Holotype: GK.D828 (Department of Geology, Kyushu University)

Loc. 607 of Toriyama (1958); along the steep uphill path running along the ridge between No. 3 quarry and Ubekosan's huge quarry, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous

***Triticites kagaharensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 52-54, pl. 3, figs. 8-19

No type designation

Kagahara, Nakazato-mura, Gunma Prefecture, Japan

Late Late Carboniferous?

***Triticites katoi* Niikawa, 1978**

Jour. Fac. Sci., Hokkaido Univ., Ser. IV, vol. 18, no. 4, p. 565-566, pl. 14, figs. 1-2

Holotype: UHR.30358 (Department of Geology and Mineralogy, Hokkaido University)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Ichinotani Formation

Late Late Carboniferous

***Triticites kawanoboriensis* Huzimoto, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3/4, p. 118-119, pl. 7, figs. 1-7

No type designation

Huren Limestone Cave, Notsu-machi, Oita Prefecture, Japan

Tsukumi Limestone

Late Late Carboniferous

***Triticites kawanoboriensis kaishodaniensis* Igo, 1959**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 6, p. 236-238, pl. 1, figs. 1-2

Holotype: Reg. no. 20522 (Institute of Geology and Mineralogy, Tokyo University of Education)

Kaishodani Valley, Hirayu, Kamitakara-mura, Gifu Prefecture, Japan

Early Permian

***Triticites kawanoboriensis* var. *masekawensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 125-127, pl. 2, figs. 28, 31, 33-35

Syntypes: IES3264-5, 3264-34 (Tokyo Gakugei University)

Irasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Okumyoga Formation

Late Late Carboniferous

***Triticites kiyomiensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 120-122, pl. 2, figs. 9, 21-24, 25?

Syntypes: IES32521-13, 32521-17, KIR-8 (Tokyo Gakugei University)

Koirasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Oppara Formation

Late Late Carboniferous

***Triticites kuroiwaensis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 113-115, pl. 12, figs. 1-12

Holotype: GK.D624 (Department of Geology, Kyushu University)

Loc. 262 of Toriyama (1958); along the uphill road from Kuroiwa southeastward to Chojagamori, Kuroiwa, Kyowa, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous and Early Permian

***Triticites matsumotoi* Kanmera, 1955**

Japan. Jour. Geol. Geogr., vol. 27, nos. 3/4, p. 184-186, pl. 11, figs. 6-25

Holotype: specimen illustrated on pl. 11, fig. 8 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Kasimovian, Late Carboniferous

***Triticites matsumotoi kattoi* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 15-16, pl. 5, figs. 1-3

Holotype: 149a (no information on the registered place)

200 m SW of Miyanokuchi, Tosayamada-cho, Kochi Prefecture, Japan

Miyanokuchi Formation

Kasimovian, Late Carboniferous

***Triticites matsumotoi sutaensis* Suyari, 1962**

Jour. Gakugei, Tokushima Univ., vol. 12, p. 16-17, pl. 5, figs. 4-6

Holotype: 158 (no information on the registered place)

200 m SW of Miyanokuchi, Tosayamada-cho, Kochi Prefecture, Japan

Miyanokuchi Formation

Kasimovian, Late Carboniferous

***Triticites michiae* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 89-92, pl. 8, figs. 17-23

Holotype: GK.D658 (Department of Geology, Kyushu University)

Loc. 330 of Toriyama (1958); along the northwest-western slope of Kirigadai, Kyowa, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous

***Triticites montiparus gravitustus* Nogami, 1961**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 27, no. 3, p. 166-168, pl. 1, figs. 13-17

Holotype: JPF10115 (Institute of Geology and Mineralogy, Kyoto University)

Atetsu-dai, Okayama Prefecture, Japan

Atetsu Limestone

Late Late Carboniferous

***Triticites nakatsugawensis* Morikawa, 1953**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 2, p. 117, pl. 10, figs. 1-4, 8, 10-16, 18-19

Syntypes: Reg. no. 10865 (Department of Earth Sciences, Saitama University)

Mujinazawa-dani, Nakatsugawa, Otaki-mura, Saitama Prefecture, Japan

Late Late Carboniferous?, Early Permian?

***Triticites nakatsugawensis* var. *hemmi* Morikawa, 1953**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 2, p. 117-118, pl. 10, figs. 6-7, 9

Syntypes: Reg. no. 10866 (Department of Earth Sciences, Saitama University)

Mujinazawa-dani, Nakatsugawa, Otaki-mura, Saitama Prefecture, Japan

Late Late Carboniferous?, Early Permian?

***Triticites noynskyi* var. *paula* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 87-89, pl. 8, figs. 3-16

Syntypes: GK.D612, 739, 103, 814, 101, 105, 1197, 822, 791, 1198, 740, 738, 109 (Department of Geology, Kyushu

University)

No designation of type locality

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous and Early Permian

The subspecific name may be *paulus* following the gender of the genus

***Triticites obai* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 105-107, pl. 11, figs 1-7

Holotype: GK.D690 (Department of Geology, Kyushu University)

Loc. 343 of Toriyama (1958); along the road between Minamikochi and Shibao, Kyowa, Akiyoshi-dai, Shuho-cho, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous and Early Permian

***Triticites onoensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 127-128, pl. 3, figs. 1-6, 8

Syntypes: IES32641, 326438 (Tokyo Gakugei University)

Irasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Okumyoga Formation

Late Late Carboniferous

***Triticites opparensis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 116-118, pl. 2, figs. 6-8, 10-12

Syntypes: IES2920-12, 2920-1 (Tokyo Gakugei University)

Hasado-dani, Irasubora and Koirasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Oppara Formation

Late Late Carboniferous

***Triticites opparensis* var. *longiformis* Kanuma, 1958**

Bull. Tokyo Gakugei Univ., vol. 9, p. 118, pl. 2, figs. 13-15

Syntypes: IES32522-3, 2920-12 (Tokyo Gakugei University)

Hasado-dani, Irasubora and Koirasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Oppara Formation

Late Late Carboniferous

***Triticites ozawai* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 92-95, pl. 8, fig. 24, pl. 9, figs. 1-7

Holotype: specimen described as *Schellwienia montipara* (pl. 9, fig. 1) in Ozawa (1925), no register number

Akiyoshi-dai, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous

Ozawa, Y (1925): Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, p. 1-90, pls. 1-14

***Triticites pseudolaxus* Igo, 1972**

Geol. Palaeont. SE Asia, vol. 10, p. 98-100, pl. 15, figs. 1-10

Holotype: Reg. no. 22087* (Institute of Geology and Mineralogy, Tokyo University of Education)

Tham Nam Maholan, SE of Wang Saphung, Loei, Northeast Thailand

Nam Maholan Formation

Late Late Carboniferous?

***Triticites sakagamii* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 234-235, pl. 13, figs. 22-23

Holotype: Reg. no. 20333 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Kasimovian, Late Carboniferous

***Triticites satoi* Huzimoto, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3/4, p. 120-121, pl. 8, figs. 1-8

No type designation

Huren Limestone Cave, Notsu-machi, Oita Prefecture, Japan

Tsukumi Limestone

Late Late Carboniferous

***Triticites saurini* Igo, 1957**

Sci. Repts., Tokyo Kyoiku Daigaku, Sect. C, vol. 5, p. 230-232, pl. 14, figs. 1-9

Holotype: Reg. no. 20149 (Institute of Geology and Mineralogy, Tokyo University of Education)

Ichinotani, Fukuji, Kamitakara-mura, Gifu Prefecture, Japan

Upper Member, Ichinotani Formation

Kasimovian, Late Carboniferous

***Triticites shimurai* Chisaka and Corvalan, 1979**

Bull. Fac. Educ., Chiba Univ., vol. 28, pt. 2, p. 42, pl. 2, figs. 1-3, 7

Holotype: specimen illustrated on pl. 2, fig. 1 (no register number)

Isla Guarello, Isla Madre de Dios, Southern Chile

Early Permian

***Triticites sonobensis* Sakaguchi, 1963**

Mem. Osaka Univ. Liberal Arts and Sci., B, no. 12, p. 95-96, pl. 3, figs. 1-14

Holotype: specimen illustrated in pl. 3, fig. 2 (no register number)

Kannontoge Limestone, 1.5 km NW of Sonobe, Kyoto Prefecture, Japan

Kannontoge Limestone

Late Late Carboniferous

***Triticites tantula* Toriyama, 1958** (see remarks)

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 81-83, pl. 7, fig. 24-36

Holotype: GK.D826 (Department of Geology, Kyushu University)

Loc. 607 of Toriyama (1958); along the steep uphill path running along the ridge between No. 3 quarry and Ubekosan's huge quarry, Isa, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Kasimovian and Gzhelian, Late Carboniferous and Early Permian

The specific name may *be tantulus* following the gender of the genus

***Triticites thalmani* Sakagami and Omata, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 34, p. 111

Replaced name of *T. intermedia* Sakagami and Omata, 1957

***Triticites uemurai* Morikawa, 1953**

Sci. Repts., Saitama Univ., Ser. B, vol. 1, no. 2, p. 120-121, pl. 10, figs. 22-29

Syntypes: Reg. no. 10867 (Department of Earth Sciences, Saitama University)

Mujinazawa-dani, Nakatsugawa, Otaki-mura, Saitama Prefecture, Japan

Late Late Carboniferous?, Early Permian?

***Triticites yayamadakensis* Kanmera, 1954**

Japan. Jour. Geol. Geogr., vol. 27, nos. 3/4, p. 185-188, pl. 12, figs. 1-20

Holotype: specimen illustrated on pl. 12, fig. 1 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Kasimovian, Late Carboniferous

***Triticites yayamadakensis evectus* Kanmera, 1958**

Mem. Fac. Sci., Kyushu Univ, Ser. D, vol. 6, no. 3, p. 163-165, pl. 25, figs. 1-10

Holotype: specimen illustrated on pl. 25, fig. 1 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Gzhelian, Late Carboniferous

***Verbeekina akasakensis* Thompson, 1936**

Jour. Paleont., vol. 10, no. 3, p. 195

Based on specimens of Deprat (1914), pl. 4, figs. 5-7; no type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan

Akasaka Limestone

Late Middle Permian

Deprat, J. (1914): Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1,

p. 1-45, pls. 1-8

***Verbeekina katoi* Toriyama, 1947**

Japan. Jour. Geol. Geogr., vol. 20, nos. 2-4, p. 69-70, pl. 16, figs. 5-7

No type designation

Eastern roadside just between Hiraiso and Hinoura (about 800 m SE of Hiraiso or 800 m NW of Hinoura), Tosayama-mura, Kochi Prefecture, Japan

Kubergandian?, Middle Permian

***Verbeekina verbeeki* var. *sphaera* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 51-52, pl. 10, fig. 3b

No type designation

Kaerimizu, Akiyoshi-dai, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Late Middle Permian

***Verbeekina (Armenina) prisca* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 62-64, pl. 13, figs. 28-39

Holotype: GK.D13929* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Kubergandian, Middle Permian

***Verbeekina (Armenina) saraburiensis* Toriyama and Kanmera, 1975**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 23, no. 1, p. 59-61, pl. 13, figs. 16-23

Holotype: GK.D13175* (Department of Geology, Kyushu University)

Khao Phlong Phrab, Saraburi, Central Thailand

Saraburi Limestone

Bolorian, Early Permian

***Wedekindellina? hidaensis* Kanuma, 1953**

Bull. Tokyo Gakugei Univ., vol. 4, p. 31-33, pl. 3, figs. 21-23

No type designation

Irasubora, Oppara, Kiyomi-mura, Gifu Prefecture, Japan

Akiyama Formation

Late Moscovian, Late Carboniferous

***Wedekindellina prolifica* Kanmera, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1/2, p. 130-133, pl. 12, figs. 29-36, pl. 13, figs. 1-8

Holotype: specimen illustrated on pl. 12, fig. 30 (no register number)

Yayamadake, Izumi-mura, Kumamoto Prefecture, Japan

Yayamadake Limestone

Moscovian, Late Carboniferous

***Yabeina akiyamai* Morikawa, 1956**

Sci. Repts., Saitama Univ., Ser. B, vol. 2, no. 2, p. 256-258, pl. 34, figs. 1-7

Syntypes: Reg. nos. 11038, 11039, 1041 (Department of Earth Sciences, Saitama University)

Onagata, Kamiyoshida-machi, Saitama Prefecture, Japan
Midian, Middle Permian

***Yabeina asiatica* Ishii, 1966**

Jour. Geosci., Osaka City Univ., vol. 9, art. 4, p. 133-134, pl. 5, figs. 1-2, 5-6

Holotype: PF1446 (Division of Geoscience, Osaka City University)

Kampung Awah Quarry, Pahang, Peninsular Malaysia
Midian, Middle Permian

***Yabeina gubleri* Kanmera, 1954**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 4, no. 1, p. 19-21, pl. 4, figs. 1-10, 11?, 12-13

Holotype: specimen illustrated on pl. 4, fig. 1 (no register number)

N of Kawamata, Toyo-mura, Kumamoto Prefecture, Japan
Kuma Formation
Midian, Middle Permian

***Yabeina hayasakai* Ozawai, 1922**

Jour. Geol. Soc. Japan, vol. 29, no. 348, p. 373, fig. 2

No type designation, but specimen illustrated on fig. 2 should automatically be designated as a lectotype because of only one figured specimen; no register number

Omi-machi, Niigata Prefecture, Japan
Omi Limestone
Midian, Middle Permian

***Yabeina igoi* Morikawa and Suzuki, 1961**

Sci. Repts., Saitama Univ., Ser. B, vol. B, no. 1, p. 64-65, pl. 9, fig. 3, pl. 20, figs. 1-9

Holotype: Ak10-20 (Department of Earth Sciences, Saitama University)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Middle Permian

***Yabeina inouyei* Deprat, 1914**

Mem. Serv. Geol. l'Indochine, vol. 3, fasc. 1, p. 30-34, pl. 6, figs. 4-10, pl. 7, figs. 1-2

No type designation

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Akasaka Limestone
Midian, Middle Permian

***Yabeina kaizensis* Huzimoto, 1936**

Sci. Repts., Tokyo Bunrika Daigaku, Sect. C, vol. 1, no. 2, p. 121-122, pl. 25, figs. 5-10

No type designation

Kaise, Minamisaku-machi, Nagano Prefecture, Japan
Late Middle Permian

***Yabeina kanmerae* Igo, 1965**

Jour. Paleont., vol. 38, no. 4, p. 647-648, pl. 106, figs. 1-4

Holotype: Reg. no. 21101a (Institute of Geology and Mineralogy, Tokyo University of Education)

Tochiyamadani, Gonbo, Nyukawa-mura, Gifu Prefecture, Japan
Kono Formation
Midian, Middle Permian

***Yabeina minima* Ozawa, 1922**

Jour. Geol. Soc. Japan, vol. 29, no. 348, p. 373, fig. 3

No type designation, but specimen illustrated on fig. 3 should automatically be designated as a lectotype because of only one figured specimen; no register number

Akiyoshi-dai, Yamaguchi Prefecture, Japan
Akiyoshi Limestone
Murgabian, Middle Permian

***Yabeina omurensis* Yamagiwa and Ishii, 1958**

Jubilee Publ. Commem. Prof. H. Fujimoto 60th Birthday, p. 62-64, pl. 4, figs. 1-8

Holotype: OMN F1011F (Osaka Municipal Museum of Natural History)

Northwestern part of Omura-jima, Imaura, Toba City, Mie Prefecture, Japan
Koshiboso Limestone
Midian, Middle Permian

***Yabeina ozawai* Honjo, 1959**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 10, p. 155-158, pl. 11, figs. 1-4, pl. 12

Holotype: specimen illustrated on pl. 42, fig. 7 of Ozawa (1927) (no register number)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture, Japan
Nm zone, Akasaka Limestone
Late Middle Permian

Ozawa, Y. (1927): Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 2, pt. 3, p. 121-164, pls. 34-45

***Yabeina packardi shimensis* Yamagiwa and Ishii, 1958**

Jubilee Publ. Commem. Prof. H. Fujimoto 60th Birthday, p. 58-62, pl. 3, figs. 1-7, pl. 4, fig. 9

Holotype: OMN F1001F (Osaka Municipal Museum of Natural History)

Northwestern part of Omura-jima, Imaura, Toba City, Mie Prefecture, Japan
Koshiboso Limestone
Midian, Middle Permian

***Yabeina pinguis* Toriyama, 1958**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 7, p. 244-247, pl. 47,

figs. 1-9

Holotype: GK.D2279 (Department of Geology, Kyushu University)

Loc. 765C of Toriyama (1958); Hinode quarry, about 900 m S of Hagiwara, Ofuku, Akiyoshi-dai, Mine City, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Midian, Middle Permian

***Yabeina shiraiwensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 63-64, pl. 10, figs. 1-2, pl. 2, figs. 2b, 5c, 7b

No type designation

Serita, Shiraiwa, Hinaga, Yowara, Okugawara, and Ojigase, Akiyoshi-dai, Yamaguchi Prefecture, Japan

Akiyoshi Limestone

Midian, Middle Permian

***Yabeina yasubaensis* Toriyama, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 246-247, pl. 25, figs. 8-13

No type designation

Yasuba, Tosayamada-cho, Kochi Prefecture, Japan

Midian, Middle Permian

Pteropoda and Heteropoda

Atsushi Ujihara

School of Informatics and Sciences, Nagoya University,
Nagoya 464-8602, Japan

Heteropoda

Atlanta okinawana Noda, 1972

Trans. Proc. Palaeontol. Soc. Japan, N. S., no. 88, p. 481, pl. 57, fig. 21

Holotype: IGPS no. 92594

Sea side cliff, west of Tobaru, Miyagusuku-shima, Yonagusuku-son, Okinawa Prefecture (26 °21.5' N, 127 °58.4' E)
Shinzato Formation of the Shimajiri Group

Late Pliocene

Protatlanta kakegawaensis Shibata, 1984

Bull. Mizunami Fossil Mus., no. 11, p. 75, pl. 23, figs. 1-3

Holotype: KC no. 10019, Paratype: KC no. 10020, KC no. 10021

Tonbe, Kakegawa City, Shizuoka Prefecture (34 °46.7' N, 137 °58.3' E)

Nango sand and mud alternation Member of the Kakegawa Group

Early Pleistocene

Pteropoda

Cavolina raritatis Nomura and Zinbo, 1935

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 169, pl. 15 (1), figs. 25, 26

Holotype: Reg. no. 6204

Southern end of the park of Yanagawa-mati in the Hukushima Basin, Hukushima Prefecture (Yanagawa-machi, Date-gun, Fukushima Prefecture) (37 °51.0' N, 140 °36.9' E)

Yanagawa Formation

Miocene

(*Cavolina bisulcata* (Kittl))

Cavolinia floridana japonica Ujihara, 1996

Jour. Paleontol., vol. 70, no. 5, p. 782, figs. 6. 9-6.16

Holotype: KC no. 20089

Cutting of the road leading from Yurino to Imabyu 500 m northwest of Yurino, Kijo-cho, Miyazaki Prefecture (32 °9.3' N, 131 °26.0' E)

Tsuma Member of the Miyazaki Group

Early Pliocene

Cavolinia inflexa forma *kakegawaensis* Shibata, 1984

Bull. Mizunami Fossil Mus., no. 11, p. 88, pl. 26, figs. 5, 6

Holotype: KC no. 10024, Paratype: KC no. 10025

Tonbe, Kakegawa City, Shizuoka Prefecture (34 °46.7' N, 137 °58.3' E)

Nango sand and mud alternation Member of the Kakegawa Group

Early Pleistocene

(*Cavolinia inflexa kakegawaensis*)

Cavolinia itoigawai Ujihara, 1996

Jour. Paleontol., vol. 70, no. 5, p. 782, figs. 6. 26-6. 35

Holotype: KC no. 20095, Paratype: KC no. 20096, KC no. 20098

Road-cut 350 m northwest of the Yamaji Tunnel, Kamiyamaji, Saito City, Miyazaki Prefecture (32 °7.5' N, 131 °22.6' E)

Kawabaru Member of the Miyazaki Group

Early Pliocene

Cavolinia okinawana Noda, 1972

Trans. Proc. Palaeontol. Soc. Japan, N. S., no. 88, p. 480, pl. 57, figs. 27, 28

Holotype: IGPS, no. 92591

Sea side cliff, west of Tobaru, Miyagusuku-shima, Yonagusuku-son, Okinawa Prefecture (26 °21.5' N, 127 °58.4' E)
Shinzato Formation of the Shimajiri Group

Late Pliocene

Cavolinia vendryesiana hyugaensis Ujihara, 1996

Jour. Paleontol., vol. 70, no. 5, p. 785, figs. 7. 18-7. 30

Holotype: KC no. 20113

Stream bed of the Miyata River 600 m north of Konami, Takanabe-cho, Koyu-gun, Miyazaki Prefecture (32 °7.8' N, 131 °27.9' E)

Tsuma Member of the Miyazaki Group

Early Pliocene

Cavolinia yamabensis Shibata, 1983

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 82, pl. 2, figs. 14-16

Holotype: KC no. 10016, Paratype: KC no. 10017, KC no. 10018.

Cliff 350 m south of Hayama, Tsuge-mura, Nara Prefecture (34 °34.1' N, 135 °58.0' E)

Sotonohashi mudstone of the Yamabe Group

Late Early Miocene

Cleodora hataii Noda, 1972

Trans. Proc. Palaeontol. Soc. Japan, N. S., no. 88, p. 475, pl. 57, figs. 9-11

Holotype: IGPS no. 92579

Road side cliff, east of the tunnel northeast of Yamaji, Saito City, Miyazaki Prefecture (32 °7.4' N, 131 °22.6' E)

Kawabaru Member of the Miyazaki Group

Early Pliocene

(*Clio*)

***Cleodora okinawana* Noda, 1972**

Trans. Proc. Palaeontol. Soc. Japan, N. S., no. 88, p. 477, pl. 57, figs. 6, 12, 13

Holotype: IGPS no. 92581

Near the type locality of the Shinzato Formation, south cliff of Shinzato, Sashiki-son, Okinawa Prefecture (26 °9.7' N, 127 °46.7' E)

Shinzato Formation of the Shimajiri Group

Late Pliocene

(*Clio*)

***Clio balantium forma kakegawaensis* Shibata, 1984**

Bull. Mizunami Fossil Mus., no. 11, p. 82, pl. 24, figs. 6, 7

Holotype: KC no. 10022, Paratype: KC no. 10023

Tonbe, Kakegawa City, Shizuoka Prefecture (34 °46.7' N, 137 °58.3' E)

Nango sand and mud alternation Member of the Kakegawa Group

Early Pleistocene

(*Clio kakegawaensis*)

***Clio shibatai* Ujihara, 1996**

Jour. Paleontol., vol. 70, no. 5, p. 777, figs. 3. 26-3. 37

Holotype: KC no. 20037, Paratype: KC no. 20038

Road-cut 250 m southwest of the Yamaji Tunnel, Kamiyamaji, Saito City, Miyazaki Prefecture (32 °7.3' N, 131 °22.5' E)

Kawabaru Member of the Miyazaki Group

Early Pliocene

***Cuvierina miyazakiensis* Ujihara, 1996**

Jour. Paleontol., vol. 70, no. 5, p. 778, figs. 5.29-5.42

Holotype: KC no. 20055, Paratype: KC no. 20056, KC no. 20057

Road-cut 350 m northwest of the Yamaji Tunnel, Kamiyamaji, Saito City, Miyazaki Prefecture (32 °7.5' N, 131 °22.6' E)

Kawabaru Member of the Miyazaki Group

Early Pliocene

***Euclio ichishiensis* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 71, pl. 1, figs. 8, 9

Holotype: KC no. 10008, Paratype: KC no. 10009

Floor of the Nakamura (Nagano) River, Ashisaka, Misato-mura, Mie Prefecture (34 °42.8' N, 136 °23.8' E)

Mitsugano tuffaceous shale and sandstone of the Ichishi Group

Late Early Miocene

(*Clio*)

***Euclio itoigawai* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 73, pl. 2, figs. 1-3

Holotype: KC no. 10012, Paratype: KC no. 10013

Floor of the Nakamura (Nagano) River, Ashisaka, Misato-mura, Mie Prefecture (34 °42.8' N, 136 °23.8' E)

Mitsugano tuffaceous shale and sandstone of the Ichishi Group

Late Early Miocene

(*Clio*)

***Euclio yatsuoensis* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 72, pl. 2, fig. 5

Holotype: KC no. 10010, Paratype: KC no. 10011

Floor of the Kubusu River, Kamishinmachi, Yatsuo-cho, Toyama Prefecture (36 °34.2' N, 137 °9.4' E)

Joyama mudstone of the Yatsuo Formation

Late Early Miocene (zone N.8 of Blow)

(*Clio*)

***Limacina minoensis* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 68, pl. 1, figs. 6, 7

Holotype: KC no. 10005, Paratype: KC no. 10006, KC no. 10007

Bank of the Hiyoshi River, 1000 m southwest of Hongo, Hiyoshi-cho, Mizunami City, Gifu Prefecture (35 °24.5' N, 137 °16.1' E)

Shukunohora sandstone of the Mizunami Group

Late Early Miocene (zone N.8 of Blow)

***Limacina ujiharai* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 67, pl. 1, figs. 1-3

Holotype: KC no. 10001, Paratype: KC nos. 10002, 10003, 10004

Floor of the Kubusu River, Kamishinmachi, Yatsuo-cho, Toyama Prefecture (36 °34.2' N, 137 °9.4' E)

Joyama mudstone of the Yatsuo Formation

Late Early Miocene (zone N.8 of Blow)

***Vaginella katoi* Shibata, 1983**

Coll. Gen. Educ., Nagoya Univ., Res. Bull., Ser. B, no. 27, p. 79, pl. 2, figs. 9-11

Holotype: KC no. 10014, Paratype: KC no. 10015

Floor of the Kubusu River, Kamishinmachi, Yatsuo-cho, Toyama Prefecture (36 °34.2' N, 137 °9.4' E)

Joyama mudstone of the Yatsuo Formation

Late Early Miocene (zone N.8 of Blow)

Cenozoic Bivalvia

Kenshiro Ogasawara

Institute of Geoscience, University of Tsukuba,
Tsukuba 305-8571, Japan

Acar sakuradoensis Itoigawa and Shibata, 1975

Bull. Mizunami Fossil Mus., no. 2, p. 19, pl. 6, figs. 21a-22

Holotype: MFM no. 10014, Paratype: MFM no. 10015

West of Sakurada, Toki-cho, Mizunami City, Gifu Prefecture
(Loc. no. 35)

Nataki Conglomerate of the Oidawara Formation, Mizunami
Group

Miocene

Acesta oyamai Kamada, 1973

Sci. Rep. Tohoku Univ., 2nd Ser., Spec. Vol. No. 6 (Hatai Mem.
Vol.), p. 237, pl. 23, fig. 1

Holotype: GEN no. 1003, Paratype: GEN no. 1004 (fig. 2)

In the prospecting level of the 3rd slope, Iojima Coal-mine,
Iojima-machi, Nishisonogi-gun, Nagasaki Prefecture
Okinoshima Formation

Eocene

Acesta (Plicacesta) watanabei Nakano and Okamoto, 1982

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 127, p. 360, pl. 57,
figs. 1a-b, pl. 58, figs. 1a-b

Holotype: GSEH-OK-S no. 001 (pl. 57, figs. 1a-b), Paratype:
GSEH-OK-T no. 003

Yuya-dani, Yokan, Taisha-machi, Hikawa-gun, Shimane
Prefecture: Paratype; Nukakojima, Oyabe City, Toyama
Prefecture; 36°41'54"N, 136°51'17"E

Taisha Formation or Tadaura Formation, Yashiro Formation
(Paratype)

Early Miocene

Acharax tokunagai (Yokoyama) see *Solemya (Acharax) tokunagai* Yokoyama, 1925

Acharax yokosukensis Kanie and Kuromochi, 1995

Sci. Rep. Yokosuka City Mus., no. 43, p. 52, figs. 1-4

Holotype: YCM-GP no. Ig36, Paratype: YCM-GP nos. Ig32,
Ig37, Ig47, Ig48

East side cliff of the southern entrance of Shinasawayama
Tunnel, Ikegami, Yokosuka City, Kanagawa Prefecture

Upper part of the Hayama Formation

Miocene (CN4 Zone)

Acila ashiaensis (Nagao) see *Nucula (Acila) mirabilis* var. *ashiaensis* Nagao, 1928

Acila brevis Nagao and Huzioka see *Acila (Acila) vigilia* Schenck var. *brevis* Nagao and Huzioka, 1941

Acila (Acila) divaricata chitosensis Noda, 1962

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), vol. 34, no. 3, p. 227,
pl. 16, fig. 9

Holotype: IGPS no. 79060

Loc. No. 344, cliff of the Shibumi River, just under the Chitose
bridge, Chitose, Matsudai-machi, Higashikubiki-gun, Niigata
Prefecture

Higashigawa Formation

Pliocene

Acila (Acila) elongata Nagao and Huzioka see *Acila (Acila) vigilia* Schenck var. *elongata* Nagao and Huzioka, 1941

Acila (Acila) exima (Yokoyama) see *Nucula exima* Yokoyama, 1925

Acila (Truncacila) gottschei (Böhm) reported by Nagao and Huzioka (1941) from the Miocene Kawabata Series (Formation) in Hokkaido

Acila (Truncacila) hidakensis Nagao and Huzioka, 1941

Jour. Fac. Sci., Hokkaido Imp. Univ., ser. 4, vol. 6, no. 2, p. 124,
pl. 29, figs. 20, 20a

Holotype: GH no. ?

Anecha, Ogiusu-mura, (Road side cliff of Nishi-Anecha,
Urakawa-machi), Urakawa-gun, Hidaka Province, Hokkaido;
42°13'23"N, 142°42'30"E

Kawabata Formation

Miocene

Acila (Acila) iwadonozawensis Kanno, 1958

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 159,
pl. 1, figs. 3, 4

Holotype: TKD no. 5722, Paratype: TKD no. 5723 (same
locality)

Loc. No. 222, a small river side cliff, about 500 m upstream of
Iwadonozawa, Ogano-machi, Chichibu-gun, Saitama Prefecture

Nenokami Sandsatone of the Hikokubo Group

Oligocene (early Miocene)

Acila kurodai Kanehara, 1937

Jour. Geol. Soc. Japan, vol. 44, no. 526, p. 704, pl. 22 (10), fig.
4-10

Holotype: GSJ no. ?, destroyed, described by Hatai and
Nisiyama (1952)

West cliff of Ainu-zawa, a tributary of the Paromantunai River,
Embetsu-mura (Embetsu-machi), Teshio-gun, Teshio Province,
Hokkaido (44°46'30"N, 141°52'30"E)

Yuchi Formation

Pliocene (Pleistocene)

Acila (Acila) kushiroensis Nagao and Huzioka, 1941

Jour. Fac. Sci., Hokkaido Imp. Univ., ser. 4, vol. 6, no. 2, p. 135,
pl. 31, fig. 10, 10a, 11, 11a, 11b

Holotype: GH no. ?

Upper course of the Charo-gawa, Kushiro (River cliff along the upper course of the Charo-gawa about midway between Kami-Charo and Charo, Shiranuka-mura (Shiranuka-machi), Shiranuka-gun, Kushiro Province, Hokkaido; 43 °05'44"N, 143 °53'55"E)

Charo Formation

Oligocene

***Acila minuta* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 25, pl. 1, figs. 8, 9

Holotype: GK no. 201

(About 150 m West of Honohashi, Saigo-mura, 2.5 km N of Kakegawa railway station (Kakegawa City), Shizuoka Prefecture; 34 °47'02"N, 138 °00'06"E)

Dainichi Formation

Pliocene

(Synonymous with *Acila (Truncacila) totomiensis* Makiyama, 1931 by Hatai and Nisiyama (1952))

***Acila (Acila) musashiensis* Kanno, 1958**

Sci. Re., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 158, pl. 1, figs. 1, 2

Holotype: TKD no. 5720 (fig. 1), Paratype: TKD no. 5721 (fig. 2, loc. No. 222)

Loc. No. 219, a small valley cliff at Sakurazawa, about 600 m S of the Kurae Elementary School, Hio, Ogano-machi, Chichibu-gun, Saitama Prefecture: Paratype; loc. No. 222, a small valley exposure, about 500 m NW of Iwadonozawa, Ogano-machi, Chichibu-gun, Saitama Prefecture
Nenokami Sandstone of the Hikokubo Group
Oligocene (early Miocene)

***Acila (Truncacila) nagaioi* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 595, pl. 1, figs. 14, 15

Holotype: GSJ no. 5019

Obo, Arita-machi, Nishimatsuura-gun, Saga Prefecture

Kishima Formation

Oligocene

***Acila (Truncacila) nakazimai* Otuka, 1939**

Jour. Geo. Soc. Japan, vol. 44, no. 544, p. 26, pl. 2, figs. 9-11

Holotype: GT no.4250

Southwestern foot of the hill (117.2 m) boadering a creek about 100 m NE of the bank NE of Omuro-daira, Tanabu-machi, Shimokita-gun (Mutsu City), Aomori Prefecture (41 °14'39"N, 141 °16'14"E by Hatai and Nisiyama (1952))

Tanabu Beds (Hamada Formation)

Pliocene (Pleistocene)

***Acila (Truncacila) oyamadensis* Hirayama, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 29, p. 75, pl. 1, figs. 1-7

Holotype: TKD no. 10189; Paratype: TKD no. 10190 (figs. 2, 4-6: same locality)

Loc. No. 29, cliff along the tributary of the Kobisa-gawa, a little west of Oyamada, Hisanohama-machi (Iwaki City), Fukushima Prefecture

Asagai Formation

Oligocene

***Acila (Truncacila) picturata* (Yokoyama) see *Nucula picturata* Yokoyama, 1890**

Palaeontographica, vol. 36, nos. 3-6, p. 194, pl. 25, figs. 2a-b

Holotype: Munich Museum, not numbered, Hypotype: Stanford Univ., Pal Type coll. no. 5767 (by Hatai and Nisiyama, 1952)

Poronai, Sorachi-gun, Ishikari Province (Probably; near the Poronai coal-mine, a short distance SE of the Poronai Station, Mikasayama-mura, Sorachi-gun, Ishikara Province (Mikasa City), Hokkaido; 43 °13'19"N, 141 °54'52"E)

Poronai Formation

Cretaceous (Eocene)

***Acila (Acila) shimoyamai* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 596, pl. 1, figs. 16, 17

Holotype: GSJ no. 5017

A branch of Kakino-sawa, the Penkeporonai River, Penke, Ashibetsu City, Sorachi-gun, Hokkaido

Akabira Formation

Oligocene

***Acila submirabilis* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, p. 151-152, pl. 12, fig. 9

Holotype: GK no. ?

Environs of Meisen, North Kankyo-do, North Korea

Nanseki (Heiokudo Formation)

Miocene

(*Acila (Acila) submirabilis* Makiyama by Masuda and Noda (1976))

***Acila (Truncacila) totomiensis* Makiyama see *Yoldia totomiensis* Makiyama, 1927**

***Acila (Acila) vigilia* Schenck var. *brevis* Nagao and Huzioka, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 132, pl. 30, figs. 1-2b

Holotype: GH no. ?

Ororoppu, Yufutsu-gun, Iburi Province (Side cliff of the upper course of the Mukawa at Ororoppu, Hobetsu-mura (Hobetsu-machi), Yufutsu-gun, Iburi Province, Hokkaido; 42 °43'30"N, 142 °15'31"E)

Kawabata Formation

Miocene

***Acila (Acila) vigilia* Schenck var. *brevis* Nagao and Huzioka, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 132, pl. 30, figs. 3, 3a, 3b

Paratype: GH no. ?

Yayoi Coal-mine, Mikasayama-mura, Sorachi-gun, Ishikari Province, Hokkaido (Yayoi Coal-mine, about 2.8 km NW of Ikushumbetsu railway station, Mikawayama-mura, Sorachi-gun, Ishikari Province, Hokkaido; 43°16'29"N, 141°55'53"E (Hatai and Nisiyama (1952); Mikasa City, Hokkaido)

Upper Poronai (Poronai Formation)

Miocene (Eocene)

***Acila (Acila) vigilia* Schenck var. *brevis* Nagao and Huzioka, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 132, pl. 30, figs. 4, 4a

Paratype: GH no. ?

Esamanbetsu, Shamani-mura, Shamani-gun, Hidaka (River side of upper course of the Shamani-gawa (Samani-gawa), a short distance NE of Esamanbetsu, Shamani-mura, Shamani-gun (Samani-machi, Samani-gun), Hidaka Province, Hokkaido; 42°11'40"N, 143°00'14"E)

Kawabata Formation

Miocene

***Acila (Acila) vigilia* Schenck var. *elongata* Nagao and Huzioka, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 133, pl. 31, figs. 1-4

Holotype: GH no. ? (designated by Hatai and Nisiyama, 1952 as original figs. 3), Paratype: GH no. ? (figs. 1-2 and 4)

Asahi Coal-mine, Sorachi-gun, Ishikari Province (Asahi Coal-mine, about 1.4 km N of Asahi railway station, Iwamizawa-machi (Iwamizawa City), Sorachi-gun, Ishikari Province, Hokkaido; 43°10'10"N, 141°53'03"E)

Takinoue Formation

Miocene (early middle Miocene)

Acila yanagawaensis* (Nomura and Zinbo) see *Nucula (Acila) yanagawaensis* Nomura and Zinbo, 1936**Acilana matsuo* Noda, Kikuchi and Nikaido, 1989**

Prof. H. Matsuo Mem. Vol., p. 59, pl. 1, figs. 1a-4c

Holotype: IGUT no. 11403, Paratype: IGUT nos. 11404-1, -2, -3 Satake-minami New Town, Tenjinbayashi-machi, Minami, Hitachiohta City, Ibaraki Prefecture (B point)

Kume Formation

Pliocene

***Adula asahiensis* Kanno, Ohara and Kaiteya, 1968**

Sci. Rep., Tokyo Kyoiku Daidaku, Sec. C, vol. 10, no. 94, p. 9, pl. 2, figs. 4a-5c

Holotype: TKD no. 7990 (fig. 4), Paratype: TKD no. 7991 (fig.

5)

Exposure of the left river side just below the Takayanagi Bridge on the Horomui River in the vicinity of Asahi Coal-mine, Iwamizawa City, Hokkaido; 43°09'17"N, 141°53'24"E

Horomui Formation; basal part

Miocene

***Adula chikubetsuensis* Amano, 1984**

Venus, vol. 43, no. 2, p. 186, figs. 3-6

Holotype: JUE no. 15002, Paratype: JUE nos. 15003-1, -2

Large cliff at 2 km upstream of Tanko-no-sawa,

Shosanbetsu-mura, Tomamae-gun, Hokkaido

Chikubetsu Formation

Middle Miocene

***Adulomya (?) azarie* Shikama, 1969**

In Shikama and Masujima, 1969, Sci. Rep., Yokohama Nat. Univ., Ser. 2, no. 15, p. 89, pl. 6, figs. 15-16

Holotype: GIYU no. 2

Loc. no. 103, campus of Azarie houses, 100 m ESS of Zimmuji Station, Zushi City, Kanagawa Prefecture

Ikego Formation

Pliocene

***Adulomya chitanii* Kanehara, 1937**

Bull. Imp. Geol. Surv. Japan, vol. 27, no. 1, p. 19, pl. 5, figs. 1, 6-9

Holotype: GSJ no. ? (fig. 1), destroyed, described by Hatai and Nisiyama (1952)

Nakosono-seki, Sekimoto-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture (36°51'08"N, 140°46'08"E)

Mizunoya Formation

Miocene

***Adulomya uchimuraensis* Kuroda, 1931 n. gen. et n. sp.**

Shinano Chubu Chishitsushi (Geology of Central Shinano), part 4, p. 27, pl. 13, figs. 111-114

Holotype: GH no. ?

Small valley at the foot of Daimyojin-dake, 800 m SW of the summit, Nishiuchi-mura, Chiisagata-gun, Nagano Prefecture (36°19'N, 138°07'E)

Upper Uchimura (Uchimura Formation)

Miocene

***Aequipecten hataii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 169, pl. 1, figs. 14-18

Holotype: TKD no. 5616, Paratype: TKD, no. 5617 (same locality)

Loc. No. 205, a small road side exposure, about 600 m W of Chigaya mineral spring, Chigaya, Yoshida-machi, Chichibu-gun, Saitama Prefecture

Nenokami Sandstone of the Hikokubo Group

Oligocene (early Miocene)

(*Cryptopecten hataii* (Kanno))

Aequipecten kyushuensis (Nagao) see *Pecten kyushuensis* Nagao, 1928

Aequipecten matsunagiensis Masuda, 1966

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 323, pl. 35, figs. 4-6

Holotype: IGPS no. 90863

Loc. No. 32, small road side exposure, about 200 m S of the primary school, Matsunagi, Suzu City, Ishikawa Prefecture; 37° 30'12"N, 137°13'14"E

Higashi-Innai Formation

Miocene

Aequipecten yanagawaensis (Nomura and Zinbo) see *Pecten yanagawaensis* Nomura and Zinbo, 1936

Akebiconcha chitanii (Kanehara) (Synonymous with *Calyptogena pacifica* Dall (by Masuda and Noda, 1976))

Akebiconcha kawamuraei elongata Ozaki, 1958

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 123, pl. 5, figs. 3, 4, pl. 6, figs. 1, 2, 3-5

Syntype: NSM nos. 4408, 4409, Paratype: NSM no. 4460 (pl. 6, figs. 1, 2)

Ebishima (a small islet), off Inuwaka, Choshi City, Chiba Prefecture (Syntype); Paratype, Road side cutting in front of the Electric Car station of Zimmuzi (Zushi City), Miura Peninsula, Kanagawa Prefecture

Na-arai and Zushi (Paratype) Formations

Pliocene

Akebiconcha nipponica (Oinomikado and Kanehara) see *Calyptogena nipponica* Oinomikado and Kanehara, 1938

Akebiconcha uchimuraensis (Kuroda) see *Adulomya uchimuraensis* Kuroda, 1932 (Synonymous with *Adulomya chitanii* Kanehara)

Aloides erythron nisataiensis Otuka, 1934

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 620, pl. 48, figs. 43-45

Syntype: GT no. 1509

Stream-side of the Nisatai valley, about 200 m SE of the bridge at S of Nisatai, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°17'53"N, 141°19'24"E)

Lower Kadonosawa (Kadonosawa Formation)

Miocene

Aloides succincta (Yokoyama) see *Corbula succincta* Yokoyama, 1923 (*Caryocorbula* (*Solidicorbula*) by Masuda and Noda (1976))

Alucinoma crassiuscula (Yokoyama) see *Thyasira crassiuscula* Yokoyama, 1927

Amussiopecten akiyamae Masuda, 1962

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 33, no. 33, p. 224, pl. 27, figs. 1-3

Holotype: DGS no. 3854, shifted to IGPS no. 90658

Sea cliff at Fudoiwa, Kanaya, Amaha-machi, Kimitsu-gun (Futtsu City), Chiba Prefecture (35°09'30"N, 139°49'30"E)

Inagozawa Formation

Miocene

Amussiopecten hyugaensis Shuto, 1955

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 20, p. 105, pl. 16, figs. 105, pl. 17, figs. 2, 4, 5

Holotype: GKL no. 4368 (pl. 16, fig. 3; loc. MI-3592), Paratype: GKL nos. 4150, 4151 (pl. 16, fig. 4; loc. MI-903), 4153, 4144, 4159, 4172, 4364 (pl. 17, fig. 2; loc. MI-3592), 4674, 4676, 4695, 4163 (pl. 16, fig. 1; loc. MI-157), 4696 (pl. 16, fig. 2; loc. MI-903)

Oyamada, Mukasa-mura (Takaoka-machi), Higashimorokata-gun, Miyazaki Prefecture: Paratype, loc. MI-903, Kariyabaru, Tano-machi, Miyazaki-gun, Miyazaki Prefecture; loc. MI-157, Kano, Takaoka-machi, Higashimorokata-gun, Miyazaki Prefecture Miyazaki Group

Miocene

(Synonymus with *Amussiopecten iitomiensis* (Otuka) by Masuda (1962))

Amussiopecten iitomiensis (Otuka) see *Pecten iitomiensis* Otuka, 1934

Amussiopecten planicostulatus (Nomura and Niino) see *Pecten planicostulatus* Nomura and Niino, 1932

Amussiopecten praesignis (Yokoyama) see *Pecten praesignis* Yokoyama, 1922

Amusium longuidum Ozaki, 1958

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 113, pl. 15, figs. 33, 34

Syntype: NSM no. 4479

Road side cutting 1.5 km southwest of Siisiba (Shiishiba) Station, and 500 m SW of Tokoyoda-machi, Choshi City, Chiba Prefecture; Gyobu-misaki, a sea cliff east of Iioka-machi, Unakami-gun, Chiba Prefecture

Iioka Formation

Pliocene

(*Polynemamussium alaskense longuidum* (Ozaki) by Masuda and Noda (1976))

Amusium (Propeamusium) kusiroense Takeda, 1953

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 73, pl. 6, figs. 7, 8

Syntype: UH no. 11133 and 11134

Loc. No. T40-K, Kuttyarosibetsu creek, upper tributary of Syoro River (Shiranuka-machi, Shiranuka-gun), Kushiro Province, Hokkaido
 Poronai Formation
 Oligocene (Eocene)
 (*Propeamussium kusiroense* (Takeda) by Masuda and Noda (1976))

***Amusium pleuronectes okinawaensis* Masuda, Sato and Shuto, 1986**

Mem. Fac. Sci., Kyushu Univ. Ser. D, vol. 26, no. 1, p. 18, pl. 2, fig. 11, pl. 3, figs. 1, 2
 Holotype: GK-L no. 11827
 Loc. no. 2, sea cliff about 200 m N of Shimajiri, Hirara City, Miyako-jima, Okinawa Prefecture
 Oura Formation of the Shinajiri Group
 Pliocene

***Anadara abdita* Makiyama** see *Arca abdita* Mikiyama, 1926 (Synonymous with *Anadara makiyamai* Hatai and Nisiyama by Hatai and Nisiyama (1952))

***Anadara (Scapharca) akitaensis* Noda**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 106, pl. 5, figs. 9, 10, 19, 20
 Holotype: IGPS no. 16330
 Tayazawa, Wakimoto-mura, Minamiakita-gun, (Oga City) Akita Prefecture
 Sasaoka Formation
 Pliocene (Pleistocene)

***Anadara (Anadara) amacula* (Yokoyama)** see *Arca amacula* Yokoyama, 1925

***Anadara (Anadara) amacula amacula* (Yokoyama)** see *Arca amacula* Yokoyama, 1925

***Anadara (Anadara) amacula elongata* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 84, pl. 5, figs. 2-7
 Holotype: IGPS no. 85907 (originally described IGPS no. 62435)
 Nagaya, Kanazawa City, Ishikawa Prefecture
 Omma Formation
 Pliocene (early Pleistocene)

Anadara (Anadara) amacula rotunda* Noda, 1966

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 85, pl. 5, figs. 15, 18
 Holotype: AKMG no. 10023
 Kita-Asahikawa, Shimokitade, Akita City, Akita Prefecture
 Sasaoka Formation
 Pliocene

***Anadara (Anadara) amacula tazawaensis* Tanaka, 1960**
 Bull. Fac. Educ., Shinshu Univ., no. 11, p. 182, pl. 1, fig. 9a-10c
 Holotype: SU no. 162

Cliff along the stream of Komatsuzawa, Tazawaku, Toyoshina-machi, Minamiazumi-gun, Nagano Prefecture
 Aoki Formation
 Miocene

(*Anadara (Anadara) tazawensis* Tanaka by Noda (1966))

***Anadara (Anadara) arasawaensis* Noda**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 86, pl. 4, figs. 13, 15-17
 Holotype: IGPG no. 90046, Paratype: IGPS no. 90047
 Arasawa, Gomyojin-mura, Shizukuishi-machi, Iwate Prefecture
 Sakamotogawa Formation
 Miocene

***Anadara (Hataiarca) castellata* (Yokoyama)** see *Arca castellata* Yokoyama, 1923

***Anadara chichibuensis* Hatai and Nisiyama, 1952** (invalid)

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 27: Type, *Arca amacula* Yokoyama (1925; Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 3, p. 124, pl. 14, fig. 5)
 A river floor near a fall at Nenokami, Yoshida-machi, Chichibu-gun, Saitama Prefecture
 Inugi Formation (Nenokami Formation)
 Oligocene (early Miocene)
 (Invalid by Hatai and Nisiyama (1952) and valid as *Anadara chichibuensis* Kanno by Masuda and Noda (1976))

***Anadara chichibuensis* Kanna, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 163, pl. 1, figs. 9, 10
 Holotype: TKD no. 5688
 A river floor near a fall at Nenokami, Yoshida-machi, Chichibu-gun, Saitama Prefecture
 Nenokami Formation
 Oligocene (early Miocene)
 (valid name by Masuda and Noda (1976))

***Anadara (Hataiarca) daitokudoensis* (Makiyama)** see *Arca daitokudoensis* Makiyama, 1926

***Anadara (Anadara) gentaroensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 87, pl. 7, figs. 19-21
 Holotype: IGPS no. 86411
 Gentaro, Kozai-mura, Ouchi-machi (Marumori-machi), Igu-gun, Miyagi Prefecture
 Yoshizawa Formation (Hazama Formation)
 Miocene (early Miocene)

***Anadara (Anadara) hataii* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 88, pl. 6, figs. 1, 4-7

Holotype: IGPS no. 73210

Nishigoto, Hanawa-machi, Higashishirakawa-gun, Fukushima Prefecture

Tanagura Formation (Kubota Formation)

Miocene

***Anadara hidakaensis* Kubota, 1953**

Jour. Soc. Earthsci., Amature, Japan, vol. 6, no. 4, p. 170, pl. 2, figs. 3-4c

Holotype: UH no. ?

Along the Monbetsu River, situated at about 750 m SW from the junction with Chibeshinai Stream, Hirotomi, Monbetsu-mura (Biratori-machi), Saru-gun, Hidaka Province, Hokkaido

Furanui Formation

Miocene

***Anadara (Anadara) hokkaidoensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 90, pl. 4, figs. 18, 19, pl. 5, fig. 14, pl. 8, figs. 1, 8

Holotype: IGPS no. 86408

Upstream of the Ishii-sawa, Atsunai, Horonobe-machi (Urahoro-machi), Tokachi-gun, Tokachi Province, Hokkaido

Chokubetsu Formation

Miocene

***Anadara (Scapharca ?) iwashibaraensis* Noda, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 104, pl. 10, fig. 15

Holotype: IGPS no. 29050

Iwashibara, Kamitareki-mura, Ogasa-gun (Kakegawa City), Shizuoka Prefecture

Dainichi Formation

Pliocene

***Anadara (Anadara) iwatensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 91, pl. 4, figs. 21, 22

Holotype: IGPS no. 90048

Arasawa, Myojin-mura, Shizukuishi-machi, Iwate-gun, Iwate Prefecture

Sakamotogawa Formation

Miocene

***Anadara (Anadara) iwatonoensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 92, pl. 9, fig. 21, pl. 11, fig. 19

Holotype: IGPS no. 63342

Jakotsuzawa, Saruhashi, Kitatsuru-gun, Yamanashi Prefecture

Iwatono Formation

Miocene

***Anadara (Anadara) kakehataensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 88, pl. 23, figs. 8-10

Holotype: IGPS no. 72511

West cliff, about 50 m S of the bridge at Kakehata, Unohana-mura (Yatsuo-machi), Nei-gun, Toyama Prefecture (36°32'50"N, 137°09'35"E)

Susahara (Kurosedani Formation)

Miocene

***(Anadara (Hataiarca) kakehataensis* Hatai and Nisiyama by Noda (1966))**

***Anadara (Hataiarca) kakehataensis* Hatai and Nisiyama see *Anadara (Anadara) kakehataensis* Hatai and Nisiyama, 1949**

***Anadara (Pectinatarca) kiiensis* Mizuno, 1953**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 9, p. 16, figs. 5a-b

Holotype: TK no. ?

Komugi, Irokawa-mura, Hongu-cho, Higashimuro-gun, Wakayama Prefecture

Mitsuno Formation

Miocene

***(Anadara (Anadara) kiiensis* Mizuno by Noda (1966))**

***Anadara (Hataiarca) kogachiensis* Noda, 1971**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 81, p. 37, pl. 6, figs. 1-5, 8-17

Holotype: IGPS no. 86757, Paratype: IGPS nos. 86756, 86887

Loc. no. 109, West of Kogachi, Haneji-son (Nago City), Okinawa-jima, Okinawa Prefecture

Haneji Formation

Pliocene (Pleistocene)

***Anadara (Anadara) koichiroi* Noda, 1988**

Saito Ho-on Kai Spec. Pub., no. 3 (Prof. T. Kotaka Commem. Vol.), p. 117, pl. 3, figs. 1a-3b

Holotype: IGUT no. 10710, Paratype: IGUT nos. 10711-1, -2

Loc. 3 of Sato et al (1986); Sea cliff, northwest of Piseoganzaki, about 1 km NE of Fukuyama, Hirara City, Miyako-jima, Okinawa Prefecture

Oonogoshi Formation

Pliocene

***Anadara (Scapharca) kotakai* Noda, 1988**

Saito Ho-on Kai Spec. Pub., no. 3 (Prof. T. Kotaka Commem. Vol.), p. 118, pl. 3, figs. 9a-b

Holotype: IGUT no. 10712

Loc. 81 (Haneji), West of Nakoshi, (Nago City), Okinawa Prefecture

Haneji Formation

Pliocene (Pleistocene)

***Anadara (Scapharca) kumensis* Noda, Kikuchi and Nikaido, 1993**

Sci. Re., Inst. Geosci., Univ. Tsukuba, Sec. B, vol. 14, p. 136

Holotype: IGUT no. 13015, Paratype: IGUT nos. 13132, 13133
 Loc. A. (Inote, Hitachiohta City), Ibaraki Prefecture
 Kume Formation
 Pliocene

Anadara (Anadara) kuohsingensis Masuda and Huang, 1993

Jour. Geol. Soc. China, vol. 36, no. 3, p. 260, pl. 1, figs. 1-6
 Holotype: NTUM no. 93-027 (Loc. no. KS 180)
 Changhukeng Formation along the Peikangchi River, about 100
 m downstream of the Hsintung Bridge, Kuosing, Taiwan
 Changhukeng Formation
 Miocene

Anadara kurodai Tanaka, 1960

Bull. Fac. Educ., Shinshu Univ., no. 11, p. 178, pl. 1, figs. 4a-5
 Holotype: SU no. 198, Paratype: SU nos. 161, 199, 200, 201
 Road cliff at Kamabuta, Akashina-machi, Higashichikuma-gun,
 Nagano Prefecture: Paratype (SU nos. 200, 201), loc.; river-side
 cliff of Jyuni-sawa, so-called "Nako gake", Shittako,
 Shiga-mura, Minamizumi-gun, Nagano Prefecture; (SU no. 161),
 cliff along the stream of Komatsu-zawa, Tazawa-ku,
 Toyoshina-machi, Minamiazumi-gun, Nagano Prefecture
 Aoki Formation
 Miocene
 (*Anadara (Anadara) kurodai Tanaka* by Noda (1966))

Anadara (Anadara) kurosedaniensis Hatai and Nisiyama, 1949

Jour. Paleont., vol. 23, no. 1, p. 89, pl. 23, figs. 11, 12
 Holotype: IGPS no. 72511
 West cliff, about 50 m south of the bridge at Kakehata,
 Unohana-mura (Yatsuo-machi), Nei-gun, Toyama Prefecture
 Susuhara Formation (Kurosedani Formation)
 Miocene
 (*Anadara (Hataiarca) kurosedaniensis Hatai and Nisiyama*
 by Noda (1966))

Anadara makiyamai Hatai and Nisiyama, 1939

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 143-144, pl. 9, fig.
 7
 Holotype: IGPS no. 62430
 Nanseki, Meisen-gun, Kankyodo, North Korea
 Heirokudo Formation
 Miocene

Anadara (Anadara) miyazakiensis Noda, 1966

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 94, pl.
 6, figs. 2, 3
 Holotype: NSM no. 4241
 Odozu, Nango-machi, Minaminaka-gun, Miyazaki Prefecture
 Tsuma Formation
 Miocene

Anadara (Anadara) moriyensis Tanaka, 1961

Bull. Fac. Educ., Shinshu Univ., no. 12, p. 69, pl. 1, figs. 11-13
 Holotype: SU no. 796 (fig. 12)
 Loc. no. A5, river-side cliff at the back of the Ushiroyama
 Agricultural Cooperative Association Office, Ushiroyama,
 Konami-ku, Suwa City; 35°58'33"N, 138°04'04"E (Small cliff
 at the southern foot of Karasuyama, Katakura, Fijisawa,
 Kamiina-gun, Nagano Prefecture by Noda (1966))
 Moriya Formation
 Miocene

Anadara (Anadara) naganoensis Noda, 1966

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 95, pl.
 3, fig. 8
 Holotype: IGPS no. 86410
 Stream cliff of a tributary of the Saikawa, Fukudo, about 10 m E
 of the Fukudo Bridge, Shinanoshinmachi, Kamiminochi-gun,
 Nagano Prefecture
 Gonda Formation
 Miocene (upper Miocene)

Anadara (Scapharca) nakamurai Mizuno, 1953

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 9, p. 15, fig. 3
 Holotype: TK no. ?
 Komugi, Irokawa-mura, Hongu-cho, Higashimuro-gun,
 Wakayama Prefecture
 Mitsuno Formation
 Miocene
 (*Anadara (Anadara) nakamurai Mizuno* by Noda (1966))

Anadara (Anadara) nantouensis Masuda and Huang, 1993

Jour. Geol. Soc. China, vol. 36, no. 3, p. 260, pl. 1, figs. 7-10
 Holotype: NTUM no. 93-033
 Loc. no. KS 654, Kuanyinshan Sandstone along the right river
 cliff of the Wuchi River, Kuosing, Taiwan
 Kuaninshan Sandstone
 Miocene

Anadara ninohensis (Otuka) see Arca ninohensis Otuka, 1934

Anadara (Hataiarca) nodai Masuda, Sato and Shuto, 1986

Mem. Fac. Sci., Kyushu Univ. Ser. D, vol. 26, no. 1, p. 11, pl. 1,
 figs. 7a-12
 Holotype: GK-L no. 11825
 Loc. no. 5; Sea cliff, about 2 km NE of Higa, Gusuke-cho,
 Miyako-jima, Okinawa Prefecture (125°23'21"E, 24°46'52"N)
 Yonahama Formation of the Shimajiri Group
 Pliocene

Anadara (Anadara) ogawai (Makiyama) see Arca ogawai Makiyama, 1926

Anadara (Scapharca) ommaensis Otuka see *Anadara satowi ommaensis* Otuka, 1936

***Anadara (Hataiarca) pseudosubcrenata* Ogasawara, 1977**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 47, no. 2, p. 92, pl. 6, figs. 1-2b, 5a-6

Holotype: IGPS no. 95070, Paratype: IGPS no. 95071-1, -3 (figs. 1, 2, 5, 6)

Loc. no. KO-01, river floor of Sai-gawa, 350 m SE of Okuwa bridge, Okuwa, Kanazawa City, Ishikawa Prefecture (136 ° 41'03"N, 136 ° 31'58"E)

Omma Formation

Pliocene (early Pleistocene)

***Anadara satowi ommaensis* Otuka, 1936**

Trans. Proc. Palaeont. Soc. Japan, no. 21, p. 729-730, figs. 3, 8a-b

Holotype: ERITU no. 1089

Nagaya near Kanazawa (Kanazawa City), Ishikawa Prefecture

Omma Series (Omma Formation)

Pliocene (lower Pleistocene)

(*Anadara (Scapharca) ommaensis* Otuka by Noda (1966))

Anadara (Scapharca) setoensis (Yokoyama) see *Arca setoensis* Yokoyama, 1923 (1924)

***Anadara (Hataiarca) shimonakaensis* Hayasaka, 1969**

Rep. Fac. Sci., Kagoshima Univ., no. 2, p. 41, pl. 1, fig. 2a-5, pl. 2, figs. 1-2b

Holotype: ESK no. F-5001 (pl. 1, figs. 3a-e), Paratype: ESK, no. F-50002

Loc. No. 1, sea cliff at the south coast of the island, south of the Shimonaka village, Minamitane-machi, Kumage-gun, Kagoshima Prefecture

Kawachi Formation

Miocene

***Anadara (Scapharca ?) shizuokaensis* Noda, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 103, pl. 11, figs. 7, 8

Holotype: IGPS no. 78919

Hosoya, Kitaogasa-mura, Ogasa-gun (Takegawa City), Shizuoka Prefecture

Nagano Sandstone and Mudstone Alternation

Pliocene

(*Anadara (Scapharca) shizuokaensis* Noda by Noda (1966))

Anadara (Diluvarca) suzukii (Yokoyama) see *Arca suzukii* Yokoyama, 1926 (*Anadara (Scapharca) suzukii* (Yokoyama) by Noda (1966))

Anadara (Scapharca) suzukii (Yokoyama) see above, *Arca suzukii* Yokoyama, 1926

Anadara (Scapharca) takaoensis (Nomura) see *Arca takaoensis* Nomura, 1933

***Anadara (Hataiarca) takayamai* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 120, pl. 2, figs. 18, 22, pl. 13, figs. 5, 6, 17, 18

Holotype: IGPS no. 86403 (pl. 13, figs. 5, 6, 17, 18)

Kubusu River cliff, Kakehata, Yatsuo-machi, Nei-gun, Toyama Prefecture

Kurosedani Formation

Miocene (N8 Zone of Blow (1969))

***Anadara (Anadara) tanakai* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 99;

Type, *Anadara watanabei*, Tanaka, 1960, p. 183, pl. 1, fig. 15

Holotype: SU no. 155

Road cliff at Kamabuta, Akashina-machi, Hihashichikuma-gun, Nagano Prefecture

Aoki Formation

Miocene

***Anadara (Anadara) tanakuraensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 100, pl. 8, figs. 11, 12

Holotype: IGPS no. 28404

Kamitoyonosawa, Tanagura-machi, Hihashishirakawa-gun, Fukushima Prefecture

Tanagura Formation

Miocene (middle Miocene)

Anadara (Anadara) tatunokutiensis (Nomura and Hatai) see *Arca tatunokutiensis* Nomura and Hatai, 1936

***Anadara (Anadara) tatunokutiensis nagawensis* Chinzei, 1961**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, vol. 13, pt. 1, p. 104, pl. 2, figs. 1, 4, 9-12

Holotype: CM no. 8633 (figs. 1, 11, 12), Paratype: CM nos. 8634 (fig. 10), 8638 (figs. 4, 9), 8635-8637

About 500 m W of Kenyoshi town, Nagawa-machi (Sannohe-gun), Aomori Prefecture

Togawa Formation

Pliocene

Anadara (Anadara) tazawaensis Tanaka, spell miss; see *Anadara (Anadara) tazawensis* Tanaka

***Anadara (Tosarca) tosaensis* Noda, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 105, pl. 11, figs. 11-13

Holotype: IGPS no. 54609

Ono, Yasuda-machi, Aki-gun, Kochi Prefecture

Ananai Formation

Pliocene

***Anadara (Anadara) tsudai* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p.103, pl. 2, figs. 19-21

Holotype: IGPS no. 86396

Hirabayashi, Yatsuo-machi, Nei-gun, Toyama Prefecture

Jyoyama Formation

Miocene (middle Miocene)

***Anadara (Anadara) uozumii* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 97, pl. 10, fig. 17

Holotype: UH no. ?

Utanobori-machi, Esashi-gun, Soya Province, Hokkaido (precise locality unknown)

Shibiutan Formation

Pliocene (Miocene)

Anadara watanabei* Kanehara see *Arca trilineata watanabei* Kanehara, 1935**Anadara (Hataiarca) yatsuoensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 122, pl. 13, figs. 1, 3, 9, 16, 19-20

Holotype: IGPS no. 86402

Kubusu River cliff, Kakehata, Yatsuo-machi, Nei-gun, Toyama Prefecture

Kurosedani Formation

Miocene (N8 Zone of Blow (1969))

***Angulararca* n. gen. Noda, 1966**

Type-species *Angulararca yubaensis* Noda, 1966 described from the Miocene Aoso Formation, Miyagi Prefecture

***Angulararca yubaensis* Noda, 1966**

Saito Ho-on Kai Mus., Res. Bull., no. 35, p. 16, figs. 7, 8, 17, 18

Holotype: IGPS no. 72884

Road side cliff, west of Yuba, Rifu-mura (Rifu-cho), Miyagi-gun, Miyagi Prefecture

Aoso Formation

Miocene (late Miocene)

***Angulus (Moerella) kagayamensis* Ogasawara and Tanai, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 210, pl. 19, fig. 13

Holotype: GSJ no. ?

Kagayama Park, Oyama-machi, Tsuruoka City, Yamagata Prefecture

Kamigo Formation (Oyama Formation)

Miocene (N8 Zone of Blow (1969))

***Angulus okumurai* Taguchi, 1992**

Venus, vol. 51, no. 3, p. 166, figs. 8-12

Holotype: MFM no. 20042, Paratype: MFM nos. 20043-20045

Niida, Tsuyama City, Okayama Prefecture; 35°03'05"N, 134°04'01"E

Yoshino Formation of the Katsuta Group

Middle Miocene

Angulus (Tellinides) maxima* (Nagao) see *Tellina maxima* Nagao, 1928**Anisocorbula ohiroii* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. p. 329, pl. 35, figs. 35a-36b

Holotype: IGPS no. 90079

Loc. No. 36, river cliff near small road, about 600 m SSE of Kakuma, Suzu City, Ishikawa Prefecture; 37°29'02"N, 137°08'46"E

Higashi-innai Formation

Miocene

(*Caryocorbula (Anisocorbula) ohiroii* (Masuda) by Masuda and Noda (1976))

***Anisocorbula osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 79, pl. 3, figs. 10a-c

Holotype: JC no. 1400029

Iwakishin (Loc. No. 18), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

(*Caryocorbula (Anisocorbula) osawanoensis* (Tsuda) by Masuda and Noda, 1976)

Anisocorbula peregrina* (Yokoyama) see *Corbula peregrina* Yokoyama, 1923**Anisocorbula venusta elongata* Itoigawa, 1955**

Mem. Coll. Sci., Kyoto Univ. Ser. B. vol. 22, no. 2, p. 139, pl. 6, fig. 7

Holotype: JC no. 1300060

Loc. No. 111, Kamigiri, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone

Miocene

(*Caryocorbula (Anisocorbula) venusta elongata* (Itoigawa))

***Annachlamys okinawaensis* Noda, 1991**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 12, p. 19, figs. 8-6a-9

Holotype: IGUT no. 11451 (fig. 7a-b), Paratype: IGUT nos. 11453-1, -3, 11464-1, -2

Loc. no. 42U; Exposure at Nesabe, Tomigusuku-son, Shimajiri-gun, Okinawa Prefecture

Yonabaru Formation

Pliocene

***Annachlamys taiwanensis* Masuda and Huang, 1990**

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 147, pl. 5, figs. 1-7
 Holotype, NMNS no. 003284 (loc. no. KS 660), Paratype:
 NMNS no. 003283
 Kuanyinshan Sandstone Wuchi section, central Taiwan, Taiwan
 Kuanyinshan Sandstone
 Middle Miocene

***Annachlamys yaquenaensis* Noda, 1988**

Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 68, pl.
 17, figs. 14a-b
 Holotype: IGUT no. 10969
 Loc. no. 12, cliff of west side of Yakena-harbour, Yokone,
 Yonagusuku-mura, Nakoshi-gun, Okinawa Prefecture
 Shinzato Formation
 Pliocene

***Anodonta iwakawai* Suzuki** reported by Omori and Ibaraki
 (1966) from the Pliocene Ohkui Formation, Komoro Group,
 Nagano Prefecture; see ***Anodonta iwakawai* Suzuki, 1939**
 (***Anodonta (Sinanodonta) iwakawai* Suzuki, 1939** by Habe
 (1977))

***Anodonta muroii* Suzuki, 1941**

Japan. Jour. Geol. Geogr., vol.18, nos. (1-2), p. 56-57, pl.4, figs.
 6a, b
 Holotype: UMUT CM15248
 Migigono-sawa, a branch of the Takara-zawa, Nayosi-mura,
 Nayoshi-gun, Karahuto (Sakhalin, Russia)
 Middle part of the Esutoru coal-bearing Formation
 Middle Miocene

Anodonta subjapanensis* (Yokoyama)** see ***Nodularia
***subjapanensis* Yokoyama, 1932**

***Anodonta subjapanensis yokoyamai* Suzuki, 1941**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 6, pt. 2, p. 29-30,
 pl. 2, fig. 3
 Holotype: 1932 *Nodularia* cf. *biwae* Yokoyama (not Kobelt,
 1879; in parts; Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3,
 pt. 6, p. 243-244, pl. 4, fig. 4)
 In the Takahashi-zawa, a branch of the Horonitabetsu-gawa
 Uryu coal-field (Hokuryu-cho), Province of Ishikari, Hokkaido
 Numata Formation
 Upper Eocene

Anodonta subjapanensis* (Yokoyama)** see ***Nodularia
subjapanensis* Yokoyama (1932): *Anodonta subjapanensis by
 Suzuki (1941)

***Anomia asagaiensis* Hirayama, 1955**

Sci. Re., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 29, p. 83, pl.
 1, figs. 23-26
 Holotype: TKD no. 10217 (Fig. 23, Loc. A16), Paratype: TKD

nos. 10219 (figs. 24, 25, Loc. A15), 10218 (fig. 26, Loc. A4)
 Loc. A16, road-side cliff of the pass between Yotsukura and
 Enoami, Yotsukura-machi, Iwaki City: Loc. A15, road-side cliff
 at about 1 km N of the Yotsukura Fishing Port,
 Yotsukura-machi, Iwaki City, Fukushima Prefecture: Loc. No.
 A4, sea cliff a little N of the Yotsukura Fishing Port,
 Yotsukura-machi, Iwaki City, Fukushima Prefecture
 Asagai Formation
 Oligocene

***Anomia dennsicostulata* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 16, pl.
 2, fig. 3
 Holotype: GT no. ?
 A short distance N of Shimosoyama, Shigarami-mura
 (Togakushi-mura), Kamiminochi-gun, Nagano Prefecture (36 °
 40'N, 138 °04'E)
 Shigarami Formation
 Pliocene
 (Synonymous with ***Anomia macroschisma* (Deshayes)** by
 Hatai and Nisiyama, 1952)

***Anomia nipponensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 146, pl. 11,
 figs. 18, 19
 Holotype: GT no. ?
 Road side cutting at Naganuma, Totsuka Ward (-ku), Yokohama
 City, Kanagawa Prefecture (35 °22'03"N, 139 °32'05"E)
 Naganuma Bed (Naganuma Formation)
 Lower Musashino (Pleistocene, ca. 0.5 Ma)
 (Fig. 18; ***Anomia lischkei* Dautzenberg and Fisher**, fig. 19;
***Anomia cytaeum* Gray** by Hatai and Nisiyama (1952))

***Anomia shimoyamai* Mizuno, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 4, p. 14 (238), pl. 1, figs. 32
 Holotype: GSJ no. 5322
 Station 63-3S-BIL (Adit No. 3), coal-bearing facies of the Laki
 stage at the vicinity of the W. P. I.D. C. Degari Colliery in the
 Degari coal field, about 17 airmiles SE of Quetta, Pakistan (30 °
 05'N, 67 °13'E)
 Degari coal-bearing sandstone (Gazij Shales at Laki)
 Eocene

***Apolymetis (Leporimetis) nipponica* Oyama (MS), Ogasawara and Tanai, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 209, pl. 19,
 figs. 10a-b
 Kagayama Park, Oyama-machi, Tsuruoka City, Yamagata
 Prefecture
 Kamigo Formation (Oyama Formation)
 Miocene (N8 Zone of Blow (1969))
 (Invalid because of not described and synonymous with
***Lepolymetis takaii* (Ogasawara and Tanai)** by Ogasawara and
 Nagasawa (1992))

***Apolymetis (Leporimetis) takaii* Ogasawara and Tanai, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 209, pl. 19, fig. 11

Holotype: GSJ no. ?

Kagayama Park, Oyama-machi, Tsuruoka City, Yamagata Prefecture

Kamigo Formation (Oyama Formation)

Miocene (N8 Zone of Blow (1969))

(*Lepolymetis takaii* Ogasawara and Tanai by Ogasawara and Nagasawa (1994))

***Arca (Anadara) abdita* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, p. 152-153, pl. 12, fig. 11

Holotype: Geol. Surv. Chosen no. 33

Nanseki, North Korea

Heiropudo Formation

Miocene

***Arca amicula* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 19, pl. 7, figs. 2-4

Holotype: GT no. ? designated by Hatai and Nisiyama (1952) as the fig. 4 and Paratype (figs. 2, 3), GT no. ?

Sakae, Kamiminouchi-gun, Shinano Province (about 100 m W of the primary school at Ikari, Sakae-mura (Nakajyo-mura), Kamiminouchi-gun, Nagano Prefecture; 36°36'20"N, 138°03' E)

Shigarami Formation

Pliocene

(*Anadara (Anadara) amicula* (Yokoyama))

***Arca (Arca) andoi* Nomura, 1933**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 16, no. 1, p. 33, pl. 3, figs. 8a-b

Holotype: IGPS no. 48383

Station no. 42, 500 m E of Sankwanko, Tsusho-sho, Bryoritsu-gun, Shinchiku-shu, Taiwan

Bryoritsu Beds

Pliocene (Pleistocene)

(*Anadara andoi* (Nomura))

***Arca castellata* Yokoyama, 1923**

Jour. Coll. Sci. Imp. Univ. Tokyo, vol. 45, art. 2, p. 17, pl. 2, figs. 10-13

Holotype: GT no. ?

Dainichi, 4 km S of Mori, Totomi (Valley 350 m NW of Dainichi, Kakegawa City, Shizuoka Prefecture; 34°48'07"N, 137°56'E).

Dainichi Formation

Pliocene

(*Anadara castellata* (Yokoyama) by Noda (1966))

***Arca (Anadara) daitokudoensis* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p.

153-154, pl. 12, figs. 10, 14, 15

Syntype: Geol. Surv. Chosen and Geol. Inst., Kyoto Imp. Univ. no. ?

Daitokudo, North Korea

Heiropudo Formation

Miocene

***Arca kagoshimensis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 59, pl. 3, figs. 21a-b

Holotype: UT no. ?

Cutting along the railway at Oji (Kita-ku), environs of Tokyo (Tokyo Prefecture)

Oji Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(Invalid, preoccupied; synonymised with *Anadara (Hataiarca) subcrenata* (Lischke) by Noda (1962); see *Anadara (Scapharca) subcrenata* (Lischke, 1869))

***Arca (Arca) kikaizimana* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 152 (44), pl. 5 (1), figs. 4a-5b

Holotype: IGPS no. 50198 (fig. 4), Paratype: (fig. 5)

Kamikatsutsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Anadara (Kikaiaurca) kikaizimana* (Nomura and Zinbo) by Noda (1966))

***Arca minoensis* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 19, pl. 6, figs. 15-17

Holotype: MFM no. 10011, Paratype: MFM nos. 10012, 10013

Nakahida, Hida-cho, Toki City, Gifu Prefecture (Loc. no. 111)

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

***Arca (Arca) miurensis* Noda, 1966**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 38, no. 1, p. 57, pl. 12, figs. 11, 12, 14, 15

Holotype: IGPS no. 23846 (figs. 11, 14)

Urago, Taura-machi, Miura-gun (Yokosuka City), Kanagawa Prefecture

Miyata Formation

Pliocene (Pleistocene)

***Arca miyatensis* Oyama, 1951 (invalid)**

(Synonymous with *Arca miurensis* Noda by Masuda and Noda (1976))

***Arca ninohensis* Otuka, 1934**

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 609, pl. 47, figs. 21, 22

Syntype: ERI no. 1318 (Siratori), 1323 (Nisatai), 1324 (Yuda),

1320 (Yazawa), 1321, 1322 (Tate), Holotype: ESR 1317 (may be), Paratype: ERI no. ? (shown in Measurements in table, p. 610)

Southeast valley of Shiratori (about 400 m SE of the temple at Shiratori, Nisatai, Ninohe City, Iwate Prefecture; 40°14'05"N, 141°20'23"E)

Lower Kadonosawa (Kadonosawa Formation)

Miocene

(Anadara (Anadara) ninohensis (Otuka) by Hatai and Nisiyama (1952))

Arca (Anadara) ogawai Makiyama, 1926

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 154-155, pl. 12, fig. 16

Holotype: Geol. Inst., Kyoto Imp. Univ., no. ?

Kankyindo and Kinshodo, North Korea

Mankodo Formation

Miocene

Arca pakistanica Mizuno, 1969

Bull. Geol. Surv. Japan, vol. 20, no. 4, p. 12 (236), pl. 1, figs. 34, 35, 35a

Holotype: GSJ no. 5290 or 5293

Station 63-9-A3 (Adit No. 9), coal-bearing facies of the Laki stage at the vicinity of the W. P. I.D. C. Degari Colliery in the Degari coal field, about 17 airmiles SE of Quetta (30°05'N, 67°13'E)

Degari coal-bearing sandstone (Gazij Shales at Laki)

Eocene

Arca (Noetia) pondaungensis Cotter var. transversa Nagao, 1928

Sci. Re., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 12, no. 1, p. 26, pl. 6, fig. 8-10

Holotype: IGPS no. 36012 (fig. 8), Paratype, IGPS no. ? (figs. 9-10)

The Hoshuyama Mine (about 200 m E of the bridge E of Kawamagari, and about 600 m W of the village office at Daigyoji, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture; 33°23'26"N, 130°52'14"E)

Doshi Formation

Upper Eocene

(Noetia nagaoui MacNeil by Hatai and Nisiyama (1952))

Arca rectangularis Tokunaga, 1906

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 61, pl. 3, figs. 23a-c

Holotype: UT no. ? (UMUT no. ?)

Cutting along the railway at Shinagawa (Sinagawa-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(Preoccupied, synonymous with *Arca (Arca) boucardi Jousseume, 1894* by Noda (1966))

Arca sakamizuensis Hatai and Nisiyama, 1952

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol. No. 3, p. 30

Holotype: IGPS no. 35996

Sakamizu, Kita-Kyushu City, Fukuoka Prefecture

Sakamizu Formation

Oligocene

(New n. for *Arca* sp. a, of Nagao, 1928, Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 27, pl. 3, figs. 9, 9a (valid by Noda and Masuda (1976))

Arca setoensis Yokoyama, 1923 (1924)

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 57, pl. 7 (missprint for 6), figs. 13a-b

Holotype: GT no. ? (UMUT no. ?)

(Wave cut brach on the southeastern side of Fujishima, Nishitonda-mura (Higashishirahama, Shirahama-cho), Nishimuro-gun, Wakayama Prefecture; 33°41'03"N, 135°22'31"E)

Fujishima Formation

Lower Pliocene (Miocene)

(Anadara (Anadara) setoensis (Yokoyama) by Hatai and Nisiyama (1952))

Arca (Arca) sokeishiensis Nomura., 1933

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 16, no. 1, p. 38, pl. 2, figs. 10a-b

Holotype: IGPS no. 4770

Sokeishi, Kwanden-sho, Sobun-gun, Taiwan-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(Anadara sokeishiensis (Nomura))

Arca suzukii Yokoyama, 1926

Jour. Fac. Sc., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 368, pl. 42, figs. 6-7a

Holotype: designated by Hatai and Nisiyama (1952) as figs. 6, 6a, GT no. ?; Paratype as figs. 7, 7a, GT no. ? (both nos shifted in UMUT no. ?)

Tonohama (Northern slope of the hill, near the boundary between Yasuda-machi and Tono-machi, and in the neighbourhood of the middle path of the three, about 600 m NE of the shrine at Ono, Tano-machi, Aki-gun, Kochi Prefecture; 33°26'N, 134°E)

(Konomine Formation; Ananai Formation)

Pliocene

(Anadara (Scapharca) philippiana (Dunker) by Hatai and Nisiyama (1952))

Arca (Arca) takaoensis Nomura, 1933

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 16, p. 39, pl. 4, figs. 2-5

Holotype: IGPS no. 37444, Paratype: IGPS no. 37428 (by Noda, 1966)

Shinsui, Enshusho, Okayama-gun, Takao-shu, Formosa

(Taiwan)
Kaizan Formation
Miocene

(*Anadara takaoensis* (Nomura))

***Arca (Arca) takayasui* Noda, 1966**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.) vol. 38, no. 1, p. 58, pl. 12, figs. 18, 19

Holotype: AKMG no. ?

Rocky beach at Kurosaki, Iwasaki-mura, Nishitsugaru-gun, Aomori Prefecture
Kurosaki Formation
Miocene

***Arca tatunokutiensis* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 68, pl. 12, figs. 1a-c

Holotype: SM no. 2179

Goroku cliff along the northern bank of the Hirosegawa (Aoba-ku), in the western part of Sendai City, Miyagi Prefecture (38 °16'N, 140 °49'E).

Tatsunokuchi Formation

Pliocene

(*Anadara (Anadara) tatunokutiensis* (Nomura and Hatai) by Hatai and Nisiyama (1952))

***Arca tenuis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 58, pl. 4, figs. 1a-b

Holotype: UT no. ? (UMUT no. ?)

Cutting along the railway at Shinagawa (Shinagawa-ku), Oji (Kita-ku) and Tabata (Kita-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa Bed (Tokyo Formation)

Pleistocene (120-70 Ka)

(Invalid: synonymous with *Anadara (Scapharca) broughtonii* (Schrenck))

***Arca (Arca) trileneata watanabei* Kanehara, 1935**

Japan Jour. Malac., vol. 5, no. 5, p. 276, pl. 13, figs. 1, 2

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Kokozura, Hiraga-machi, Ibaraki Prefecture (Cliff in front of the grocery store at the northern entrance of Kokozura-tunnel, Iwaki City, Fukushima Prefecture; 36 °51'03"N, 140 °47'05"E)

Taga Group

Pliocene (Miocene)

(*Anadara (Anadara) watanabei* (Kanehara) by Hatai and Nisiyama (1952))

***Arca uwaensis* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 7, p. 349, pl. 67, figs. 13, 14

Holotype: designated by Hatai and Nisiyama (1952) as fig. 13,

GT, no. ? ; Paratype, fig. 14, GT no. ? (UMUT no. ?)

Northern cliff of the Komaru-gawa (a short distance W of the main road near Hagenoshita, Uwae-mura (Takanabe-cho), Koyu-gun, Miyazaki Prefecture; 32 °08'27"N, 131 °31'04"E) (Kounji Formation)

Pliocene

(*Barbatia (Miratacar) uwaensis* (Yokoyama) by Hatai and Nisiyama (1952))

***Arca valentula* Yokoyama, 1923 (1924)**

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 57, pl. 7 (misprinted for 6), figs. 1a-2b

Holotype: UMUT no. ? (fig. 1 designated by Hatai and Nisiyama (1952))

(Wave cut beach on the southeastern side of Fujishima, Shirahama-cho (Higashishirahama Shirahama-cho), Nishimuro-gun, Wakyama Prefecture; 33 ° 41'03"N, 135 ° 22'31"E)

(Fujishima Formation)

Lower Pliocene (Miocene)

***Arca watanabei* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 162, pl. 1, figs. 7, 8

Holotype: TKD no. 5742, Paratype: TKD no. 5743

Loc. No. 707, Minezawa, Chichibu City, Saitama Prefecture
Saginosu Formation

Miocene

***Arca (Barbatia) yokoyamai* Nomura, 1933**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 16, no. 1, p. 33, pl. 3, figs. 8a-b

Holotype: IGPS no. 42588

Wangwa Station no. 38, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Bryoritsu Beds

Pliocene (Pleistocene)

(*Barbatia yokoyamai* (Nomura))

***Arconaia hosonoi* Suzuki and Oyama, 1948**

Venus, vol. 15, nos. 1-4, p. 42-43, Text-figs. 3-5

Holotype: RINT no. ? (Text-fig. 5), Paratype: RINT no. ? (Text-fig. 4)

West of Hagiwara, Ake-mura, Kawage-gun, Mie Prefecture (Jinbu?) Coal-bearing Formation, Suzuka Group

Miocene

***Aspalima (Nipponolimopsis) azumana* (Yokoyama) see *Limopsis azumana* Yokoyama, 1910**

***Astarte (Tridonta) alaskensis shinadae* Kanno, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 73, p. 59, pl. 3, figs. 7a-b

Holotype: TKD no. 6122 (figs. 7a-b), Paratype: TKD no. 6123

Cliff of the Tshibetsu-River near the Pirika Primary School,

Pirika, Imagane-machi, Setana-gun, Hiyama Province,
Hokkaido
Setana Formation
Pliocene (Pleistocene)

***Astarte aomoriensis* Nomura and Hatai, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. p. 115, pl. 9, fig. 5

Holotype: SM no. 6170

Tsurugasaka (Near the foot of the northern slope bordering a creek, about 200 m SE of the bench-mark (35.57) on the Ushu highway, and about 2.1 km SW of the shrine at Tsurugasaka, Aomori City, Aomori Prefecture; 40°46'32"N, 140°37'21"E)

Daishaka Formation

Pliocene (Pleistocene)

***Astarte hakodatensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 140, pl. 11, figs. 5, 6

Holotype:GT no. ?

Koshiba (Sea cliff of Shiba, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35°20'05"N, 139°38'06"E)

Lower Musashino (Koshiba Formation)

Pliocene (Pleistocene)

***Astarte japonica* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 54-55, pl. 3, figs. 16a, a', b

Holotype: UT no. ? (UMUT no. ?)

Cutting along the railway at Shinagawa (Shinagawa-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(? Invalid and synonymous with *Astarte (Astarte) hakodatensis* Yokoyama (1920))

***Astarte teshioensis* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 7, p. 244, pl. 31, figs. 1, 2

Holotype: designated by Hatai and Nisiyama (1952) as fig. 1, and Paratype as fig. 2 UMUT no. ?

Embets, Teshio-gun (River side of the Uttsugawa, about 3 km E of the contact point of the Uttsugawa and the Bishkshushinaigawa, Embetsu-cho Teshio-gun, Tokachi Province, Hokkaido; 44°44'50"N, 141°55'24"E)

Yuchi Formation

Pliocene (lower Pleistocene)

(*Astarte (Tridonta) teshioensis* Yokoyama; *Tridonta teshioensis* (Yokoyama))

***Azorus philippianus* Kotaka and Noda, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 142, pl. 25, figs. 9, 10

Holotype: IGPS no. 95087 (fig. 9)

Road-side cliff, about 500 m south of Amuntay, western part of Bondoc Peninsula, Philippines

Pitogo Formation

Miocene

***Barbatia (Acar) hayasakai* Noda, 1966**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 38, no. 1, p. 67, pl. 4, figs. 10, 11

Holotype: IGPS no. 76429

Ogi, Nishikoshi-mura (Izuzozaki-machi), Santo-gun, Niigata Prefecture

Funabashi Sandstone (Haizume Formation)

Upper Pliocene (Pleistocene)

***Barbatia kanazawaensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 35, no. 3, p. 282, pl. 59, fig. 2

Holotype: IGPS no. 85501

About 1.8 km upstream from Kanazawa, the Fukasawa valley, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatatawa Formation

Miocene

(*Porterius ? kanazawaensis* (Akutsu) by Masuda and Noda, 1976)

***Barbatia koshibensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 28; Type as *Arca decussata*, Yokoyama (1920; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 165, pl. 17, fig. 5)

Holotype: UMUT no. ?

Koshiba, (Shiba, Kanazawa-ku, Yokohama City), Kanagawa Prefecture

Koshiba Beds (Koshiba Formation)

Pliocene (Pleistocene)

(*Striarca tenebrica* (Reeve) by Masuda and Noda, 1976)

***Barbatia (Savignyarca) kubara* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 22, no. 2, p. 135, pl. 5, figs. 1, 2

Holotype: JC no. 1300084 (fig. 1)

Loc. No. 446, Nakanishi, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubara Sandstone (Toyama Formation)

Miocene

***Barbatia (Savignyarca) minoensis* Itoigawa, 1960**

Jour. Earth Sci., Nagoya Univ., vol. 8, no. 2, p. 264, pl. 1, figs. 2a-b

Holotype: ESN no. 20003, Paratype: ESN no. 20004

Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Barbatia okamotoi* Oyama and Nishimoto, 1988**

Bull. Mizunami Fossil Mus., no. 15, p. 4, pl. 1, figs. 4a-c

Holotype: MFM no. 20014
Miyachi-cho, Shobara City (Loc. 11 of Ueda, 1986; Loc. 1 of Okamoto and Terachi, 1974), Hiroshima Prefecture
Lowermost of "lower formation" of the Bihoku Group
Miocene (N8 Zone of Blow (1969))

***Barbatia (Savignyarca) osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 68, pl. 1, figs. 2a-b

Holotype: JC no. 1400002

Tsuzara (Loc. No. 20), Osawano-machi, Nei-gun, Toyama Prefecture

Kurosedani Formation

Miocene (late early Miocene)

***Barbatia (Pugilarca) tsurushizakiensis* Noda, 1966**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), vol. 38, no. 1, p. 70, pl. 10, figs. 9, 10

Holotype: IGPS no. 17271

Sea cliff of Tsurushizaki, Hitachi City, Ibaraki Prefecture

Hatsuzaki Formation

Pliocene

***Barbatia (Barbatia) uetsukiensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 89, pl. 23, figs. 6, 7

Holotype: IGPS no. 72522

Road side cutting about 100 m NE of the shrine at Dainichizaka, Uetsuki-mura (Shoou-cho), Katta-gun, Okayama Prefecture; 35°03'41"N, 134°07'21"E

Uetsuki Formation (Katsuta Group)

Miocene

(*Striarca uetsukiensis* (Hatai and Nisiyama) by Masuda and Noda, 1976)

***Barbatia (Bentharca) xenophorica* Kuroda see *Bathyarca ? xenophorica* Kuroda, 1930 (*Bathyarca (Bentharca) xenophorica* (Kuroda) by Masuda and Noda, 1976)**

***Barbatia (Pugilarca) yabei* Noda, 1966**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), vol. 38, no. 1, p. 71, pl. 2, figs. 14, 15

Holotype: IGPS no. 25787

Sea cliff, Tsurushizaki, Hitachi City, Ibaraki Prefecture

Hatsuzaki Formation

Pliocene

***Barnea (Umitakea) japonica* (Yokoyama) see *Pholadomya japonica* Yokoyama, 1920**

***Bassina (Callanatis) hayasakai* Kotaka, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 128, pl. 22, figs. 3-15

Holotype: IGPS no. 94933-1, Paratype: IGPS nos. 94933-2, -3, -4

Yuanli Shell Mound, near Miaoli, Formosa, China (Taiwan)

Yuanli Shell Mound

Holocene

***Bassina (Callanatis) javana* Kotaka, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 130, pl. 22, figs. 17-19

Holotype: IGPS no. 94934

Java Sea (04°40'03.111"S, 113°13'18.861"E)

Recent

***Bassina (Callanatis) multilamellata* Kotaka, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 130, pl. 22, figs. 20, 21

Holotype: IGPS no. 3159-1,-2 (conjoined right and left valves),

Paratype: IGPS nos. 3159-3, -4, -5, -6, -7, -8

Singapore Strait, Singapore

Recent

***Batissa bihokuensis* Matsuoka, 1979**

Bull. Mizunami Fossil Mus., no. 6, p. 37-38, pl. 6, figs. 2a-b

Holotype: ESN no. 40006

Nogumi. Tojo-cho, Hiba-gun, Hiroshima Prefecture (133°17.5'E, 34°53.5'N)

Jinseki Formation, Bihoku Group

Miocene

***Batissa muratai* Nagao and Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 10, text-figs. 1, 1a, pl. 3 (3), figs. 11, 12, 12a

Holotype: UH no. 9306

Kyoei-zawa, Komori colliery, Utashinai City, Sorachi-gun, Hokkaido

Wakkanabe Formation

Eocene

***Batissa nagaoui* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ., Tokyo, Sec. 2, vol. 6, pt. 3, p. 46

Holotype: IGPS no. ? (Nagao; 1928, Sci. Rep. Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 9, no. 2, p.108 (12), pl. 20 (3), figs.10, 30, pl. 21 (4), fig. 21, pl. 22 (5), figs. 16-19

Kakize Mine, Takashima, Takashima-machi, Nishisonogi-gun, Nagasaki Prefecture

(Hashima Formation), Takashima Group

(Eocene)

(*Cyrena (Batissa) ponderosa* Nagao, 1928)

***Batissa nishikawai* Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 17, text-figs. 1-3

Holotype: UH no. 9312

The upper course of Tan-Unnaisawa, a tributary of Shimokinebetsu River, Obira-cho, Rumoi-gun, Teshio Province, Hokkaido

Iryu Formation

Iryu Formation

Eocene

***Batissa procera* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 6, pt. 3, p. 54, pl. 1, fig. 5

Holotype: UT no. ?

Eri Mine, Saza-cho, Kitamatsuura-gun, Nagasaki Prefecture
Nakazato Formation, Sasebo Group

Miocene

***Batissa procera eriensis* Hayashi, 1960**

Venus, vol. 21, no. 1, p. 98, text-figs. 2a-c

Holotype: no. ?

Kida Mine, Sasa-machi, Kitamatsuura-gun, Nagasaki Prefecture
Nakasato Formation

Miocene

(*Corbicula (Batissa) procera eriensis* (Hayashi) by Masuda and Noda (1976))

***Batissa sakakibarai* Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 24, pl. 4, figs. 1, 2

Holotype: UH no. 9310

The middle course of the Manui River, Shiranui-mura, Sakaehama-gun, Saghalien, Russia
(Naibuchi Formation)

Paleogene (Lower Oligocene)

***Batissa taiwanensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 68, pl. 1, figs. 1a-d

Holotype: IGPS no. 45087

Sokeishi, Kwanden-sho, Sobun-gun, Tainan-shu, Taiwan
Byoritsu Beds

Pliocene (Pleistocene)

(*Geloina ? taiwanensis* (Nomura))

***Bellucina civica* (Yokoyama)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture; see ***Cardium civica* Yokoyama, 1927**

***Bellucina okinawaensis* Noda, 1988**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 71, pl. 19, figs. 21a-b

Holotype: IGUT no. 11320

Loc. no. 87-21; Miyagishima (Yonashiro-machi, Nakagami-gun), Okinawa Prefecture

Shinzato Formation

Pliocene

***Bentharca echigoensis* Itoigawa, 1958**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 4, p. 260, pl. 1, fig. 4

Holotype: JC no. 600101

Loc. no. Km 55, small valley about 1 km E of Myogadani,

Kamo City, Niigata Prefecture

Nishiyama Formation

Pliocene (lower Pleistocene)

(***Bathyarca (Bentharca) echigoensis* (Itoigawa)** by Masuda and Noda (1976))

***Bentharca takuroi* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 20, pl. 6, figs. 18a-20b

Holotype: MFM no. 10016, Paratype: MFM nos. 10017, 10018

West of Sakurado, Toki-cho, Mizunami City, Gifu Prefecture

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

Bentharca xenophoricola* (Kuroda)** reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture (Bathyarca (Bentharca) xenophoricola* (Kuroda)** by Masuda and Noda (1976))

***Brachidontes matchgarensis* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art. 6), p. 135, pl. 4, figs. 9, 10

Holotype: KC no. ?

Cliff along the Cape Mary, eastern part of the abandoned village Matchgar in Schimidt Peninsula, Sakhlain

Matchgar horizon 5': basal part of the Miocene

Miocene ?

(***Mytilus matchgarensis* (Makiyama)**)

***Brachidontes obessus* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 50, pl. 3, figs. 9, 10

Holotype: TKD no. 10108

Loc. No. 1, Nanatsuishi, Oyamada-shimogo, Oyamada-mura (Ogawa-machi), Haga-gun, Tochigi Prefecture; 36°47'05"N, 140°13'40"E

Kobana Formation

Miocene

***Brachidontes takiensis* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 73, pl. 3, figs. 15, 16

Holotype: IGPS no. 79380

Sorida, Shimotaki, Tono-machi, (Iwaki City), Fukushima Prefecture

Iwaki Formation

Oligocene

***Brechites (Warnea) yokoyamai* Shikama, 1954**

Sci. Rep., Yokohama Nat. Univ., Ser. 2, no. 3, p. 63, pl. 3, figs. 1a-d

Holotype: TK no. ?

Yasuda-mura (-cho), Aki-gun, Kochi Prefecture

Tonohama Formation

Pliocene

***Bucardium ogurai* (Otuka) (*Vasticardium ogurai* (Otuka) by Masuda and Noda (1976))**

***Cadella minoensis* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 29, pl. 8, figs. 15a-17b
Holotype: MFM no. 10041, Paratype: MFM nos. 10042, 10043
West of Sakurado, Toki-cho, Mizunami City, Gifu Prefecture
(Loc. no. 35)
Nataki Conglomerate of the Oidawara Formation, Mizunami Group
Miocene

***Callista ariakensis* (Nagao) reported by Mizuno (1956) from the Eocene Shiratake Formation, Kumamoto Prefecture; see *Macrocallista ariakensis* Nagao, 1928**

***Callista chinensis takagii* Masuda, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 20, p. 121, pl. 19, fig. 7
Holotype: DGS no. 2501 shifted to IGPS no. 90885
Tokunari, Machino-machi, Fugeshi-gun (Wajima City), Ishikawa Prefecture
Higashi-Innai Formation
Miocene

(*Tapes* (*Ruditapes*) *takagii* (Masuda) by Masuda and Noda (1976))

***Callista hanzawai* (Nagao) reported by Mizuno (1956) from the Oligocene Meinohama Formation, Fukuoka Prefecture (*Callista* (*Macrocallista*) *hanzawai* (Nagao) by Masuda and Noda (1976))**

***Callista matsuraensis* (Nagao) reported by Mizuno (1956) from the Oligocene Kishima Formation, Saga Prefecture (*Callista* (*Macrocallista*) *matsuraensis* (Nagao) by Masuda and Noda (1976))**

***Callista misawaensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 88; Type as *Meretrix* (*Callista*) *chinensis*, Yokoyama (1924; p. 14, pl. 2, figs. 7, 8)
Dodaira, Misawa, Kubota-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture; 36 °54'N, 140 °44'05"E
Iwaki Formation

Oligocene

(*Ezocallista* (?) *kurodae* (Kamada) by Masuda and Noda (1976))

***Callista* (*Costacallista*) *mitagensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 188, pl. 4, figs. 3, 4
Holotype: TKD no. 5726 (fig. 3), Paratype: TKD no. 5727 (fig. 4)

Loc. No. 137, a small exposure, about 150 m N of a shrine, Mitagae, Ryokami-mura, Chichibu-gun, Saitama Prefecture
Ushikubitoge Formation
Oligocene (early Miocene)

***Callista pseudobrevisiphonala* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 68, pl. 4, figs. 4-6
Holotype: TKD no. 10139 (fig. 6), Paratype: TKD no. 10142
Loc. No. 2, Michinosawa, Oyamada-shimogo, Oyamada-mura (Ogawa-machi), Haga-gun, Tochigi Prefecture; 36 °46'50"N, 140 °13'10"E
Kobana Formation
Miocene

***Callista sekiyaensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 285, pl. 59, figs. 8, 12
Syntype: IGPS no. 85506
Cliff of the Hoki River, about 100 m down stream from Daikoku-iwa, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture
Kanomatazawa Formation
Miocene

***Calyptogena akanudaensis* Tanaka, 1959**

Jour. Shinshu Univ. no. 8, p. 119, pl. 2, figs. 1-9
Holotype: SU no. 510 (figs. 5, 6), Paratype: SU nos. 524-531
Cliff along the mountain-side, about 1.5 km E of the Nishikibe Elementary School, Shiga-mura, Higahsichikuma-gun, Nagano Prefecture; 36 °19'N, 138 °07'E
Akanuda Limestone of the Bessho Formation
Miocene

(*Akebiconcha akanudaensis* (Tanaka) by Masuda and Noda (1976))

***Calyptogena chitanii* (Kanehara) see *Adulomya chitanii* Kanehara, 1937**

***Calyptogena pacifica* Dall reported by Kanno et al. (1989) from the Miocene Nodani Formation and Pliocene Kawazume and Nadachi Formations in Niigata Prefecture**

***Callista matsubarensis* (Nagao) see *Macrocallista matsubarensis* Nagao, 1928**

***Callista misawaensis* Hatai and Nisiyama n. n., 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 88; Type, *Meretrix* (*Callista*) *chinensis* (Chemnitz), Yokoyama (1924; p. 14, pl. 2, figs. 7, 8)
Holotype: GT no. ?
Dodaira, Misawa, Kubota-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture (33 °54'N, 140 °44'05"E)
Iwaki Formation

Miocene (Oligocene)

***Callista yamamotoi* Kubota, 1949**

Mineralogy and Geology, vol. 3, no. 2, p. 54, pl. 11, figs. 1-9, text-figs. 1-3

Holotype: HG no. ? (figs. 1-3)

Upper stream of Tsutsumizawa, about 4.5 km northwest from Tomine Station,

Tokiwa-mura (Futatsui-machi), Yamamoto-gun, Akita Prefecture (Precise locality unknown by Hatai and Nisiyama (1952))

Yamamoto Formation (Sasaoka Formation ?)

Pliocene

***Calopodium (Kennerlia) pulchella* (Yokoyama) ((*Pandora pulchella* (Yokoyama) by Hatai and Nisiyama (1952))**

***Calyptogena nipponica* Oinomikado and Kanehara, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 539, p. 677. pl. 21, figs. 1, 2, 5

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

On the easternbank of the Maekawa (about 1.2 km S of the village office at Nakamura, about 200 m W of the shrine at Shigebuko, Nishitani-mura, Koshi-gun (Tochio City), Niigata Prefecture; 37°24.5'N, 138°59'E)

Ushigakubi Formation

Lower Pliocene (Miocene by Hatai and Nisiyama (1952))

(*Akebiconcha* cf. *kawamurai* Kuroda by Hatai and Nisiyama (1952))

***Calyptogena (Adulomya) uchimuraensis kurodai* Kanno and Tanaka, 1998**

Res. Rep. Shinshushinmachi Fos. Mus., no. 1, p. 22, figs. 4, 1-6, fig. 9, 1-6, fig. 10, 1-4

Holotype: SFMCM no. 0026, Paratype: SFMCM nos. 0020 – 0024

Loc. no. A: Akanuda Limestone, N of Akanuda, Shiga-mura, Higashichikuma-gun, Nagano Prefecture

Bessho Formation

Miocene

***Cardilia toyamaensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 79, pl. 3, figs. 6a-9

Holotype: JC no. 1400026

Tsuzara (Loc. No. 20), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

"*Cardilia*" *yudaensis* Otuka, 1934

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 620, pl. 48, figs. 46-48

Holotype: GT no. 1506

Shiratori (East side river cliff of the Mabechi-gawa an E of the smallbank about 400 m SW of Yuda, Kintaichi-mura, Ninohe-gun (Ninohe City), Iwate Prefecture; 40°19'N, 141°19'10"E).

Lower Kadonosawa (Kadonosawa Formation)

Miocene

(*Cardilia yudaensis* Otuka)

***Cardiomya gouldiana septentrionalis* (Kuroda)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Cardiomya mitsuganoensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 67, pl. 2, figs. 9, 10

Holotype: ESM no. 30010 (fig. 9)

Loc. No. K35, Ashisaka, Misato-mura, Age-gun, Mie Prefecture Oi Formation

Miocene

***Cardita hataii* Shikama, 1973**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol), p. 200, pl. 17, fig. 10

Holotype: GIYU no. M-6

Loc. No. 10, Daimyoji-danchi, Syoei-danchi, Kinugasa, Yokosuka City, Kanagawa Prefecture (35°15'37"N, 139°39'40"E)

Zushi Formation

Miocene

***Cardita katsumatai* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 54, pl. 9, fig. 17

Holotype: GS no. 36331

The third Namazuta Mine on the northern slope of the hill (about 400 m SE of the contact point of the two railmays at Namazuta, Iizuka City, Kaho-gun, Fukuoka Prefecture; 33°39'23"N, 130°43'E)

Honso Formation

Middle Eocene

***Cardita kondoi* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 9, pl. 9, figs. 4-6

Holotype: GS no. 36407

East coast of Oshima, Kurose-mura, Nishisonogi-gun, Nagasaki Prefecture (sea cliff at a point about 300 m SE of the contact point of the two roads at Tokuman; 33°01'44"N, 129°36'45"E)

Kakinoura Formation

Oligocene

(*Mytilicardita kondoi* (Nagao) by Hatai and Nisiyama (1952))

***Cardita leana* Dunker** reported by Hirayama (1973) from the Miocene Hiranita Formation, Saitama Prefecture

***Cardita mandaica* Yokoyama, 1911**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 27, art. 20, p. 9, pl. 2, fig. 8-11

Lectotype: designated by Hatai and Nisiyama (1952) as fig. 11, GT no. ?

In the shaft of the colliery in the Manda maine (about 150 m NE of the large pond and about 700 m E of the contact point of the two main roads at Manda), Arao-machi, Tamana-gun 'Arao City), Kumamoto Prefecture (32 °59'50"N, 130 ° 27'04"E)

Yotsuyama ? Formation

Upper Eocene

(*Venericardia mandaica* (Yokoyama) by Hatai and Nisiyama (1952))

***Cardita minoensis* Itoigawa, 1960**

Jour. Earth Sci., Nagaya Univ., vol. 8, no. 2, p. 267, pl. 1, figs. 9, 10

Holotype: ESN no. 20011 (fig.9), Paratype: ESN no. 20012

Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Cardita (Miodontiscus) nakamurai annakensis* Oinomikado, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 539, p. 674, pl. 20, figs. 7, 8

Holotype: GSJ no. ?, probably destroyed, described by Hatai and Nisiyama (1952)

Cliff and floor of the small river at Namerisawa (a short distance W of Komata, Annaka City, Gunma Prefecture; 36 °20'N, 138 ° 51.5'E)

Itahana Formation

Miocene

(*Miodontiscus nakamurai annakaensis* (Oinomikado))

***Cardita rotunda* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 55, pl. 3, figs. 17a-a'

Holotype: UT no. ?

Cutting along the railway at Shinagawa (Shinagawa-ku) and Oji (Kita-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

***Cardita panda* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 355, pl. 39, figs. 1, 2

Holotype: GT no. ?

Asuka, valley-side about 200 m SE of Asuka, Taruuki-mura, Ogasa-gun (Kakegawa City, Shizuoka Prefecture; 34 °47'01"N, 138 °E)

Satsuka Formation

Pliocene

(*Megacardita panda* (Yokoyama))

***Cardium ainuanum* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 202, pl. 51, figs. 5-7

Holotype: designated by Hatai and Nisiyama (1952) as fig. 7, GT no. ?

Rorenai, Haboro, Teshio (side cliff of the Migizawa stream, a tributary of the Haboro-gawa, about 1.5 km SW of Otap, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido; 44 ° 16'39"N, 141 °54'40"E)

Haboro Formation

Miocene

(*Clinocardium ainuanum* (Yokoyama) by Hatai and Nisiyama (1952))

***Cardium angustum* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 13 pl. 14, figs. 2a-b

Holotype; GT no. ?

A short discatnce N of Shimosoyama, Shigarami-mura, Kamiminochi-gun (Nagano City, Nagano Prefecture; 36 °40'N, 138 °07'E)

Shigarami Formation

Pliocene

(*Laevicardium (Trachycardium) angustum* (Yokoyama) by Hatai and Nisiyama (1952))

***Cardium arakawaense* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. Spec. Vol., no. 3, p. 39; Type, *Cardium pauperculum* Yokoyama (1925; p. 120, pl. 14, figs. 12, 13)

Holotype: UMUT no. ?

Southern cliff of the Aara-kawa (Arakawa River), about 150 m NW of the contact point of the main road and the road at Maruyama, Arakawa-mura, Chichibu-gun, Saitama Prefecture; 35 °57'11"N, 139 °01'14"E

Tsuyako Formation

Oligocene

(*Vasticardium* sp. by Masuda and Noda (1976))

***Cardium (Cerastoderma) asagaiensis* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 10, no. 2, art. 6, p. 139, pl. 5, figs.20, 22, 23

Holotype: GK no. ? (gum model of an adult left valve)

Yotsukura (Sea cliff of Yotsukura-machi, Iwaki City, Fukushima Prefecture; 37 °07'N, 141 °E)

Asagai Formation

Oligocene

(*Clinocardium asagaiensis* (Makiyama) by Hatai and Nisiyama (1952))

***Cardium braunsi* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 51, pl. 3, fig. 11

Holotype: UT no. ?

Cutting along the railway at Oji (Kita-ku), environs of Tokyo (Tokyo Prefecture)
Oji Bed (Tokyo Formation)
Pleistocene (ca. 120-70 Ka)

Cardium (Clinocardium) bulowi* Rolle** reported by Nomura (1938) from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture (Clinocardium bulowi* (Rolle)** by Hatai and Nisiyama (1952))

Cardium burchardi* Dunker** reported by Yokoyama, 1925 (p. 120, pl. 14, fig. 9) from the Pliocene (early Miocene) Ogano Formation, Saitama Prefecture (Vasticardium otukai* n. sp.** by Hatai and Nisiyama (1952))

***Cardium californiense* Deshayes** see ***Clinocardium californiense* (Deshayes, 1839)**

***Cardium (Acanthocardia) cancelatum* Nomura 1933**
Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 81, pl. 3, figs. 9a-b
Holotype: IGPS no. 46500
Exposure, 550 m SE of Jotsusho-wan Station no. 14, Tsusho-sho, Bryoritsu-gun, Shinchiku-shu, Taiwan
Byoritsu Beds
Pliocene (Pleistocene)
(New name as ***Trifaricardium nomurai* Kuroda and Habe, 1951** because of non Gmelin 1791)

Cardium ciliatum* Fabricius** reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture (Clinocardium ciliatum* (Fabricius)** by Hatai and Nisiyama (1952))

***Cardium civicum* Yokoyama, 1927**
Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 179, pl. 48, figs. 3, 4
Holotype: designated by Hatai and Nisiyama (1952) as fig. 4, GT no. ?
Nagaya (Road-side cliff about 150 m E of the bridge and about 300 m NW of the shrine at Nagaya, Kosaka-mura, Kakoku-gun (Kanazawa City, Ishikawa Prefecture; 36 °34'23"N, 136 °41'51"E)
Omima Formation
(***Linga (Bellucina) civica* (Yokoyama)** by Hatai and Nisiyama (1952))

***Cardium eregium* Yokoyama, 1926**
Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 345, pl. 39, fig. 10
Holotype: GT no. ?
Hirugaya (N side of pond in valley 500 m NW of Hirugaya, Hagima (Sagara-machi), Haibara-gun, Shizuoka Prefecture; 34 °43'02"N, 138 °10'07"E)

Sagara Group
Miocene
(***Pododesmus (Monia) eregium* (Yokoyama)**)

***Cardium fastosum* Yokoyama, 1927**
Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 178, pl. 48, fig. 5
Holotype: GT no. ?
Nagaya (Road-side cliff about 150 m E of the bridge and about 300 m NW of the shrine at Nagaya, Kosaka-mura, Kahoku-gun (Kanazawa City), Ishikawa Prefecture; 36 °34'23"N, 136 °41'51"E)
Omima Formation
Pliocene (lower Pleistocene)
(***Clinocardium fastosum* (Yokoyama)** by Hatai and Nisiyama (1952))

***Cardium (Cerastoderma) goisiense* Nomura, 1940**
Sci. Rep., Tohoku Imp. Univ., 2nd ser. (Geol), vol. 21, no. 1, p. 25, pl. 3, fig. 2
Holotype: SM no. 19913
River cliff northeast of Goishi, Tomioka-mura (Kawasaki-machi), Shibata-gun, Miyagi Prefecture (38 °12'N, 140 °43.5'E)
Momiwa Formation
Miocene (upper lower-Miocene)
(***Cerastoderma goisiensis* (Nomura)** by Hatai and Nisiyama (1952))

***Cardium (Trachycardium) gorokuensis* Nomura, 1938**
Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 256, pl. 34, figs. 15a-b
Holotype: SM no. 2439
Goroku cliff along the right bank of Hirosegawa, Aoba-ku, Sendai City, Miyagi Prefecture (38 °16'N, 140 °49'E)
Tatsunokuchi Formation
Pliocene

***Cardium (Trachycardium) hanpeizanense* Nomura 1933**
Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 77, pl. 1, figs. 7a-8b, pl. 2, figs. 8, 9
Holotype: IGPS no. 37455
Hanpeizan, Okayama-gun, Takao-shu, Taiwan
Riukiu Limestone (correlative with the Ryukyu Limestone)
Pleistocene
(***Trachycardium hanpeizanense* (Nomura)**)

***Cardium (Cerastoderma) hanzawai* Nomura 1933**
Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 79 pl. 3, figs. 18a-19b
Holotype: IGPS no. 46803 (fig. 18a-b), Paratype: IGPS no. ? (fig. 19a-b)
Exposure, 1050 m E of Hakushaton, Station no. 25, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(*Carditera hanzawai* (Nomura) by Habe (1977))

Cardium (Cerastoderma) hizenense Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 61, pl. 10, figs. 15-17

Holotype: GS no. 36369

Western sea cliff about 350 m SW of the shrine on the hill, Io-jima-machi, Nishisonogi-gun, Nagasaki Prefecture; 32 °42'N, 129 °46'21"E

Funatsu Formation

Upper Eocene

Cardium (Trachycardium) infantile Nomura and Zinbo, 1934

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 16, no. 2, p. 156 (48), pl. 5 (1), figs. 17a-b

Holotype: IGPS no. 50386

Kamikatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Afrocardium infantile* (Nomura and Zinbo) by Habe (1977))

Cardium ishigakensis MacNeil, 1964

U. S. Geol. Surv., Prof. Pap., 339-B, p. 9, pl. 3, figs. 8, 9

Holotype: USNM no. 638686

Seacoast west of the village of Ibaruma, Ishigaki-shima (Ishigaki City), Ryukyu Islands (USGS loc. D366(T)), Okinawa Prefecture

Miyara Formation

Eocene

(*Plagiocardium ishigakense* (Mac Neil) by Masuda and Noda (1976))

Cardium iwakiense Makiyama, 1934

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 10, no. 2, art. 6, p. 144, pl. 5, figs. 25-29

Holotype: designated by Hatai and Nisiyama (1952) as fig. 28, GK no. ?

Sea cliff of Yotsukura-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture; 37 °00'7"N, 141 °E

Asagai Formation

Oligocene

Cardium (Cerastoderma) iwasiroensis Nomura, 1935

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 113, pl. 6, figs. 1, 2

Holotype: SM no. 2146

Hitosao (SE of Ogino along the Aganogawa), Takasato-mura, Yama-gun, Fukushima Prefecture; 37 °36'N, 139 °44'E

Hitosao Formation (Urushikubi or Shiotsubo Formation)

Pliocene (Miocene)

(*Clinocardium iwasiroensis* (Nomura))

Cardium (Laevicardium) jobanicum Yokoyama, 1924

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 15, pl. 2, figs. 12-18

Holotype: GT no. ?

Tenjinmae, Kamidaki, Kadono-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture (36 °59'05"N, 140 °44'E)

Iwaki Formation

"Miocene" (Oligocene)

(*Protothaca jobanicum* (Yokoyama) by Hatai and Nisiyama (1952))

Cardium (Trachycardium ?) kinsimarae Makiyama, 1934

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art. 6), p. 141, pl. 6, fig. 35

Holotype: UK no. ?

Cliff along the Cape Mary, western part of the abandoned village Matchgar in Schmidt Peninsula, Sakhalin, Russia

Matchgar horizon (precise unknown)

Miocene ?

Cardium (Cerastoderma) kishimaensis Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 63, pl. 10, figs. 23, 25, 25a-b

Holotype: GS no. 36367

(Road-side cliff at Hanjo, about 1.2 km NW of the temple at Kawakami, Asahi-mura, Kishima-gun (Takeo City, Saga Prefecture; 33 °13'45"N, 130 °00'57"E)

Kishima Formation

Oligocene

(*Cerastoderma kishimaensis* (Nagao) by Hatai and Nisiyama (1952))

Cardium (Cerastoderma) matchgarensis Makiyama, 1934

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art. 6), p. 137, pl. 5, figs. 30, 31

Holotype: UK no. ?

Cliff along the Cape Mary, western part of the abandoned village Matchgar in Schmidt Peninsula, Sakhalin, Russia

Matchgar horizon 5

Miocene ?

(*Clinocardium matchgarensis* (Makiyama))

Cardium miikensis Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 111, pl. 18, figs. 5, 5a-b

Lectotype: designated by Hatai and Nisiyama (1952) as fig. 5, GS no. 35733

(Road-side cliff about 120 m NE of the contact point of the two road at) Oura, Omuta City, Fukuoka Prefecture; 33 °01'41"N, 130 ° 27'53"E)

Nanaura Formation

Eocene

(*Schedocardia ? miikensis* (Nagao) by Hatai and Nisiyama (1952))

***Cardium murataensis* Nomura and Onisi, 1940**

Japan Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 183, pl. 17, fig. 15
Holotype: SM no. 21711

Vicinity of Adachi, Murata-machi, Shibata-gun, Miyagi
Prefecture; 38 °07'01"N, 140 °42'04"E

(Murata Formation)

Miocene

(*Cerastoderma murataensis* (Nomura and Onisi) by Hatai and
Nisiyama (1952))

***Cardium (Clinocardium) mutuense* Nomura and Hatai, 1936**

Japan Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 279, pl. 33, fig. 11
Holotype: SM no. 8799

Middle course of the Komatazawa, a tributary of the
Aiuchu-gawa, Aiuchi-mura (Shiura-mura), Kitatsugaru-gun,
Aomori Prefecture; 41 °04'N, 140 °22'06"E

Isomatsu Formation

Oligocene (early Miocene)

(*Cerastoderma mutuensis* (Nomura and Onisi) by Hatai and
Nisiyama (1952))

***Cardium (Trachycardium) narusawaense* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 18, pl. 4, figs. 10, 11
Holotype: SM no. 5581

Near the Narusawa hot-spring (Road-side cliff about 1 km south
of the Narusawa hot-spring, Genbi-machi, Ichinoseki City,
Iwate Prefecture; 39 °10'N, 140 °52'05"E)

Narusawa Formation

Miocene

(*Trachycardium narusawaense* (Nomura) by Hatai and
Nisiyama (1952))

***Cardium (Papyridea) nipponicum* Yokoyama** reported by
Kuroda (1931) from the Pliocene Shigarami Formation, Nagano
Prefecture (*Papyridea (Fulvia?) kurodai* n. sp. by Hatai and
Nisiyama (1952; Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec.
Vol. no. 3, p. 39) (Invalid and synonymus with *Papyridea*
kurodai Sawada by Masud and Noda (1976))

***Cardium (Bucardium) ogurai* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 2, p. 28, pl.
1, figs. 1, 2, 8

Syntype: GT no. 10006

Several meters below the dam of the Saiji-gawa (about 200 m
NNE of the Shiobara railway station and about 500 m NEE of
the bridge at Suketo, Shiobara-machi, Hiba-gun (Shobara City),
Hiroshima Prefecture; 34 °51'43"N, 133 °01'05"E)

Shiobara Formation (Kanomatazawa Formation)

Miocene

***Cardium pauperculum* Yokoyama** (1925; p. 120, pl. 14, figs.
12, 13) was designated as a type of *Cardium arakawaense* n. sp
by Hatai and Nisiyama (1952)

***Cardium (Clinocardium) pseudofastosum* Nomura, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 171, pl. 23, figs. 1,
2

Holotype: SM no. 2388

Road-side cliff along the Kitamata-gawa, the upper course of the
Koromo-gawa a short distance W of Kitamata, and about 300 m
NW of the small bridge at Unada, Koromogawa-mura,
Isawa-gun, Iwate Prefecture (39 °03'56"N, 141 °01'48"E)

(Yushima Formation)

Pliocene

(*Clinocardium pseudofastosum* (Nomura) by Hatai and
Nisiyama (1952))

***Cardium sagawai* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, pt. 4, p. 186, pl. 50, fig.
7

Holotype: GT no. ?

In a fine, micaceous sandstone of the Dakeshita cliff,
Matsushima (On a road-side cliff, west coast of Matsushima,
about 200 m SW of the primary school at Uchiura, Matsushima,
Ohseto-cho, Nishisonogi-gun, Nagasaki Prefecture; 32 °55'37"N,
129 °35'55"E)

Nishisonogi Formation

Pliocene (Oligocene)

***Cardium (Nemocardium) samarangae* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2, art. 6,
p. 143 (foot note)

New name for *Cardium modestum* Adams et Reeve (1850; non
Philippi, 1849 (invalid name because of preoccupied)

Living species in Japan Sea and East China Sea

***Cardium shinjiense* Yokoyama, 1923**

Japan Jour. Geol. Geogr., vol. 2, no. 1, p. 7, pl. 2, figs. 6a-b

Holotype: GT no. ?

(Lake cliff about 300 m NWW of Jyakusan N of Fujina,
Tamayu-cho, Yatsuka-gun, Shimane Prefecture; 35 °26'N, 133 °
62'E)

Fujina Formation

Miocene

(*Clinocardium shinjiense* (Yokoyama))

***Cardium shiobareense* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 4, p. 134, pl.
20, figs. 2-5

Holotype: designated by Hatai and Nisiyama (1952) as fig. 2,
GT no. ?

(Northeastern slope of the Masagata-yama, near the head of the
valley) Shiobara-guchi (about 1 km NE off the summit,
Shiobara-machi, Nasu-gun, Tochigi Prefecture; 36 °56'20"N,
139 °51'E)

Kanomatazawa Formation

Miocene

(*Laevicardium (Trachycardium) shiobareense* (Yokoyama) by

Hatai and Nisiyama (1952))

***Cardium (Laevicardium) squalidum* Yokoyama, 1924**

Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 16, pl. 13, fig. 1

Holotype: GT no. ?

Dodaira, Misawa (Dodaira, Misawa, Iwaki City, Fukushima Prefecture; 36°54'N, 140°44'05"E)

Iwaki Formation

Miocene (Oligocene)

(*Serripes squalidum* (Yokoyama) by Hatai and Nisiyama (1952))

***Cardium taracaicum* Yokoyama, 1930**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. II, vol. 2, part 10, p. 414, pl. 77, figs. 1, 2

Syntype: UT no. ?

Higashi-sakutan, Motobuchi-gun; near Lake Tobuchi, Nagahama-gun, Sakhalin, Russia

Greenish-grey sandstone

Tertiary

(*Clinocardium tracaicum* (Yokoyama))

***Cardium tokyoensis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 51, pl. 3, figs. 12a-a'

Holotype: UT no.

Cutting along the railway at Shinagawa (Shinagawa-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa Bed (Tokyo Formation)

Pleistocene (ca. 12-70 Ka)

***Cardium (Nemocardium) torii* Nomura 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 79, pl. 2, figs. 6a-b

Holotype: IGPS no. 49000

Fusuirei Station no. 26, Sachin-sho, Shinkwa-gun, Tainan-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(*Nemocardium torii* (Nomura))

***Cardium (Laevicardium) tristiculum* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 16, pl. 3, figs. 5-7
Holotype: designated by Hatai and Nisiyama (1952) as fig. 7, GT no. ?

Numanosaku, Yamadaoka (near the Asaka coal-mine, Numanosaku, Naraha-machi, Futaba-gun, Fukushima Prefecture; 37°15'N, 140°58'03"E)

Asagai Formation

Miocene (Oligocene)

(*Nemocardium tristiculum* (Yokoyama) by Hatai and Nisiyama (1952))

***Cardium (Cerastoderma) yamasakii* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art. 6), p. 138, pl. 5, figs. 21, 24

Holotype: UK no. ?

Cliff along the Cape Mary, western part of the abandoned village Matchgar in Schmidt Peninsula, Sakhalin, Russia

Matchgar horizon 6

Miocene: *Mya cuneiformis* horizon at Mgatch, Sakhalin

(*Clinocardium yamasakii* (Makiyama))

***Caryocorbula saikawai* Kotaka, 1955**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 27, pl. 2, figs. 5, 6

Holotype: IGPS no. 74010

Upper course of the Isomatsu-gawa, Wakimoto-mura (Shiura-mura), Kitatsugaru-gun, Aomori Prefecture

Isomatsu Formation

Oligocene (early Miocene)

Caryocorbula subtumida (Nagao) reported by MacNeil (1964) from the Eocene Miyara Formation, Okinawa Prefecture

Caspidaria gouldiana septentrionalis Kuroda reported by Takayasu (1962) from the Pliocene Wakimoto Formation, Akita Prefecture

(*Cardiomya gouldiana septentrionalis* (Kuroda) by Masuda and Noda (1976))

Cavilucina (Monitilora) kitamurai (Hatai and Nisiyama) reported by Itoigawa (1957) from the Miocene Shukunohora Formation, Gifu Prefecture

Chama fragum Reeve reported by Ozaki (1958) from the Pliocene Naarai Formation, Chiba Prefecture

***Chama hayashii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 175, pl. 2, figs. 3a-b

Holotype: TKD no. 5806, Paratype: TKD no. 5807

Loc. No. 812, a right river side cliff, about 500 m upstream of the Kuna Bridge, Tonumahara, Arakawa-mura, Chichibu-gun, Saitama Prefecture

Hiranita Formation

Miocene

***Chione cassinaeformis* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 352, pl. 39, fig. 7

Holotype: GT no. ?

Hirugaya (north side of pond in the valley 500 m NW of Hirugaya, Hagima, Sagara-cho, Haibara-gun, Shizuoka Prefecture; 34°43'02"N, 138°10'07"E)

(Sagara Group)

Miocene

(Synonymous with *Ventricoloidea foveolata* (Sowerby) by Hatai and Nisiyama (1952))

***Chione casinaeformis* Yokoyama, 1927** (Synonymous with *Pitar yokoyamai* (Nagao) by Hatai and Nisiyama (1952))

***Chione chitaniana* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 352, pl. 39, fig. 13

Holotype; GT, no. ?

Tomoda (valley cliff 900 m NE of Tomoda, Kikugawa-cho, Ogasa-gun, Shizuoka Prefecture; 34°47'04"N, 138°07'02"E) (Horinouchi Formation)

Pliocene

(*Mercenaria chitaniana* (Yokoyama))

***Chione minuta* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 122, pl. 8, fig. 14

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Totsuka-ku, Yokohama City, Kanagawa Prefecture; 35°22'03"N, 139°32'05"E)

Naganuma Beds (Naganuma Formation)

Lower Musashino; Pliocene (Pleistocene, ca. 0.5 Ma)

(*Veremolpa minuta* (Yokoyama))

***Chione osyuensis* Nomura and Onisi, 1940**

Japan Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 183, pl. 18, fig. 17

Holotype: SM no. 21706

Vicinity of Adachi, Murata-machi, Shibata-gun, Miyagi Prefecture (River cliff 150 m W of bridge 500 m W of Adachi, Murata-machi, Miyagi Prefecture; 38°07'01"N, 140°42'04"E)

(Murata Formation)

Miocene

(*Mercenaria osyuensis* (Nomura and Onisi) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Chione tateiwai* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 159-160, pl. 13, figs. 5, 6

Holotype: Geol. Surv. Chosen no. 85

Kinshodo, North Korea

Mankodo Formation

Miocene

(*Protothaca tateiwai* (Makiyama))

***Chione (Gnidiella) trigona* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 184, pl. 3, figs. 5-7

Holotype: TKD no. 5771 (fig. 7), Paratype: TKD no. 5722

Loc. No. 219a, a small valley cliff, about 300 m S of Kakkaku, Kurao, Ogano-machi, Saitama Prefecture

Nenokami Sandstone of the Hikokubo Group

Oligocene (Miocene)

***Chlamys akahirensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 167, pl. 1, figs. 13a-b

Holotype: TKD no. 5619, Paratype: TKD no. 5618 (loc. No. 139)

Loc. No. 201, right river side exposure, about 70 m downstream of Gohei-bashi (bridge), Obashira, Chichibu City, Saitama Prefecture: Paratype; loc. No. 139, a several exposure of a mountain side at Kaminosawa, Rhokami-mura, Chichibu-gun, Saitama Prefecture

Nenokami Sandstone of the Hikokubo Group; Paratype, Ushikubitoge Formation

Oligocene (Miocene)

***Chlamys akitana* (Yokoyama) see *Pecten akitanus* Yokoyama, 1926**

***Chlamys (Chlamys) akustui* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 160, pl. 18, fig. 29

Holotype: IGPS no. 28293

River cliff of the Naka-gawa, south of Ogawa-machi, Nasu-gun, Tochigi Prefecture; 36°44'25"N, 140°08'25"E

Ogane Formation

Miocene

***Chlamys arakawai* (Nomura) see *Pecten arakawai* Nomura, 1935**

***Chlamys ashियाensis* (Nagao) see *Pecten ashियाensis* Nagao, 1928**

***Chlamys ('Hinnites') boniensis* Dijkstra and Matsukuma, 1993**

Venus, vol. 52, no. 3, p. 182

Holotype: NSMT-Mo 69619

Living species from Chichijima, Ogasawara Islands, Tokyo Prefecture

Recent

***Chlamys chinkopensis* Masuda and Sawada, 1961**

Japan Jour. Geol. Geogr., vol. 32, no. 1, p. 21, pl. 4, figs. 6, 7

Holotype: IGPS no. 90595 (fig. 6), Paratype, DGS nos. 3897, 3898 shifted IGPS nos. ?

Right river cliff of the Toshibetsu-gawa, about 1.5 km SE of Chinkope-toge, Imagane-machi, Setana-gun, Shiribeshi Province, Hokkaido; 4224'54"N, 14008'59"E

Setana Formation

Pliocene (lower Pleistocene)

***Chlamys cosibensis* (Yokoyama) see *Pecten cosibensis* Yokoyama, 1911**

Chlamys cosibensis cosibensis (Yokoyama) see *Pecten cosibensis* Yokoyama, 1911

***Chlamys cosibensis hanzawae* Masuda, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 35, p. 125, pl. 13, figs. 10a-15

Holotype: IGPS no. 90648 (figs. 10a-b), Paratype: DGS no. 3691, SM no. 7360

Ukibuta, Higashiyuri-mura (Higashiyuri-machi), Yuri-gun, Akita Prefecture; 39 °18'05"N, 140 °20'05"E

Sugota Formation

Miocene (middle Miocene)

Chlamys cosibensis heteroglypta (Yokoyama) see *Pecten heteroglyptus* Yokoyama, 1926

Chlamys cosibensis turpicula (Yokoyama) see *Pecten turpiculus* Yokoyama, 1925

Chlamys crassivenia (Yokoyama) see *Pecten (Chlamys) cassivenius* Yokoyama, 1929

***Chlamys daishakaensis* Masuda and Sawada, 1961**

Japan Jour. Geol. Geogr., vol. 32, no. 1, p. 23, pl. 4, figs. 8, 9

Holotype: IGPS no. 90708 (fig. 8), Paratype: IGPS no. 15410

Right stream cliff, about 2.3 km N of Daishaka Station along the Ou Line, Namioka-machi, Minamitsugaru-gun, Aomori Prefecture

Daishaka Formation

Pliocene (Pleistocene)

(Synonymus with *Chlamys tanassevitschi* (Khomenko) by Amano (1994))

***Chlamys egregius* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 138, pl. 5, figs. 7-9

Holotype: JC no. 1300018 (fig. 7)

Loc. No. 112-2, Kamigiri, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone (Toyama Formation)

Miocene

(*Kotorapecten egregius* (Itoigawa) by Masuda and Noda (1976))

Chlamys (Chlamys) foeda (Yokoyama) see *Pecten foedus* Yokoyama, 1926

***Chlamys (Chlamys) hanaishiensis* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 166, pl. 22, figs. 1, 2

Holotype: DGS no. 3935 shifted to IGPS no. 90965 (fig. 1)

Left floor of the Toshibetsu River, about 1 km SW of Pirika Station of the Setaba Line, Imagane-machi, Setana-gun, Shiribeshi Province, Hokkaido; 42 °27'28"N, 141 °11'37"E

Setana Formation
Pliocene (Pleistocene)

***Chlamys hasimotoi* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 167, pl. 19, figs. 1, 2

Holotype: DGS no. 3867 shifted to IGPS, no. 90600 (fig. 1)

Natsukawa-en, upstream of the Honbetsu River, Honbetsu-machi, Nakagawa-gun, Tokachi Province, Hokkaido; 43 °8.7'N, 144 °40'E

Rawan Conglomerate of the Okuashiyoro Formation

Pliocene

Chlamys hastata (Sowerby) *iwakiana* (Yokoyama) see *Pecten iwakianus* Yokoyama, 1925

***Chlamys hataii* Masuda and Akutsu, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 21, p. 130, pl. 20, figs. 1a-6b

Holotype: DGS no. 1370 shifted IGPS no. ?

Niiya, Tawara-mura (Kawachi-machi), Kawachi-gun, Tochigi Prefecture; 36 °37'39"N, 139 °54'06"E

Nagaoka Formation

Miocene

***Chlamys (Chlamys) hatakeyamae* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 168, pl. 18, figs. 18-20

Holotype: IGPS no. 27563

Ikatsuchi-zawa at Kanayama, Higashitakizawa, Yuri-mura (Yuri-machi), Yuri-gun, Akita Prefecture; 39 °17'37"N, 140 °10'12"E

Sugota Formation

Miocene

***Chlamys imanishii* Masuda and Sawada, 1961**

Japan Jour. Geol. Geogr., vol. 32, no. 1, p. 25, pl. 4, figs. 10a-11

Holotype: IGPS no. 72555, Paratype: DGS nos. 3875, 3876

Sea cliff at Hamada, Yokohama-mura (Yokohama-machi), Kamikita-gun, Aomori Prefecture; 41 °08'15"N, 141 °16'34"E

Hamada Formation

Pliocene (lower Pleistocene)

Chlamys (Chlamys) ingeniosa (Yokoyama) see *Pecten (Chlamys) hastatus* Sowerby var. *ingeniosa* Yokoyama, 1929

***Chlamys ingeniosa tanakai* Akiyama, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 31, p. 243, pl. 36, figs. 1-3b

Holotype: TKD no. 5334 (figs. 2a-b)

Left cliff of the Susobana River, Kawashita, Togakushi-mura, Kamiminochi-gun, Nagano Prefecture; 36 °40'8.7"N, 138 °05'46"E

Ogikubo Formation (Shigarami Formation)

Pliocene (Late Miocene by Masuda (1962) (Pliocene)
(*Chlamys tanakai Akiyama* by Masuda and Noda (1976))

Chlamys (Chlamys) inuwakaensis Ozaki, 1958

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 114, pl. 9, figs. 8, 9

Holotype: NSM no. 4414

Cape Inuwaka, Tokawa-machi, Choshi City, Chiba Prefecture
Naarai Formation

Pliocene

(*Chlamys halimensis (Makiyama)* by Masuda and Noda (1976))

Chlamys (Chlamys) ishidae Masuda, 1962

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 171, pl. 18, figs. 21-24

Holotype: DGS no. 3909 shifted to IGPS no. 90676 (fig. 21)

Left cliff of the Do River, Tsuzara, Osawano-machi, Kaminikawa-gun, Toyama Prefecture; 36 °40'09"N, 137 °12'58"E

Kashio Alternation of the Kurosedani Formation

Miocene

Chlamys islandica (Muller) reported by Kubota (1950) from the Pliocene Setana Formation, Hokkaido (non Muller, synonymous with *Chlamys nanaishiensis Masuda* by Masuda (1962))

Chlamys islandica erythrocomatua (Dall) reported by Sawada (1962) from the Pleistocene Chinkope Formation, Hokkaido

Chlamys islandica var. maruyamaensis Kubota, 1950

Cenozoic Res., no. 6, p. 98, pl. 8, fig. 58

Syntype: UH no. ? Holotype: UH no. ?

Loc. no. 150, Right cliff of the Maruyamazawa, 3.5 km ES of Higashisetana-mura (Imakane-cho); Loc. no. 152, Right cliff of the Maruyamazawa, 3.25 km SE of Hihagshisetana-mura (Imakane-cho); Loc. no. 160, 161, left cliff of the Maruyamazawa, 3.25 km SE of Higashisetana-mura (Imakane-cho); Loc. no. 261, middle course of the Soibetsu River, 2.7 km SW of Nakanokawa Station of the Hakodate Line, Yubetsu-mura (Osyananbe-cho), Setana-gun, Hokkaido

Setana Formation

Pliocene (lower Pliocene)

(*Chlamys maruyamaensis Kubota* by Masuda and Noda (1976))

Chlamys islandicus nisataiensis Otuka, 1934

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 612, pl. 47, fig. 26

Holotype: GT no. 1334

Stream-side of Nisatai valley (about 200 m SE of the bridge S of Nisatai, Ninohe City, Iwate Prefecture; 40 °17'43"N, 141 °19'24"E

Lower Kadonosawa (Kadonosawa Formation)

Miocene

(*Chlamys nisataiensis (Otuka)* by Hatai and Nisiyama (1952))

Chlamys islandica notoensis (Yokoyama) reported by Kubota (1950) from the Pleistocene Setana Formation, Hokkaido (*Nanaochlamys notoensis (Yokoyama)* by Masuda and Noda (1976))

Chlamys islandica var. pilicaensis Kubota, 1950

Cenozoic Res., no. 6, p. 97, pl. 8, fig. 56, pl. 9, figs. 69-71

Lectotype: UH no. 13544

Loc. no. 87, River side cliff at Daikoku Mine, SW of Pirika, Toshibetsu-mura (Imagane-machi), Setana-gun, Hokkaido
Setana Formation

Pliocene (Pleistocene)

(*Chlamys pilicaensis Kubota* by Masuda and Noda (1976))

Chlamys islandica var. osugii Kubota, 1950

Cenozoic Res., no. 6, p. 98, pl. 8, fig. 57

Lectotype: UH no. 13543

Loc. no. 382, upper-stream of the Yunosawa, branch of the Nakanokawa River, 3 km W of Nakanokawa Station of the Hakodate Line, Yubetsu-mura (Oshamanbe-machi), Sutsu-gun, Hokkaido

Setana Formation

Pliocene (lower Pleistocene)

Chlamys (Chlamys) itoigawae Masuda, 1962

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 172, pl. 18, figs. 25, 26

Holotype: DGS no. 3819 shifted to IGPS, no. 90538

Floor of the Toki River, about 300 m upstream of the Relay Station of Wireless Telegraph at Kamado, Mizunami City, Gifu Prefecture; 35 °24'42"N, 137 °18'58"E

Shukunohora Formation

Miocene

Chlamys iwakiana (Yokoyama) see *Pecten iwakianus Yokoyama, 1925*

Chlamys (Chlamys) iwamurensis Itoigawa, 1955

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 137, pl. 5, figs. 5, 6

Holotype: JC no. 1300046 (fig. 5), Paratype: JC nos. 1300039, 1300047

Loc. No. 111, Kamigiri, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone

Miocene

Chlamys kagamianus (Yokoyama) reported by Sawada (1962) from the Miocene Kunnui Formation, Hokkaido; see *Pecten kagamianus Yokoyama*

***Chlamys kakisakiensis tokawaensis* Ozaki, 1954**

Bull. Nat. Sci. Mus., N. S., vol. 1, no. 1 (no. 34), p. 15, pl. 9, fig. 3
Holotype: NSM no. 4310

Beach on the western end of Tokawa village, Choshi City,
Chiba Prefecture

Naarai Formation

Pliocene

(*Chlamys (Mimachalmys) tokawaensis* Ozaki by Masuda and
Noda (1976))

***Chlamys kaneharai* (Yokoyama) see *Pecten kaneharai*
Yokoyama, 1926*****Chlamys kannogawaensis* Shibata, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 231, pl. 32,
figs. 4a-b

Holotype: TKD no. 7664

About 570 m W of bridge at Chojoyagoya, Idozawa, Aone-mura
(Tsukui-machi), Tsukui-gun, Kanagawa Prefecture; 35 °
30'27.5"N, 139 °05'37"E

Misaka Series (Misaka Group)

Miocene (middle Miocene)

***Chlamys kitamurai* Kotaka, 1955**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 26, pl. 2

Holotype: IGPS no. 74009

Upper course of the Isomatsu-gawa, Wakimoto-mura
(Shiura-mura), Kitatsugaru-gun, Aomori Prefecture; 49 °04'N,
141 °19'E

Isomatsu Formation

Oligocene (lower Miocene)

(*Nanaochlamys kitamurai* (Kotaka) by Masuda (1962))

***Chlamys kotakae* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 175,
pl. 20, figs. 8, 9

Holotype: DGS no. 3832 shifted to IGPS no. 90646 (fig. 8)

Cliff of the left side valley of Kamifutamata-zawa, upper course
of Biu River, about 5.5 km NE of Biu, Niikappu-machi,
Niikappu-gun, Hidaka Province, Hokkaido; 42 °32'52"N, 142 °
26'54"E

Noya Formation

Miocene

***Chlamys kotorana* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 611, pl. 47,
fig. 25

Holotype: GT no. 1333

(West side river cliff of the Mabechi-gawa, foot of the bridge
about 150 m SE of the village office at Mainosawa, Ninohe City,
Iwate Prefecture; 40 °17'N, 141 °17'48"E)

Suenomatsuyama Formation

Lower Pliocene-Upper Miocene (middle Miocene)

***Chlamys kumanodoensis* Masuda, 1953**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 12, p. 85, pl. 8, figs.
9a-12b

Holotype: IGPS no. 90571

Hill side about 500 m W of the Kumanodo Shrine, Kumanodo,
Natori City, Miyagi Prefecture; 38 °12'09"N, 140 °50'30"E

Moniwa Formation

Miocene (lower middle Miocene)

***Chlamys (Chlamys) lioica shigaramiensis* Amano and
Karasawa, 1986**

Monogr. Mizunami Fossil Mus., no. 6, p. 44, pl. 4, figs. 1, 3-4, 7,
9-11, 13

Holotype: JUE no. 15037, Paratype: JUE nos. 15038-15041

Road-side cliff at about 500 m south of the Arakurayama
Camping Ground, near Motai, Togakushi-mura,
Kamiminochi-gun, Nagano Prefecture

Shigarami Formation

Pliocene

***Chlamys (Chlamys) macro-halimensis* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 115, pl. 11,
figs. 1, 15, 16

Holotype: NSM no. 4415 (figs. 15, 16)

Cape Inuwaka, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

(*Chlamys (Chlamys) macrohalimensis* Ozaki)***Chlamys matchgarensis* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art.
6), p. 133, pl. 3, figs. 7, 8

Holotype: UK no. ?

Cliff along the Cape Mary, eastern part of the abandoned village
Matchgar in Schmidt Peninsula, Skhalin, Russia

Macigar horizon 5 (Machigar Formation)

Miocene?

***Chlamys (Miyagipecten) matsumoriensis* (Masuda)
(*Miyagipecten matsumoriensis* Masuda by Masuda and Noda
(1976))*****Chlamys (Chlamys) matsunori* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 176,
pl. 19, fig. 20, pl. 21, figs. 2-4

Holotype: DGS no. 3831 shifted to IGPS no. 90627 (fig. 3)

Cliff of the left side valley of Kamifutamata-zawa, upper course
of the Biu River, about 5.5 km NE of Biu, Niikappu-machi,
Niikappu-gun, Hidaka Province, Hokkaido; 42 °32'52"N, 142 °
26'54"E

Noya Formation

Miocene

***Chlamys minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 266, pl. 1, figs. 6a-7

Holotype: ESN no. 20007 (figs. 6a-7), Paratype: ESN no. 20008 Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Chlamys misakiensis* Katto, 1960**

Res. Rep., Kochi Univ., vol. 9, no. 9, p. 107, pl. 1, fig. 1

Holotype: Kochi Univ., no. ?

Ueno, Misaki, Tosashimizu City, Kochi Prefecture; 32°46'N, 132°52'E

Misaki Formation

Oligocene

Chlamys miurensis* (Yokoyama) see *Pecten miurensis* Yokoyama, 1920**Chlamys miyatokoensis* (Nomura and Hatai) see *Pecten (Chlamys) miyatokoensis* Nomura and Hatai, 1937*****Chlamys (Chlamys) miyatokoensis matumori* (Nomura and Hatai) see *Pecten (Chlamys) miyatokoensis matumori* Nomura and Hatai, 1937*****Chlamys (Chlamys) nagaoui* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 33, no. 2, p. 179, pl. 20, figs. 4-6

Holotype: IGPS no. 36440 (figs. 4, 5)

Beach, west of the Hachiman-zaki, about 300 m N of Wakita, Wakamatsu City, Fukuoka Prefecture; 33°55'52"N, 130°44'38"E

Wakita Formation

Oligocene

Chlamys (Mimachalmys) namigataensis* (Ozaki) see *Pecten (Chlamys) namigataensis* Ozaki, 1956**Chlamys (Chlamys) niikappuensis* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 33, no. 2, p. 180, pl. 21, fig. 5

Holotype: DGS no. 3835 shifted to IGPS no. 90536

Cliff of the left side valley of the Kamifutamata-zawa, upper course of the Biu River, about 5.5 km NE of Biu, Niikappu-machi, Niikappu-gun, Hidaka Province, Hokkaido; 42°32'52"N, 142°26'54"E

Noya Formation

Miocene

Chlamys (Chlamys) nipponensis* Kuroda reported by Masuda (1962) from the Pleistocene Shibikawa Formation, Akita Prefecture**Chlamys nisataiensis* Otuka see *Chlamys islandicus nisataiensis* Otuka, 1934*****Chlamys (Mimachlamys) nishidae* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 71, pl. 1, figs. 9a-b

Holotype: JC no. 1400009

Tsuzara (Loc. No. 21), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene (N8 Zone of Blow (1969))

***Chlamys obesa* Akiyama, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 31, p. 245, pl. 36, figs. 4a-6b

Holotype: TKD no. 5351 (figs. 4a-b) (TKD no. 5334 by Masuda (1962))

Left cliff of the Susubana River, Kawashita, Togakushi-mura, Kamiminochi-gun, Nagano Prefecture; 36°40'8.7"N, 138°05'46"E

Ogikubo Formation (Shigarami Formation)

Pliocene

(Synonymus with *Chlamys tanakai* Akiyama by Masuda (1962))

***Chlamys oidensis* Hatai, Masuda and Noda, 1974**

Saito Ho-on Kai Mus., Res. Bull., no. 43, p. 36, pl. 4, figs. 1a-2

Holotype: IGPS no. 64419, Paratype, IGPS no. 94427

Oido, Motowakuya, Wakuya-machi, Toda-gun, Miyagi Prefecture; 38°23'01"N, 151°08'04"E: Paratype, North of Hitokita, Sendai City, Miyagi Prefecture

Oide Formation and Moniwa Formation (Paratype)

Miocene

(*Chlamys (Mimachalmys) oidensis* Hatai, Masuda and Noda by Masuda and Noda (1976))

***Chlamys onishibetsuensis* Kubota, 1951**

Miner. and Geol., vol. 4, nos. 5-6, p. 158, text-fig. 1

Holotype: UH no. ?

Magaribuchi, Wakkanai City, Hokkaido

Onishibetsu Formation

Oligocene (Miocene)

(? *Mizuhopecten kimurai* (Yokoyama))

***Chlamys osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 71, pl. 1, figs. 7, 8

Holotype: JC no. 1400007

Tsuzara (Loc. No. 20), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

(*Gloripallium izurensis* Masuda by Masuda (1962))

***Chlamys osugii* Kubota** see *Chlamys islandica* var. *osugii* Kubota, 1950

***Chlamys otsukae* Masuda and Sawada, 1961**

Japan Jour. Geol. Geogr., vol. 32, no. 1, p. 19, pl. 4, figs. 1a-5
Holotype: IGPS no. 90607 (figs. 1a-b), Paratype, DGS nos. 1378, 1380 shifted IGPS nos. ?
Road-side exposure at Oido, Motowakuya, Wakuya-machi, Toda-gun, Miyagi Prefecture; 38°32'01"N, 141°08'04"E:
Paratype, Road-side cliff at Iwaya, about 750 m W of Nanao Station of Nanao Line, Nanao City, Ishikawa Prefecture
Oido Formation and Nanao Formation (Paratype)
Miocene

***Chlamys (Chlamys) pilicaensis* Kubota** see *Chlamys islandica* var. *pilicaensis* Kubota, 1950

***Chlamys (Chlamys) r-endoi* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 115, pl. 11, figs. 17, 18
Holotype: NSM no. 4416
Beach at the western end of Tokawa-machi, Choshi City, Chiba Prefecture
Naarai Formation
Pliocene
(*Chlamys (Chlamys) rendoi* Ozaki by Masuda and Noda (1976))

***Chlamys protomollita* (Nomura)** see *Pecten protomollita* Nomura, 1935

***Chlamys (Mirapecton) robustus* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 116, pl. 12, figs. 1, 2
Holotype: NSM no. 4417
Beach at western end of Tokawa-machi, Choshi City, Chiba Prefecture
Naarai Formation
Pliocene
(Synonymous with *Chlamys (Chlamys) foeda* (Yokoyama) by Masuda and Noda (1976))

***Chlamys (Chlamys) sakitoensis* (Nagao)** see *Pecten sakitoensis* Nagao, 1928

***Chlamys (Mimachlamys) satoi* (Yokoyama)** see *Pecten (Chlamys) satoi* Yokoyama, 1928

***Chlamys (s. s.) sawanensis* Omori, 1977**

Bull. Sado Mus., no. 7, p. 68, pl. 2, figs. 7a-b
Holotype: SM no. ? (Sado Museum)
Kaidate, Sawane, Sawada-machi, Sado-gun, Niigata Prefecture
Kaidate Formation (Sawane Formation)
Pliocene

***Chlamys (Chlamys) sendaiensis* Masuda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol), vol. 33, no. 2, p. 184, pl. 21, figs. 8, 9
Holotype: SHM no. 2208 (fig. 9)
Goroku cliff along the right bank of the Hirose River, in the western end of Sendai City (Aoba-kum Sendai City), Miyagi Prefecture; 38°16'N, 140°49'E
Tatsunokuchi Formation
Pliocene

***Chlamys (Chlamys) setsukoeae* Masuda, 1962**

Saito Ho-on Kai Mus., Res. Bull., no. 31, p. 20, pl. 1, figs. 1a-8, pl. 2, figs. 6-8
Holotype: DGS no. 4230 shifted to IGPS no. 90477 (figs. 1a-d)
Road-side cutting, about 900 m WSW of the Kenyoshi Station of the Tohoku Main Line, Kenyoshi, Nagawa-machi, Sannohe-gun, Aomori Prefecture; 40°26'33"N, 141°20'24"E
Togawa Formation
Pliocene

***Chlamys (Chlamys) shirahamaensis* (Nomura and Niino)** see *Pecten shirahamaensis* Nomura and Niino, 1932

***Chlamys shitakaraensis* Honda, 1980**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 117, p. 258, pl. 30, figs. 1, 2, 5, 6
Holotype: IGPS no. 95439, Paratype: IGPS nos. 96213-96215
Loc. no. B-06, small NE tributary of the Urahorogawa, about 3.8 km N of Rushin, Urahoromachi, Tokachi-gun, Hokkaido; 42°56'55"N, 143°40'00"E: Paratype loc. no. SK-26, a river side cliff along the upper-stream of the Shakubetsugawa, Ombetsu-machi, Shiranuka-gun; 42°54'36"N, 143°48'00"E: SK-3, a river bed of the Chambetsugawa, Ombetsu-machi, Shiranuka-gun; 43°00'21"N, 143°49'53"E: SK-28, about 25 m lower stream of SK-27 (a river side cliff along the upper-stream of the Shakubetsugawa, Ombetsu-machi, Shiranuka-gun, Hokkaido; 42°54'36"N, 143°48'00"E
Shitakara Formation
Oligocene (Eocene)

***Chlamys swiftii* (Bernardi)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture; *Swiftpecten swiftii* (Bernardi)

***Chlamys swiftii turprculus* (Yokoyama)** see *Pecten turprculus* Yokoyama, 1925

***Chlamys tamurae* Masuda and Sawada, 1961**

Japan Jour. Geol. Geogr., vol. 32, no. 1, p. 27, pl. 4, figs. 12a-15
Holotype: DGS no. 3862 shifted to IGPS no. 90550 (figs. 12a-b), Paratype, DGS no. 3863 shifted to IGPS no. ?
Small hill-side exposure at Maruyama, Kitahiyama-machi, Setana-gun, Shiribeshi Province, Hokkaido; 40°23'56"N, 139°54'55"E

Setana Formation
Pliocene (Pleistocene)

***Chlamys (Chlamys) tanakai* Akiyama** see ***Chlamys ingeniosa tanakai* Akiyama, 1958**

Chlamys (Leochlmays) tanassevitschi* (Khomenko, 1934)** reported by Amano (1994) from the Pleistocene Setana Formation, Hokkaido and Sawane Formation, Niigata Prefecture, that were previously identified as ***Chlamys daishakaensis* Masud and Sawada, 1961**; **Amano (1994)** also described ***C. daishakaensis is synonymous with ***C. tanassevitschi***, so the former species was preoccupied)

***Circe tokudai* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 240, pl. 2, fig. 3

Holotype: GT no. ?, Lectotype: UMUT no. CM26148

In the Yuriki-zawa, a branch of the Urashima-gawa, Numata-mura (Numata-machi), Uryu-gun, Ishikari Province, Hokkaido (precise locality unknown by Hatai and Nisiyama (1952))

(Upper Numata Formation), Uryu Group
Miocene (Eocene)

(***Corbicula atrata tokudai* (Yokoyama)** by Suzuki (1941))

***Circe (Circe) traingulus* Kotaka and Noda, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 137, pl. 25, figs. 5, 6, text-fig. 2-2

Holotype: IGPS no. 95085

Road-side cliff, about 500 m S of Amuntay, western part of Bondoc Peninsula, Philippines

Pitogo Formation
Miocene

***Claibornites (Saxolucina) quinquangulus* Uozumi, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 19, p. 77, pl. 12, figs. 6a-b

Holotype: UH no. 11363

Upper-stream of the Katsurazawa, a branch of the Sorachi-gawa, Akabira-machi, Sorachi-gun (Aakabira City), Ishikari Province, Hokkaido

Wakkanabe Formation
Eocene

(***Saxolucina quinquangulus* (Uozumi)** by Masuda and Noda (1976))

***Clavagella japonica* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 386, pl. 44, figs. 11, 12

Holotype: GT no. ?

Anden (Sea cliff near Anden, Oga City, Akita Prefecture; 39° 58'05"N, 139° 51'05"E)

(Shibikawa Formation)

Pliocene (Pleistocene)

***Clementia aiutiensis* Nomura and Hatai, 1936**

Japan Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 280, pl. 33, fig. 5

Holotype: SM no. 8482

Middle course of the Komatazawa, a tributary of the Aiuchi River, Aiuchi-mura (Shiura-mura), Kitatsugaru-gun, Aomori Prefecture; 41° 04'N, 140° 22'06"E

Isomatsu Formation
Oligocene (early Miocene)

***Clementia brevitesta* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 56, pl. 6, fig. 1

Holotype: SM 6054

Hotatebuchi, Hitotsumori, Akaishi-mura (Iwasaki-mura), Nishitsugaru-gun, Aomori Prefecture; 40° 40'N, 140° 38'08"N

Tanosawa Formation
Miocene

(***Mercenaria brevitesta* (Nomura)** by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Clementia hanzawai* Hatai and Nisiyama, 1952**

Sci. Re., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 46; Type as ***Clementia speciosa***, Yokoyama (1925; Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 3, p. 119, pl. 14, fig. 7)

Holotype: UT no. ?

Obashira, Chichibu Basin (Chichibu City), Saitama Prefecture
Ogano Formation

Oligocene (early Miocene)

***Clementia iizukai* (Yokoyama)** see ***Mertrix iizukai* Yokoyama, 1925**; ***Compsomyax iizukai* (Yokoyama)** by Hatai and Noda (1976)

***Clementia japonica* Masuda, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 20, p. 121, pl. 19, fig. 8

Holotype: DGS no. 1382 shifted to IGPS no. 90880

Tokunari, Machino-machi, Fugeshi-gun (Wajima City), Ishikawa Prefecture

Higashi-Innai Formation
Miocene (N8 Zone of Blow (1969))

***Clementia (Clementia) moriyensis* Tanaka, 1961**

Bull. Fac. Educ., Shinshu Univ., no. 12, p. 79, pl. 2, figs. 33, 34

Holotype: SU no. 729 (fig. 33), Paratype: SU no. 730

Loc. no. A2, small cliff at the southern foot of Karasu-yama, Katakura, Fujisawa-mura (Takato-machi), Kamiina-gun, Nagano Prefecture; 35° 56'14"N, 138° 06'24"E; Paratype, Loc. no. A6, small cliff at the bank of Ushiroyama public hall, Ushiroyama, Konami-ku, Suwa City, Nagano Prefecture; 35° 58'41"N, 138° 04'08"E

Moriya Formation
Miocene

***Clementia nakamurai* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 5, pt. 1, p. 14, pl. 1, fig. 4

Holotype: UT no. 3994 (correct no. 3995), Paratype: UT no. 3994

Operculina sandstone exposed NW of Kureti, NE of Mt. Huzi, Ihara district (Fujigawa-machi, Ihara-gun), Shizuoka Prefecture
Siroyama Sandstone Beds
Miocene

***Clementia nakosoensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 46; Type as *Clementia speciosa*, Yokoyama (1925; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 21, pl. 1, fig. 6)

Holotype: UT no. ?

Railway cutting at Nakoso (Iwaki City), Fukushima Prefecture
Nakayama Formation
Miocene

(*Compsomyx nakosoensis* (Kamada))

Clementia papyracea Gray reported by Ogasawara and Tanai (1952) from the Miocene Kamigo (Oyama) Formation, Yamagata Prefecture

***Clemetia speciosa* Yokoyama, 1923**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 2, p. 15, pl. 12, figs. 14, 15

Holotype: GT no. ?

Exposure, 4 km S of Mori (Totomi-mori, Mori-machi), Totomi (Valley 350 m NW of Dainichi, Fukuroi City Shizuoka Prefecture; 34°48'07"N, 137°56'00"E)

Dainichi Formation

Pliocene

(Synonymous with *Clementia vathheleti* Mabilie by Masuda and Noda (1976))

***Clementia (Egesta) tosaensis* Katto, 1960**

Res. Rep., Kochi Univ., vol. 9, no. 9, p. 108, pl. 1, fig. 3

Holotype: Kochi Univ. no. ?

Ueno, Misaki, Tosayamada City, Kochi Prefecture

Misaki Formation

Oligocene

Clementia vatheleti Mabilie reported by Kubota (1952) from the Miocene Tsukiyoshi Formation, Gifu Prefecture

***Clinocardium andoi* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 24, pl. 7, figs. 9a-b, pl. 8, figs. 1-4

Holotype: MFM no. 10029, Paratype: MFM nos. 10030-10032

Togari-ST. KA-1, Akeyo-cho, Mizunami City, Gifu Prefecture (Loc. no. 78)

Yamanouchi Member of the Mizunami Group

Miocene

Clinocardium asagaiense (Makiyama) see *Cardium asagaiense* Makiyama, 1934

***Clinocardium asagaiense arakawae* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 105, pl. 10, figs. 15-17

Holotype: IGPS no. 79383

Mukaida, Yumoto-machi, Joban City (Iwaki City), Fukushima Prefecture

Asagai Formation

Oligocene

***Clinocardium asagaiense makiyamae* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 104, pl. 10, figs. 18-21

Holotype: IGPS no. 15800 (fig. 18)

Nabezuka, Hirono-machi, Futaba-gun, Fukushima Prefecture

Asagai Formation

Oligocene

Clinocardium californiense (Deshayes); *Cardium californiense* Deshayes, 1839

***Clinocardium chikagawaense* Kotaka, 1950**

Short Pap., Inst. Geol. Paleont., Tohoku Univ., no. 2, p. 46, pl. 5, figs. 1-6

Holotype: IGPS no. 72999 (figs. 1, 2, 5), Paratype: IGPS nos. 72999

The sea cliff at the outlet of the Chikagawa River at Chikagawa, Tanabu-machi, Shimokita-gun (Mutsu City), Aomori Prefecture; 41°11'N, 141°17'10"E

Hamada Formation

Pliocene (lower Pleistocene)

Clinocardium fastosum (Yokoyama) see *Cardium fastosum* Yokoyama, 1927

***Clinocardium hataii* Hayasaka, 1956**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 18, pl. 2, figs. 3a-b

Holotype: IGPS no. 77375, Paratype: IGPS no. 77378

Loc. No. 1, Cliff of the Takasegawa River west of Takakura, about 5 km SW of the Namie-machi Railroad station on the Joban line, Namie-machi, Futaba-gun, Fukushima Prefecture

Ishiguma Formation

Pliocene

Clinocardium iwasiroense (Nomura) see *Cardium iwasiroensis* Nomura, 1935

***Clinocardium iwatensis* Chinzei, 1959**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, vol. 12, pt. 1, p. 125, pl. 11, figs. 9-10

Holotype: CM no. 8572 (fig. 9), Paratype: CM no. 8573 (fig. 10), 8574

Loc. No. 2, a river-side cliff, 150 m S of Ochiai, Kintaichi-mura, Ninohe-gun (Ninohe City), Iwate Prefecture
Kubo Formation
Pliocene

***Clinocardium mutuense* Nomura and Hatai** see *Cardium mutuense* Nomura and Hatai, 1936

“*Clinocardium*” nomurai Hayasaka, 1956

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 18, pl. 2, figs. 4a-b
Holotype: IGPS no. 77376

Loc. 2, Path side cutting at Onoda, about 2.5 km NE of the Loc. No. 1 (Cliff of the Takasegawa River west of Takakura, about 5 km SW of the Namie-machi Railroad station on the Joban line), Namie-machi, Futaba-gun, Fukushima Prefecture
Ishiguma Formation
Pliocene

***Clinocardium okushirense* Uozumi and Fujie, 1966**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 13, no. 2, p. 150, pl. 12, figs. 4-6

Holotype: UH no. 13732 (fig. 3), Paratype: UH no. 13733

Cliff along the river, about 400 m upperstream of the Miyatsu-gawa, Miyatsu, Okushiri Island (Okushiri-cho, Hiyama Province), Hokkaido
Tsurikake Formation
Miocene

***Clinocardium omagariense* Honda, 1981**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 122, p. 130, pl. 15, figs. 1-13

Holotype: IGPS no. 95740-1, Paratype: IGPS nos. 95740-2, -3, -5, -6

Loc. no. OM-32, riverside cliff along the Urahorogawa, about 1250 m NNE from the junction between the Urahorogawa and the Tokomurogawa, Urahoromachi, Tokachi-gun, Hokkaido; 42°52'24"N, 143°40'32"E

Omagari Formation
Oligocene

***Clinocardium (Keenocardium) ponchibaense* Amano, 1983**

Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 4, p. 47, pl. 3, figs. 1, 3, 12

Holotype: IGUT no. 15298 (Loc. no. T63), Paratype: IGUT no. 15299-1 (Loc. no. T24), 15300 (Loc. no. T24), 15302 (Loc. no. T45)

Road-side cliff at about 1.6 km upstream of the Sekiyu-zawa-minami-zawa, Hokuryu-cho, Uryu-gun, Rumoi Province, Hokkaido, Loc. no. T24: River floor of the Rumoi River, just east of the Owada Crematory (Rumoi-shinkawa of Hashimoto, 1950), Rumoi City, Hokkaido, Loc. no. T45: Road-side cliff near a large water fall at about 1.3 km up of the Ponchiba-manami-sawa, Rumoi City, Hokkaido
Togeshita Formation

Late Miocene

***Clinocardium pseudofastosum* (Nomura)** see *Cardium pseudofastosum* Nomura, 1937

***Clinocardium shinjiense* (Yokoyama)** see *Cardium shinjiense* Yokoyama, 1923

***Clinocardium subdecussatum* Shuto, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 37, p. 216, pl. 25, figs. 9, 10, 12, 20

Holotype: GKL no. 4777 (fig. 12), Paratype: GKL no. 4776, 4781, 4782 and 4784

About 500 m NW of Yamaji (MI-5061), Mino-mura, Koyu-gun (Saito City), Miyazaki Prefecture
Tsuma Member (lowest part) of the Koyu Formation
Miocene

***Clinocardium taracaicum* (Yokoyama)** reported by Sakagami et al. (1966) from the Pliocene (Pleistocene) Tomikawa Formation, Hokkaido; see *Cardium taracaicum* Yokoyama, 1930

***Cnesterium notabilis* (Yokoyama)** see *Yoldia notabilis* Yokoyama, 1922

***Codakia kitamurai* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 91, pl. 24, figs. 5, 6

Holotype: GS no. 72526

Sukunohora, Hiyoshi-mura, Toki-gun (Hiyoshi-cho, Mizunami City), Gifu Prefecture; 35°24'06"N, 137°16'E

Hiyoshi Formation
Miocene

***Codakia (Jagonia) okinawaensis* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 241 (13), pl. 11 (1), figs. 9a-b

Holotype: IGPS no. 51319

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)
Pliocene (Pleistocene)

***Codakia semipolita* Nomura 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 73, pl. 1, figs. 9a-10b

Holotype: IGPS no. 45086

The Upper course of Sairyokyo, Sachin-sho, Shinkawa-gun, Tainan-shu, Taiwan

Byoritsu Beds
Pliocene (Pleistocene)

***Coelomactra iwatensis* (Hatai, 1940)** reported by Matsubara (1997; Saito Ho-on Kai Mus. Res. Bull., no. 65, p. 15); see

***Spisula iwatensis* Hatai, 1940**

***Comsomyax iizukai* (Yokoyama) see *Meretrix iizukai* Yokoyama, 1925**

***Comtopallium tayamai* (Nomura and Niino) see *Pecten tayamai* Nomura and Niino, 1932**

***Conchocele bisecta* (Conrad) reported by Aoki (1954) from the Miocene Kabeya Formation, Fukushima Prefecture (*Thyasira bisecta* (Conrad))**

***Conchocele compacta minor* Omori, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 13, no. 20, p. 90, pl. 7, figs. 1a-4b

Holotype: TKD no. 7678 (figs. 1a-b)

Nanatsuishi, Shimogo, Oyamada-mura (Bato-machi), Nasu-gun, Tochigi Prefecture
Kobana Formation
Miocene

***Conchocele disjuncta* Gabb reported by Kochibe (1882) from the Miocene Hatsuzaki (Kokorura) Formation, Ibaraki Prefecture**

***Conchocele inflata* (Yabe and Nomura) reported by Aoki (1954) from the Miocene Kabeya Formation, Fukushima Prefecture**

***Conchocele nipponica* (Yabe and Nomura) reported by Tanaka (1959) from the Miocene Bessho Formation, Nagano Prefecture; see *Thyasira bisecta* var. *nipponica* Yabe and Nomura, 1925**

***Coralichlamys shigemai* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 51, pl. 3, fig. 2

Holotype: TKD no. 10109

Loc. No. 2, Michinosawa, Oyamada-shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture; 36°46'50"N, 140°13'10"E.

Kobana Formation

Miocene

(*Chlamys arakawai* (Nomura) by Masuda and Noda (1976))

***Corbicula hizenensis* Ueji, 1934**

Venus, vol. 4, no. 6, p. 344-345, pl. 5, fig. 3, pl. 6, figs. 9-11

Holotype: JC no. ? (fig. 9), Paratype: JC no. ? (pl. 5, fig. 3, pl. 6, fig. 11)

Utamura Shikamachi-tyo (cho), Kitamatsuura-gun, Nagasaki Prefecture

Fukui Formation

Miocene

***Corbicula (Batissa) hukayai* Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., ser. 4, vol. 7, no. 1, p. 26, pl. 4, figs. 10-17

Holotype: HU no. 9311

Nayosi-mura, Nayosi-gun, South Sakhalin, Russia

Nayoshi Formation of the Naibuchi Group

Tertiary

***Corbicula (Corbicula) kotakai* Honda, 1981**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 121, p. 22, pl. 2, figs. 6, 9, 10, 13-17

Holotype: IGPS no. 96758, Paratype: IGPS nos. 96757-1, -2, -3, -4

Loc. no. YB-10, river side cliff along the Rubeshube-zawa, a tributary of the Chokubetsu-gawa, Urahoro-machi, Tokachi-gun, Hokkaido; 42°52'47"N, 143°47'13"E

Yubetsu Formation

Oligocene (Eocene?)

***Corbicula (Cyrenobatissa) mirabilis* (Nagao) see *Cyrena mirabilis* Nagao, 1928**

***Corbicula (Cyrenobatissa) muratai* (Nagao and Otatsume) see *Batissa muratai* Nagao and Otatsume, 1943**

***Corbicula (Batissa) nagaoui* Suzuki see *Batissa nagaoui* Suzuki, 1941**

***Corbicula nakayamana* Ueji, 1934**

Venus, vol. 4, no. 6, p. 346-347, pl. 7, figs. 14, 15

Holotype: JC no. ? (fig. 15), Paratype: JC no. ? (fig. 14)

Utamura Shikamachi-tyo (cho), Kitamatsuura-gun, Nagasaki Prefecture

Fukui Formation

Miocene

***Corbicula (Cyrenobatissa) nisikawai* (Otatsume) see *Batissa nisikawai* Otatsume, 1943**

***Corbicula sitakaraensis* Suzuki 1941**

Japan. Jour. Geol. Geogr., vol. 18, nos. 1-2, p. 57, pl. 4, figs. 1a-b

Karisyo, Shiranuka-machi, Shiranuka-gun, Kushiro Province, Hokkaido

Shitakara Formation

Oligocene

***Corbicula sunagawaensis* Nagao and Otatsume, 1943**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 9, pl. 3 (3), figs. 10, 10a

Kamisunagawa Colliery, Sunagawa-mati, Sorachi-gun (Sunagawa City), Ishikari Province, Hokkaido

Wakkanabe Beds (Wakkanabe Formation)

Paleogene (Eocene)

***Corbicula takasago* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 69, pl. 2, figs. 1a-2b

Holotype: IGPS no. 45079

Wangwa, Station no. 34, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

Corbicula tokudai* (Yokoyama) see *Circe tokudai* Yokoyama, 1932**Corbula iburica* Yokoyama, 1931**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 194, pl. 11, fig. 8

Holotype: GT no. ?

Junction of the Shirkerepe with the Mukawa, Iburu (Probably the junction of a tributary and the Mukawa, a short distance SW of Ororropa, Hobetsu-mura (Hobetsu-cho), Yufutsu-gun, Iburu Province, Hokkaido; 42°53'16"N, 142°15'06"E

(Kawabata Formation)

Miocene

***Corbula (Cynaecorbula) kyushuensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 116, pl. 21, fig. 16

Lectotype: designated by Hatai and Nisiyama (1952), GS no. 35834

(Road-side cutting along the sea-shore about 550 m W of the Akase railway station of the Misumi Line), Uto City, Kumamoto Prefecture; 32°39'N, 130°30'20"E

Shiratake Formation

Lower Eocene

(*Aloides kyushuensis* (Nagao) by Hatai and Nisiyama (1952))

***Corbula peregrina* Yokoyama, 1923 (1924)**

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 55, pl. 7 (misprinted for 6), figs. 9, 9a

Holotype: designated by Hatai and Nisiyama (1952), GT no. ?

Wave cut beach on the southeastern side of Fujishima (Nishitonda-mura, Nisimuro-gun, Wakayama Prefecture; 33°41'03"N, 135°22'31"E)

Fujishima Formation

Lower Pliocene (Miocene)

(*Aloides (Cuneocorbula) peregrina* (Yokoyama) by Hatai and Nisiyama (1952))

***Corbula pumpellyi* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 239, pl. 2, fig. 6

Holotype: GT no. ?

The Nakayama-zawa, a branch of the Shisen-gawa, Uryu-gun (in a valley a branch of the Shisenosawa, a short distance E of the bridge at NE of Horoshin Station, Numata-cho, Uryu-gun,

Ishikari Province, Hokkaido.

(Rumoe Formation)

Miocene

(*Aloides pumpellyi* (Yokoyama) by Hatai and Nisiyama (1952))

***Corbula (s. s.) subtumida* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 115, pl. 22, fig. 6

Lectotype: designated by Hatai and Nisiyama (1952), GS no. 35828

(Sea cliff W of the hill (48 m) about 250 m N of) Takesaki, Koyagi-jima, Koyagi-cho, Nishisonogi-gun, Nagasaki Prefecture (32°49'34"N, 129°48'16"E)

(Futagojima Formation)

Eocene

***Corbula succincta* Yokoyama, 1923 (1924)**

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 56, pl. 7 (misprinted for pl. 6), fig. 3

Holotype: designated by Hatai and Nisiyama (1952), GT no. ?

Fujishima (Wave-cut beach on the southeastern side of Fujishima, Shirahama-cho, Nisimuro-gun, Wakayama Prefecture; 33°41'03"N, 135°22'31"E)

Fujishima Formation

Lower Pliocene (Miocene)

(*Aloides succincta* (Yokoyama) by Hatai and Nisiyama (1952))

***Corbula (Corbula) taiwanensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 106, pl. 3, figs. 10a-11b

Holotype: IGPS no. 48966 (fig. 10a-b), Paratype: IGPS no. ? (figs. 11a-b)

Wangwa, Station no. 18, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(*Anisocorbula taiwanensis* (Nomura))

***Corbula tanabensis* Yokoyama, 1923 (1924)**

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 44, pl. 7 (misprinted for pl. 6), figs. 8, 8a

Holotype: designated by Hatai and Nisiyama (1952), GT no. ?

Fujishima (Wave-cut beach on the southeastern side of Fujishima, Shirahama-cho, Nisimuro-gun, Wakayama Prefecture; 33°41'03"N, 135°22'31"E)

(Fujishima Formation)

Lower Pliocene (Miocene)

(*Aloides (Cuneocorbula) tanabensis* (Yokoyama) by Hatai and Nisiyama 1952))

***Corbula tsukaharai* Yokoyama, 1923 (1924)**

Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 55, pl. 7 (misprinted for pl. 6), figs. 14a-b

Fujishima (Wave-cut beach on the southeastern side of Fujishima, Shirahama-cho, Nisimuro-gun, Wakayama

Prefecture; 33 °41'03"N, 135 °22'31"E)

(Fujishima Formation)

Lower Pliocene (Miocene)

(*Aloides (Cuneocorbula) peregrina* (Yokoyama) by Hatai and Nisiyama 81952))

***Corbula tosana* Yokoyama, 1929**

Imp. Geol. Surv. Japan, Rep., no. 104, p. 15, pl. 8, fig. 1

Holotype: designated by Hatai and Nisiyama (1952), GT no. ?

Konomine (Near the junction of the tributary and the small river, a short distance E of the road at Todani, N of Tonohama, Yasuda-machi, Aki-gun, Kochi Prefecture; 33 °26'43"N, 135 °58'21"E)

(Konomine Formation)

Pliocene

(*Anisocorbula tosana* (Yokoyama) by Hatai and Nisiyama (1952))

***Costacallista shikokuensis* Katto, 1960**

Res. Rep., Kochi Univ., vol. 9, no. 9, p. 109, pl. 1, fig. 4

Holotype: Kochi Univ., no. ?

Ueno, Misaki, Tosashimizu City, Kochi Prefecture

Misaki Formation

Oligocene

Costanuculana husamaru (Nomura) reported by Ozaki (1958) from the Pliocene Iioka Formation, Chiba Prefecture; *Nuculana (Jupitria) husamaru* Nomura, 1940 (Rec. Oceanogr. Works, Japan, vol. 12, no. 1, p. 89, pl. 1, figs. 5a-b; described n. sp. based on living specimen obtained from St. 85 (130-170 m depth) off Boso Peninsula)

***Crassatella fusca* Yokoyama, 1911**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 8, pl. 2, figs. 3a-b

Lectotype: designated by Hatai and Nisiyama (1952), GT no. ?

In the shaft of colliery in the Manda Mine (about 150 m NE of the large pond and about 700 m E of the contact point of the two main roads and Manda), Arao City, Kumamoto Prefecture; 32 °59'50"N, 130 °27'04"E)

Yotsuyama Formation

Upper Eocene

(*Crassatellites nipponensis* Yokoyama; *C. fusca* was preoccupied by Yokoyama, 1928 by Hatai and Nisiyama (1952))

***Crassatella oblongata* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 142, pl. 11, figs. 8, 9

Holotype: GT no. ?

(Sea cliff of Shiba, Kanazawa-machi, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 °38'06"E)

Koshiba Beds (Koshiba Formation)

Pliocene (Pleistocene)

***Crassatella pauxilla* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 3, p. 122, pl. 15, fig. 8

Holotype: designated by Hatai and Nisiyama (1952), GT no. ?

Obashira (Northern foot of the hill along the Ara-kawa, about 200 m NW of the temple at Takinoue, Kagemori-mura (Chichibu City), Saitama Prefecture; 35 °58'45"N, 139 °30'48"E)

(Tsuyako Formation)

Pliocene (Oligocene by Hataia and Nisiyama (1952)) (early Miocece)

(*Crassatellites pauxilla* (Yokoyama) by Hatai and Nisiyama (1952))

***Crassatella uchidana* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 356, pl. 39, fig. 6

Holotype: GT no. ?

Mitare (Exposure of road-side about 300 m SW of Mitare, Awamoto-mura, Ogasa-gun, Shizuoka Prefecture; 34 °47'02"N, 138 °01'08"E) (Mitare, Kakegawa City, Shizuoka Prefecture)

Uchida Formation (Sagara Group ?)

Pliocene (late Miocene ?)

(*Crassatellites uchidana* (Yokoyama) by Hatai and Nisiyama (1952))

***Crassatellites asakuraensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 49, pl. 2, fig. 22

Holotype: GS no. 36258

The Hoshuyama Mine (about 200 m S of the bridge E of Kawamagari, and about 600 m W of the village office at Daigoji, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture (33 °23'36"N, 130 °52'14"E)

Doshi Formation

Upper Eocene

***Crassatellites (Euceassatella ?) elongata* Mizuno, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 6, p. 190, pl. 17, fig. 3

Holotype: TK no. ?

Takamine and Yokoura, Sakito-cho, Nishisonogi-gun, Nagasaki Prefecture

Fukuura Tuff of the Oshima Formation

Paleogene

(*Crassatellites (Eucrasatella) conspicus* Nagao by Masuda and Noda (1976))

***Crassatellites formosanus* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 66, pl. 1, figs. 14, 15

Holotype: IGPS no. 37441

About 1500 m NNW of the Police station of Shinsui, Enso-sho, Okayama-gun, Takao-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

***Crassatellites fuscus* (Yokoyama) see *Crassatella fusca* Yokoyama, 1911**

***Crassatellites (Eucrassatella) iesakai* Mizuno, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 5, p. 189, pl. 17, figs. 2a-d

Holotype: TK no. ?

Takamine and Yokoura, Sakito-cho, Nishisonogi-gun, Nagasaki Prefecture

Fukuura Tuff of the Oshima Formation

Paleogene

(Synonymous with *Crassatellites inconspicuus* Nagao by Masuda and Noda (1976))

***Crassatellites inconspicuus* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 50, pl. 2, figs. 14, 14a

Holotype: GS no. 36308

(Sea cliff at a point 300 m SE of the contact point of the two roads at) Tokuman, east of Oshima, Oshima-cho, Nishisonogi-gun, Nagasaki Prefecture (33 °01'44"N, 129 °36'45"E)

Kakinoura Formation

Oligocene

***Crassatellites (Crassatellites) komodai* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 599, pl. 3, figs. 1a-2c

Holotype: GSJ no. 5004 (figs. 1a-d)

In the main incline of the Sakito coal mine, Sakito-cho, Nishisonogi-gun, Nagasaki Prefecture

Maze Formation; lowermost part

Oligocene

***Crassatellites (Crassatellites) kotakai* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 87, pl. 3, figs. 5, 17a-b

Holotype: IGUT no. 10390, Paratype: IGUT nos. 10391-1 to -9

Loc. no. 12: Cliff of west side of Yakena-harbour, Yakena, Yonagusuku-mura, Nakagami-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Crassatellites matsuraensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 50, pl. 3, figs. 20, 20a

Holotype: GS no. 36310

(Pass-side cutting on the boundary between Oyama-mura and Arita-machi, about 500 m NW of the shrine at) Obo, Arita-machi, Nishisonogi-gun, Nagasaki Prefecture; 33 °12'07"N, 129 °52'36"E

Kishima Formation

Oligocene

***Crassatellites nanus* (Adams and Reeve) reported by Nomura and Hatai (1936) from the Miocene Tanagura (Kubota) Formation, Fukushima Prefecture**

***Crassatellites nipponensis* Yokoyama, 1928**

Imp. Geol. Survey of Japan Report, no. 101, p. 89 Holotype: UT no. ?

In the shaft of colliery in the Manda Mine (about 150 m NE of the large pond and about 700 m E of the contact point of the two main roads and Manda), Arao-machi, Tamana-gun (Arao City), Kumamoto Prefecture; 32 °59'50"N, 130 °27'04"E

Yotsuyama Formation

Eocene

(New n. for *Crassatella fusca* (Yokoyama, 1911; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 27, art. 20, p. 8, pl. 2, figs. 1-3, 5, 6) because *fusca* was preoccupied by Kobelt for a living species)

***Crassatellites oinouyei* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 889, pl. 13, figs. 1-3

Holotype: GSJ no. ?

Intoshi, Chkuto-gun, Shinchiku-syu; Injurin, Taikai-gun, Shinchiku-syu; Kyukyurin, Sanwan Sho, Chikunan-gun, Shinchiku-syu, Taiwan

Lower Bryoritz Beds

Pliocene

(Synonymous with *Bathytormus foveolatus* (Sowerby, 1870) by Habe (1977))

***Crassatellites oblongatus* (Yokoyama) see *Crassatella oblongata* Yokoyama, 1920**

***Crassatellites oblongatus uchidanus* (Yokoyama) see *Crassatella uchidana* Yokoyama, 1926**

***Crassatellites osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 74, pl. 2, figs. 3-5

Holotype: JC no. 1400014 (fig. 3)

Tuszara (Loc. No. 20), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

***Crassatellites pauxillus* (Yokoyama) see *Crassatella pauxilla* Yokoyama, 1925**

***Crassatellites (Crassatellites) quadrates* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 88, pl. 12, figs. 24a-b

Holotype: IGUT no. 10393, Paratype: IGUT no. 10394

Loc. no. 317: Small road side cliff at pass between Kuteken and Tedokon, Chinen-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation
Pliocene

***Crassatellites suyamensis* Oinomikado, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 539, p. 674, pl. 20, figs. 9, 10
Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)
Road-side cutting about 150 m S of Suyama, Ono-mura, Kitakanra-gun (Suyama, Ono, Tomioka City), Gunma Prefecture; 36°18'N, 138°55.5'E
Tomioka Formation
Miocene

***Crassatellites (Crassatellites) takanabensis* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 77, pl. 22, figs. 1a-2
Holotype: GKL no. 4697 (figs. 1a-b), Paratype: GKL no. 4698 (fig. 2)
Kizukume, Tonda-mura (Shintomi-cho), Koyu-gun, Miyazaki Prefecture
Takanabe Member of the Koyu Formation, Miyazaki Group
Pliocene

***Crassatellites (Crassatellites) tenuiliratus tenuiliratus* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 73, pl. 22, figs. 6-8, 12
Holotype: GKL no. 4261 (fig. 6), Paratype: GKL nos. 4265, 4278, 4277
Kano, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture; Paratype: Akatani (4265, 4277) and Kusumi (4278), Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture
Tano Member of the Koyu Formation
Miocene

***Crassatellites (Crassatellites) tenuiliratus triangularis* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 75, pl. 22, figs. 9-11
Holotype: GKL no. 4269 (fig. 9), Paratype: GKL nos. 4275, 4704
Akatani 1 (Holotype) and 2, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture
Tano Member of the Koyu Formation, Miyazaki Group
Miocene

***Crassatellites teshimai* Inoue and Mizuno, 1969**

In Mizuno and Inoue, Bull. Geol. Surv. Japan, vol. 20, no. 10, p. 652, pl. 30, figs. 6, 10
Holotype: GSJ no. ? (fig. 6)
The vicinity of Mitsubishi-Oyubari Coal-mine, Yubari City, Hokkaido
Poronai Formation
Oligocene (upper Eocene)

***Crassatellites tosanus* Nomura, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 81, pl. 6, figs. 8a-b
Holotype: designated by Hatai and Nisiyama (1952), GS no. 54638
Tonohama (Near the junction of the tributary and small river, a short distance E of the road at Todani, N of Todani, N of Tonohama, Yasuda-machi, Aki-gun, Kochi Prefecture; 33°26'43"N, 133°58'21"E)
(Konomine or Ananai Formation)
Pliocene

***Crassatellites toyamaensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, pl. 2, figs. 3-5
Holotype: JC no. 1400014 (fig. 3)
Tsuzara (Loc. No. 20), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture
Kashio Alternation of the Kurosedani Foreformation
Miocene
(Synonymous with *Crassatellites osawanoensis* Tsuda by Masuda and Noda (1976))

***Crassatellites (Crassatellites) tsumaensis* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 76, pl. 22, figs. 3a-t
Holotype: GKL no. 4481 (figs. 3a-b), Paratype: GKL no. 4705
Yamaji, Mino-mura, Koyu-gun (Saito City), Miyazaki Prefecture
Tsuma Member of the Koyu Formation, Miyazaki Group
Miocene

***Crassatellites yabei* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 48, pl. 2, figs. 19, 19a-b
Holotype: GS no. 36388
(Beach rocks along the sea-coast about 800 m SW of the contact point of the two roads at) Iwaya, (Wakamatsu-ku, Kitakhusyu City, Fukuoka Prefecture; 33°53'32"N, 130°41'06"E)
Sakamizu Formation
Oligocene

***Crassatellites yabei* var. *yessoensis* Nagao and Otatume**

Minato and Kumano, 1950, Cenozoic Res., no. 5, p. 80, pl. 7, figs. 47, 47a-b
Holotype: HU no. ?
River-side cliff at the Utashinai Mine (Yubari City), Hokkaido
Wakkabane Formation
Eocene
(*Crassatellites (Eucrassatella) yessoensis* Minato and Kumano by Masuda and Noda (1973))

***Crassatellites yagurai* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 38, pl. 2, figs. 1-4

Holotype: Maiko Conchological Cabinet, Kyoto no. ?

East side of Tennoyama, 1.75 km N of Kakegawa railway station (Kakegawa City), Shizuoka Prefecture; 34°46'09"N, 138°00'08"E

Tenno Formation (Kakegawa Group)

Pliocene

(Synonymous with *Crenoceassatella foveolata* (Sowerby) by Hatai and Nisiyama (1952))

***Crassatellites (Crassatina) yositunei* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), 121, pl. 11, figs. 10-14

Syntype: NSM nos. 4418, 4419

Cape Inuwaka, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

***Crassostrea gravitesta* (Yokoyama) see *Ostrea gravitesta* Yokoyama, 1926**

***Crassostrea takiana* (Yokoyama) see *Ostrea takiana* Yokoyama, 1924**

***Crassostrea sunakozakaensis* Ogasawara, 1976**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 46, no. 2, p. 45, pl. 11, figs. 19-21, pl. 12, figs. 15, 20

Holotype: IGCP no. 95018 (pl. 12, fig. 15), Paratype: IGPS no. 95019-1, -4 (pl. 11, figs. 19-21, pl. 12, fig. 20)

Loc. no. Su-01: River side cliff of Asano-gawa at Higashi-Ichise, Kanazawa City, Ishikawa Prefecture

Sunakozaka Formation

Miocene (early middle Miocene)

***Crenella delicatula* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 301, pl. 36, fig. 7

Holotype: GT no. ?

Sawane (sea cliff facing the Mano bay about 250 m SE of the contact point of the two main roads near the primary school, Sawane-machi, Sado-gun, Niigata Prefecture; 37°49'47"N, 139°16'43"E)

Sawane Formation

Pliocene

***Crenella fornicata* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 7, p. 224, pl. 28, fig. 9

Holotype: designated by Hatai and Nisiyama (1952) as right valve; GT no. ?

Shiroyama (Western slope of the Shiroyama hill, a short distance N of Kamigiri, Iwamura-cho, Ena-gun, Gifu Prefecture; 35°22'36"N, 137°24'38"E)

(Kubohara Formation)

lower Pliocene (Miocene)

***Crenella nisigotoensis* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 121, pl. 16, fig. 15
Holotype: SM no. 4510

Nishigoto (road cliff about 2 km NW of Nishigoto, on road leading to Kubota, Hanawa-machi, Higashishirakawa-gun, Fukushima Prefecture; 36°59'03"N, 140°22'E)

Tanagura Formation (Kubota Formation)

Miocene

***Crenella otutumiensis* Nomura and Hatai, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 132, pl. 20, fig. 12

Holotype: SM no. 45159

Otsutsumi (southern cliff of a lake, at the junction of two tributaries of the upper course of the Miyatoko-gawa, about 1.1 km NW of Doba-yama, Miyatoko, Tomiya-machi, Kurokawa-gun, Miyagi Prefecture; 38°22'44"N, 140°49'08"E)
Otsutsumi Formation

Miocene

(*Mercenaria otutumiensis* (Nomura and Hatai) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Crenella parvula* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 301, pl. 36, fig. 8

Holotype: GT no. ?

Sawane (sea cliff facing the Mano Bay, about 250 m SE of the contact point of the two main roads near the primary school, Sawane-machi, Sado-gun, Niigata Prefecture; 37°49'47"N, 139°16'43"E)

Sawane Formation

Pliocene

***Crenella striatocostata* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 46, pl. 6, figs. 20, 21

Holotype: GS no. 36291

(Path-side cutting a short distance E of the pass on the boundary between Haki-machi and Hoshuyama-mura, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture; 33°22'54"N, 130°51'47"E)

Kawamagari Formation

Middle Eocene

***Crenella subfornicata* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 46, pl. 5, figs. 8-9b

Holotype: fig. 9; GS no. 36288

(Beach rocks along the sea coast about 800 m NE of) Toya, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33°54'36"N, 130°40'18"E)

Yamaga Formation

Oligocene

(*Solamen subfornicatum* (Nagao) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

- Crenella tomiyaensis* Hatai and Nakamura, 1940**
Bull. Biogeogr. Soc. Japan, vol. 10, no. 7, p. 113, fig. 1
Holotype: GS no. 61354
Railway cutting near Tomiya railway station, Tomiya, Tomiya-mura (Tomiya-machi), Kurokawa-gun, Miyagi Prefecture; 38°24'N, 140°50'E
Nanakita Formation
Miocene
(*Solamen tomiyaensis* (Hatai and Nakamura) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))
- Cristaria kuboii* Suzuki and Oyama, 1948**
Venus, vol.15, nos. 1-4, p. 41, text-figs.1, 2
Holotype: RINT no. ? (text-fig. 2), Paratype: RINT no. ? (text-fig.1)
Kitayama-pass, north of Kuga, Kawage-mura (Kawage-cho), Age-gun, Mie Prefecture
Hagiwara coal-bearing Formation of the Suzuka Group
Miocene
- Cristaria muroii* (Suzuki) see *Anodonta muroii* Suzuki, 1941**
- Cristaria sasai* Suzuki, 1948**
Venus, vol.15, nos. 1-4, p. 45-46, text-figs. 1-3
Holotype: RINT no. ? (text-figs.1, 2), Paratype: RINT no. ? (text-fig. 3)
Kocho-zawa, a branch of Banno-sawa, Mitsui-Ashibetsu Coal-mine, Ashibetsu City, Hokkaido
Lower *Corbicula* Formation (Akabira Formation, Ishikari Group)
Eocene
- Cryptogramma kaneharai* Yokoyama, 1928**
Rep., Imp. Geol. Surv., no. 101, p. 80, pl. 8, fig. 5
Holotype: GSJ no. ?
Sanko, Injurin, Taikage-gun, Shinchik-syu, Taiwan
Upper Byoritz Beds
Pleistocene
(*Ventricoloida kaneharai* (Yokoyama))
- Cryptomya busoensis* Yokoyama, 1922**
Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 1, p. 126, pl. 7, figs. 1, 2
Holotype: UT no. ?
Otake, Hasho-mura, Inba-gun (Otake, Narita City), Shimosa (Chiba Prefecture)
Oji Bed in Mushashi Formation (Kioroshi Formation)
Pleistocene
- Cryptopecten hsintienensis* Masuda and Huang, 1993**
Jour. Geol. Soc. China, vol. 36, no. 3, p. 267, pl. 3, figs. 15-22
Holotype: NMNS no. 003270
Loc. no. ST 344, Kuanyishan Sandstone in the Hsintien section, Taiwan

Kuanyinshan Sandstone
Miocene

- Cryptopecten oyamadensis* Hirayama, 1954**
Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 54, pl. 3, fig. 3
Holotype: TKD, no. 10112
Loc. No. 3, a small valley of Shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture; 36°46'45"N, 140°12'45"E
Kobana Formation
Miocene
(Synonymous with *Gloripallium crassivenium* (Yokoyama) by Masuda and Noda (1976))

***Cryptopecten yanagawaensis* (Nomra and Zinbo) see *Pecten (Aequipecten) yanagawaensis* Nomura and Zinbo, 1936**

- Ctena hataii* Masuda, 1966**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 325, pl. 35, figs. 15-20
Holotype: IGPS no. 90865 (fig. 15)
Loc. No. 30, Road side cutting near Koeiji Temple, Otani, Suzu City, Ishikawa Prefecture; 37°29'41"N, 137°10'28"E
Higashi-Innai Formation
Miocene

- Ctena minoensis* Itoigawa, 1960**
Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 269, pl. 2, fig. 6
Holotype: ESN no. 20016, Paratype: ESN no. 20017
Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture
Shukunohora Sandstone of the Oidawara Formation
Miocene

***Ctenamussium (Micramussium) kusiroensis* (Takeda) (*Propeamussium kusiroense* (Takeda) by Masuda and Noda (1976))**

- Ctenamussium (Bathyamussium) amakusaensis* Omori, 1955**
Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 14, pl. 1, figs. 4, 5, 8, 9
Holotype: TKD no. 5949
Kuchinashi, Shiki-mura, Minamitakaki-gun, Nagasaki Prefecture
Sakasegawa Formation
Oligocene
(*Ctenamussium amakusaensis* Omori by Masuda and Noda (1976))

***Ctenamussium (s. s.) cancellata* Omori, 1955**
Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 16,

pl. 1, fig. 13

Holotype: TKD no. 5944

Oana, Yamada-hara, Tadano-mura, Asaka-gun, Fukushima Prefecture

Kawachi Formation

Miocene

(*Ctenamusium (Ctenamusium) cancellata* Omori by Masuda and Noda (1976))

***Ctenamusium (Ctenamusium) inouei* Omori, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 15, pl. 1, fig. 7

Holotype: TKD no. 5948

Kuuchinashi, Shiki-mura, Minamitakaki-gun, Nagasaki Prefecture

Sakasegawa Formation

Oligocene

(*Ctenamusium (Ctenamusium) inouei* Omori by Masuda and Noda (1976))

***Cucullaea iriomotensis* Masuda and Sato, 1988**

Saito Ho-on Kai Spec. Pub., no. 2 (Prof. T. Kotaka Commem. Vol.), p. 442, pl. 1, figs. 1a-2

Holotype: IGPS no. 99713, Paratype: IGPS no. 99718

Sea cliff at Nishizaki, about 1 km NW of Nakano, Taketomi-cho, Iriomote-jima, Okinawa Prefecture

Iriomote Formation of the Yaeyama Group

Miocene

***Cucullaea longissima* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 20, pl. 3, fig. 1

Holotype: GT no. ?

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture; 36° 40'N, 138° 04'E)

(Shigarami Formation)

Pliocene

(*Calypptogena longissima (Yokoyama)* by Hatai and Nisiyama (1952))

***Cucullaea nipponica* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 25, pl. 6, figs. 1, 1a-b

Holotype: GS no. 35999

(Western sea cliff, about 400 m W of the primary school at Ipponmats) Io-jima, Io-jima-mura, Nisisonogi-gun, Nagasaki Prefecture (32° 41'55"N, 129° 46'31"E)

Funatsu Formation

Upper Eocene

***Cucullaea ponderosa* Yokoyama, 1925**

Jour. Geol. Soc. Tokyo, vol. 32, no. 379, p. 7, pl. 7, figs. 1-2

Holotype: UMUT no. CM 24679

Takamine, Aburahi-mura, Koga-gun, Omi (probably from a road-side cutting near Takamine, Koga-cho, Koga-gun, Shiga Prefecture; 34° 52'N, 136° 13'40"E)

(Koka Formation), Kobiwako Group

Tertiary (Pliocene)

***Cucullaea taiwanensis* Masuda and Huang, 1990**

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 144, pl. 1, fig. 12, pl. 2, figs. 6, 8-15

Holotype: NMNS no. 003251

Loc. no. KS 152A, Peikangchi section, Central Taiwan

Kuanyinshan Sandstone

Early Miocene

***Cucullaea toyamaensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 69, pl. 1, figs. 3, 4

Holotype: JC no. 1400003 (fig. 3), Paratype: JC no. 1400004

Miyanokoshi (Loc. No. 86), Yatsuo-machi, Nei-gun, Toyama Prefecture

Takehata Alternation of the Kurosedani Formation

Miocene

***Cultellus ? brevis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 114, pl. 22, fig. 1

Holotype: GS no. 35788

The Koyagi Mine (a short distance S of) Abo, Koyagi-jima, Koyagi-mura, Nishisonogi-gun, Nagasaki Prefecture (32° 40'50"N, 129° 48'10"E)

Futagojima Formation

Lower Eocene

(*Phaxus brevis (Nagao)* by Hatai and Nisiyama (1952))

***Cultellus izumoensis* Yokoyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 1, p. 5, pl. 2, figs. 1a-b

Fujina (lake cliff about 300 m NWW of Jyakusan, N of Fujina, Tamayu-cho, Yatsuka-gun, Shimane Prefecture; 35° 26'N, 133° 02'E)

Fujina Formation

Miocene

(*Phaxus izumoensis (Yokoyama)* by Hatai and Nisiyama (1952))

***Cultellus izumoensis jobanicus* Kanno, 1956**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 34, p. 214, pl. 5, figs. 1, 2

Holotype: TKD no. 5527 (fig. 1)

Shimotakaku, Takaku-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture

Takaku Formation

Miocene

***Cultellus ? leguminoides* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 84, pl. 4, fig. 21

Holotype: GS no. 36477

(Western sea-cliff about 350 m SW of the shrine on the hill) Io-jima, Iojima-mura, Nishisonogi-gun, Nagasaki Prefecture (32°42'N, 129°46'21"E)

Funatsu Formation

Upper Eocene

(*Phaxus leguminoides* (Nagao) by Hatai and Nisiyama (1952))

***Cultellus otukai* Ogasawara and Tanai, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 211, pl. 19, fig. 19

Holotype: GSJ no. ?

Kagayama park, Oyama-machi (Tsuruoka City), Yamagata Prefecture

Kamigo Formation (Oyama Formation)

Miocene

***Cultellus oyamensis* Ogasawara and Tanai, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 211, pl. 19, fig. 20

Holotype: GSJ no. ?

Kagayama park, Oyama-machi (Tsuruoka City), Yamagata Prefecture

Kamigo Formation (Oyama Formation)

Miocene

***Cultellus rectangulus* Kanno, 1956**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 34, p. 215, pl. 5, figs. 3-7

Holotype: TKD, no. 5529

Nenokami, Yoshida-machi, Chichibi-gun, Saitama Prefecture

Akahira Formation

Oligocene (lower Miocene)

***Cuneopsis (Cuneopsis) gracilentata* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no.149, p. 423, 425, fig. 5, fig. 1-4

Holotype: ESN-40117, Paratype: ESN-40097, ESN-40099, MFM-110026, MFM-110027, MFM-110036

River beds on the side of the Hattori River at Hata to Nakamura, Ohyamada-mura, Ayama-gun, Mie Prefecture

Iga Formation

Pliocene

***Cuneopsis (Procuneopsis) okuyamai* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no.149, p. 423, 425, fig. 5, fig. 1-4

Holotype: ESN-40086, Paratype: ESN-40087, MFM-110021, MFM-110022

Hirata, Ohyamada-mura, Ayama-gun, Mie Prefecture

Iga Formation

Pliocene

***Cuneopsis nagahamai* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 9, pl. 1, figs. 1a-2b

Holotype: GSJ no. 5260 (fig. 1), Paratype: GSJ, no. 5262 (fig. 2: same locality)

Kurosaki, Kitamatsuura-gun, Nagasaki Prefecture

Fukazuki Formation; lower part

Miocene

***Cuneopsis (Tchangsinia) praemaxima* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no.149, p. 427, fig. 4, fig. 4-5

Holotype: ESN-40081, Paratype: ESN-40097, ESN-40099, MFM-110026, MFM-110027, MFM-110036

River beds on the side of the Hattori River at Hata to Nakamura, Ohyamada-mura, Ayama-gun, Mie Prefecture

Iga Formation

Pliocene

***Cuneopsis praeambiguus* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 9, pl. 1, figs. 3, 3a-b, pl. 2, fig. 7

Holotype: GSJ no. 5261 (figs. 3, 3a-b); Paratype: GSJ no. 5263 (fig. 7: same locality)

Kurosaki, Kitamatsuura-gun, Nagasaki Prefecture

Fukazuki Formation; lower part

Miocene

***Cuneopsis pseudbarbouri* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 10, pl. 1, figs. 4, 5

Holotype: GSJ no. 5341 (fig. 4)

Yoshinoura (Yoshinotani), Sasamachi, Kitamatsuura-gun, Nagasaki Prefecture

Ainoura Formation

Miocene

***Cuspidaria (Cuspidaria) araii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 199, pl. 5, figs. 5a-6

Holotype: TKD no. 5686 (figs. 5a-b), Paratype: TKD no. 5687 (fig. 6, same locality)

Loc. No. 207, a river side cliff, upstream of a fall, Nenokami, Yoshida-machi, Chhichibu-gun, Saitama Prefecture

Nenokami Formation

Oligocene (early Miocene)

Cuspidaria (Cardiomya) beringensis (Leche) reported by Nomura and Zinbo (1937) from the Miocene Gamayaji Formation, Yamagata Prefecture

Cuspidaria chinensis Griffith and Pidgeon reported by Hatai (1940) from the Miocene Suenomatsuyama Formation, Iwate Prefecture

Cuspidaria fujitai Kuroda reported by Aoki (1960) from the Pliocene Nakazato Formation, Kanagawa Prefecture

Cuspidaria gouldiana septentrionalis Kuroda reported by Takayasu (1961) from the Pliocene Sasaoka Formation, Akita Prefecture

Cuspidaria hirasei Kuroda reported by Shibata (1974 in Itoigawa, Shibata and Nishimoto) from the Miocene Nataki Formation, Gifu Prefecture

Cuspidaria (Crdiomya) interstitialis Takeda, 1953
Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 87, pl. 8, fig. 22

Holotype: UH no. 6599

Loc. No. T355, originally not described

Poronai Formation

Oligocene (late Eocene)

Cuspidaria irridella Kuroda reported by Aoki (1960) from the Pliocene Nakazato Formation, Kanagawa Prefecture

Cuspidaria japonica Kuroda reported by Hatai and Masuda (1962) from the Miocene Tokigawa Formation, Saitama Prefecture

Cuspidaria (Tergulina) koreanica Noda and Yoon, 1978

Venus, vol. 36, no. 4, p. 178, text-fig. 2

Road side cliff at the entrance to valley running northwestward in the northern side of Yongheung-dong, Pohang City, Gyeongsangbug-do, Korea

Idong Formation

Miocene

Cuspidaria ligula Yokoyama (*Plectodon ligula* (Yokoyama) by Masuda and Noda (1976))

Cuspidaria (Cardiomya) makiyamai Kanehara, 1937

Jour. Geo. Soc. Japan, vol. 44, no. 527, p. 783, pl. 23, fig. 8

Holotype and Paratype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Sea cliff of Yotsukura-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture (37°07'N, 141°E)

Asagai Formation

Oligocene or Miocene (Oligocene)

Cuspidaria osawanoensis Tsuda, 1959

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 73, pl. 2, figs. 2a-b

Holotype: JC no. 1400012, Paratype: JC no. 1400013 (from Yasozima)

Kashio (Loc. No. 48), Yatsuo-machi, Nei-gun, Toyama Prefecture; Paratype: Yasozima, Yatsuo-machi, Nei-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation
Miocene

Cuspidaria (Cardiomya) reticulata Kuroda reported by Hatai, Masuda and Suzuki (1961) from the Pliocene (Pleistocene) Hamada Formation, Aomori Prefecture

Cuspidaria (Cardiomya) yabei Katto, 1960

Res. Rep., Kochi Univ., vol. 9, no. 9, p. 108, pl. 1, fig. 2

Holotype: Kochi Univ. no. ?

Ueno, Misaki, Tosashimizu City, Kochi Prefecture

Misaki Formation

Oligocene

(*Cardiomya yabei* (Katto) by Masuda and Noda (1976))

Cyclina (Cyclina) asagaiensis Kamada, 1952

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 6, p. 169, pl. 15, figs. 3a-c

Holotype: IGPS no. 72955

In the Omachi abandoned shaft of the Joban Coal Mining Co., N of Takasaka, Uchigo-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture; 37°03'07"N, 140°51'04"E

Asagai Formation

Oligocene

Cyclina compressa Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 76, pl. 10, fig. 11

Holotype: GS no. 36415, Paratype: GS no. 36423

(Pass-side cutting on the boundary between Oyama-mura and Arita-machi, about 500 m NW of the shrine at) Obo, Arita-machi, Nishimatsuura-gun, Saga Prefecture (38°12'07"N, 129°52'36"E)

Kishima Formation

Oligocene

Cyclina (Cyclina ?) hwabongriensis Yoon and Noda, 1976

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 46, no. 1, p. 29, figs. 2-5

Holotype: DGBU no. 10262 (fig. 2), Paratype: DGBU nos. 10265, 10264 and 10263

A cliff at the oppsite side of a temple about 1 km east of Hwabong-ri, Ulsan City, Gyeongsannam-do, Korea

Hwabongri Formation

Miocene (early middle Miocene)

Cyclina (Cyclina) japonica Kamada, 1952

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 6, p. 168, pl. 15, figs. 1a-b, 2, 4

Holotype: IGPS no. 72952 (figs. 1a-b), Paratype: IGPS nos. 7110, 52776, 72954

Loc. no. Iw-3, 200 m W of Tokunari, Machino-machi, Fugeshi-gun (Wajima City), Ishikawa Prefecture; 37°24'36"N, 137°05'20"E: Paratype; Loc. no. Gi-4, Shobasamahora, 1 km W

of Tsukiyoshi, Aki-mura, Toki-gun (Mizunami City), Gifu Prefecture; 35°22'48"N, 137°13'36"E: Loc. no. Sh-1, Pass between Ayukawa, Ayukawa-mura and Kurokawa, Yamauchi-mura both of (Tsuchiyama-cho) Koga-gun, Shiga Prefecture; 34°56'00"N, 136°20'43"E: Loc. no. Fs-13, In the 1st pit of the Taisho Coal Mining Co., Kamiyamada, Yamada-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture; 36°57'07"N, 140°57'10"E

Higashi-Innai Formation (Holotype), Tsukiyoshi Formation, Kaminohira Formation and Yamada Formation (Paratype)
Miocene

***Cyclina kamadae* Araki, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 36, p. 164, pl. 18, figs. 4a-b

Holotype: Mie Univ., no. ?

Small cliff at the paddy-field situated at about 200 m NW of Bessho, Misato-mura, Age-gun, Mie Prefecture

Furutaike Sandstone (Furutaike Formation)

Miocene

***Cyclina lunulata* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 158-159, pl. 13, fig. 1

Holotype: Geol. Surv. Chosen, no. 32

Nanseki, North Korea

Heiropokudo Formation

Miocene

***Cyclina mitsuchii* Oyama (MS)** reported by Tanai and Ogasawara (1952) from the Miocene Kamigo (Oyama) Formation, Yamagata Prefecture

***Cyclina ? nodai* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 75, pl. 7, figs. 20, 20a

Holotype: GS no. 36442; Paratype, GS no. 36442

The third Namazuta Mine (on the northern slope of the hill, about 400 m SE off the contact point of the two railways at Namazuta, Iizuka City, Fukuoka Prefecture; 33°39'23"N, 130°43'E))

Honso Formation

Middle Eocene

***Cyclina ? shirokiana* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 239, pl. 2, fig. 7

Holotype: GT no. ?

Sannosawa, Shiroki-gawa, Uryu-gun (Stream-side of a valley at N of the entrance of the Shiroki-gawa, Numata-mura, Uryu-gun, Ishikari Province; 43°59'18"N, 141°57'03"E)

"Paleocene" (Lower Shiroki, Eocene)

***Cyclina (Cyclina) umbonata* Kotaka and Noda, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 141, pl. 25, fig. 15

Holotype: IGPS no. 95090

Road-side cliff, about 500 m south of Amuntay, western part of Bondoc Peninsula, Philippines

Pitogo Formation

Miocene

***Cyclina (Cyclinorbis) yatsuoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 76, pl. 2, figs. 10a-11

Holotype: JC no. 1400018 (figs. 10a-b), Paratype: JC no. 1400019

Takehata (Loc. No. 38), Yatsuo-machi, Nei-gun, Toyama Prefecture

Takehata Alternation of the Kurosedani Formation

Miocene

***Cyclocardia dodairensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 154, as the type *Venericardia* sp. (Yokoyama, 1924, Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 19, pl. 3, figs. 8, 9)

Holotype: UT no. ?

Dodaira, Misawa, Kubota-mura, Iwaki-gun, Fukushima Prefecture

Iwaki Formation

Oligocene

(Synonymous with *Venericardia (Cyclocardia) subnipponica* Nagao by Masuda and Noda (1976))

***Cyclocardia fujinaensis* Ogasawara and Nomura, 1980**

Prof. S. Kanno Mem. Vol., p. 90, pl. 9, figs. 11a-17

Holotype: IGPS no. 96024 (fig. 16), Paratype: IGPS no. 96025-1, -3 (figs. 11-14), 96026 (figs. 15, 17)

Loc. no. Fj-10, road side cliff about 400 m E of Shinji Station of National Railway, Shinji-cho, Yatsuka-gun, Shimane Prefecture (132°55'00"N, 35°24'11"E); Paratype: *ibid.* and (figs. 15, 17);

Loc. no. Fj-16; National Route 9 side cliff about 1600 m NE of Kimachi Station of National Railway, Kagami, Shinji-cho,

Yatsuka-gun, Shimane Prefecture (132°58'21"N, 35°25'10"E)

Fujina Formation

Miocene

***Cyclocardia oyamai* Kafanov and Ogasawara, 1999**

N. n. for type species: *Cardita yokoyamai* Slodkewitsch, 1936, p. 45; new name for *Venericardia tokunagai* Yokoyama, 1929, p. 392, pl. 75, fig. 2. and Yokoyama, 1926, p. 223, pl. 28, figs. 17,

18 non Yokoyama, 1924, p. 18, pl. 3, figs. 10, 11. (not Oyama and Mizuno, 1958)

Holotype: UK no. ?

Dorogawa River (Ul'yanovskaya) River, about 1 km above its mouth, Notoro (Kril'on) Peninsula, Rutaka (Aniwa) District,

Sakhalin, Russia

Oligocene ?

Cyclocardia siogamensis (Nomura) reported by Shibata (1974) from the Miocene Nataka and Yamanouchi Formations, Gifu Prefecture; see *Venericardia siogamensis* Nomura, 1935

***Cyclopecten tochiensis* Kanno, 1961**

Japan. Jour. Geol. Geogr., vol. 32, no. 1, p. 115, pl. 6, figs. 1a-3
Holotype: TKD no. 5515 (fig. 3), Paratype: TKD, no. 5516
Oto, Iono-mura (Kurobane-machi), Nasu-gun, Tochigi Prefecture
Kobana Formation
Miocene
(*Polynemamussium tochiensis* (Kanno) by Masuda and Noda (1976))

***Cyrena mirabilis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 12, no. 1, p. 52 (42), pl. 7, fig. 27
Syntype: IGPS no. 35523?
Iwaya Mine, Kyuragi-machi, Higashimatsura-gun, Saga Prefecture
Yoshinotani Formation, Ochi Group
Oligocene
(*Batissa mirabilis* (Nagao) by Suzuki (1941))

***Cyrena (Batissa) ponderosa* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 9, no. 2, p. 108 (12), pl. 20 (3), figs. 10, 30, pl. 21 (4), fig. 21, pl. 22 (5), figs. 16-19
Syntype: IGPS no. ?
Takezaki, Kouyagijima Island, Kouyagi-cho, Nagasaki Prefecture; Shinyama Mine, Oniki, Ushibuka City, Kumamoto Prefecture; the Hashima Mine, Hashima Island, the Futatsojima Mine, Futagojima Island and the Takashima Mine, Takashima Island, Takashima-cho, Nagasaki Prefecture
Lower *Orthaulax japonicus* Zone
(Eocene)
(*Batissa nagaoui* (n. n.) by Suzuki (1941))

***Cyrena sakaensis* Makiyama, 1927**

Chikyū (the Globe), vol. 8, p. 189, pl. 3, fig. 3
Holotype: KU no. ?
West of the hospital at Nakajo-mura, Kamiminochi-gun, Nagano Prefecture
(Shigarami Formation)
Tertiary (Pliocene)

***Cyrena verecunda* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 242, pl. 3, fig. 5
Syntype: UMUT nos. CM 26260, 26261
In the Shimoda-zawa, a branch of the Shisen-gawa, Numata-mura, Uryu-gun, Ishikari Province (Precise locality unknown)
Lower Morokoshi (Morokoshi Formation, Uryu Group)

Eocene

(*Corbicula atrata tokudai* (Yokoyama) by Suzuki (1941); *Astare verecunda* (Yokoyama) by Hatai and Nisiyama (1952); *Corbicula verecunda* (Yokoyama))

***Cyrenolimopsis* Habe n. gen., 1953**, p. 207, type species as *Limopsis adamssiana* Yokoyama, 1920 (Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6), described from the Pliocene (Pliocene) Koshiha Formation, Kanagawa Prefecture

***Cyrtoleura dilatata japonica* (Yokoyama) (*Barnea* (*Umitakea*) *dilatata japonica* (Yokoyama) by Masuda and Noda (1976))**

***Delectopecten peckhami* (Gabb)** reported by Masuda (1962) from the Miocene Amatsu Formation, Chiba Prefecture

***Dimya minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 266, pl. 1, figs. 5a-b
Holotype: ESN no. 20006
Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture
Shukunohora Sandstone of the Oidawara Formation
Miocene

***Diplodonta confusa* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 60, pl. 10, fig. 8, 10, 10a
Holotype: GS no. 36351 (fig. 8)
Quarry (on the southern slope of the hill, about 400m NE of the contact of the two roads) at Asakawa, Shimago-mura, Onga-gun, Fukuoka Prefecture; 33°53'51"N, 130°42'25"E)
Yamaga Formation
Oligocene
(*Taras confusa* (Nagao) by Hatai and Nisiyama (1952); *Felaniella confusa* (Nagao) by Okamoto and Sakai (1995; Bull. Mizunami Fossil Mus. no. 22)

***Diplodonta ferruginata* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 157-158, pl. 12, figs. 12, 13
Holotype: Geol. Surv. Chosen, no. 82
Kinshodo, North Korea
Mankodo Formation
Miocene

***Diplodonta japonica* Pilsbry** reported by Yokoyama (1920) from the Naganuma "Lower Musashino" Formation (Pleistocene), Kanagawa Prefecture

***Diplodonta ? kobayashii* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 7, p. 348, pl. 67, fig. 15

Holotype (designated by Hatai and Nisiyama, 1952): GT no. ?
Southwestern small valley, about 250 m N of the shrine at Imabyu and about 250 m SW of the bench-mark (10.96 m) at Heki, Tonda-mura (Shintomi-cho), Koyu-gun, Miyazaki Prefecture
(Heki Formation)
Pliocene
(*Joannisiella* ? *koyayashii* (Yokoyama) by Hatai and Nisiyama (1952))

***Diplodonta murayamai* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 85, pl. 9, fig. 9, pl. 10, fig. 2
Holotype: GSJ no. ?
Denshinshiko, Shiko-sho, Byoritz-gun, Shinchiku-syu, Taiwan;
or Intoshi, Chikuto-gun, Shinchiku-syu, Taiwan
Upper Byoritz Beds
Pleistocene

***Diplodonta problematica* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 110, pl. 22, figs. 4, 4a
Lectotype (designated by Hatai and Nisiyama (1952)): GS no. 35827
(Road-side cutting on the eastern slope of the Miroku-dake, about 550 m NE of the summit of the Jiromaru-dake (397 m))
Imazu-mura, Amakusa-Kami-Shima, Amakusa-gun, Kumamoto Prefecture (32 °28'45"N, 130 °24'50"E)
Shiratake Formation
Lower Eocene
(*Taras* ? *problematicus* (Nagao) by Hatai and Nisiyama (1952))

***Diplodonta tokunagai* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 3, p. 121, pl. 15, fig. 16
Holotype (designated by Hatai and Nisiyama (1952): GT no. ?
Shimo-Kagemori (Northern foot of the hill along the Arakawa, about 200 m NE of the temple at Takinoue, Kagemori-mura, Chichibu-gun (Chichibu City), Saitama Prefecture; 35 °58'45"N, 139 °03'48"E)
(Tsuyako Formation)
Pliocene (Oligocene by Hatai and Nisiyama (1952); early Miocene)
(*Taras tokunagai* (Yokoyama) by Hatai and Nisiyama (1952))

***Diplodonta turgidula* Yokoyama, 1931**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 195, pl. 11, figs. 7a-c
Holotype: GT no. ?
The Pankeseta, a tributary of the Azuma, Yufutsu-gun, Iburi (Probably stream-side of the Pange-gawa, a branch of the Kapiu-gawa which in turn is a tributary of the Atsuma-gawa, Atsuma-mura, Yufutsu-gun, Iburi Province, Hokkaido
Kawabata Formation
Miocene

Donax kiusiuensis Pilsbry reported by Makiyama (1927) from the Pliocene Dainich Formation, Shizuoka Prefecture

***Donax (Latona) minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 271, pl. 2, fig. 10
Holotype: ESN no. 20023, Paratype: ESN no. 20024 (same locality)
Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture
Shukunohora Sandstone of the Oidawara Formation
Miocene

***Dosinia akaisiana* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 60, pl. 8, figs. 1-6
Holotype: SM no. 6061 (fig. 1)
Path on the southern side of the valley Wakinosawa, about 2 km W of Hitotsumori, Akaishi-mura (Iwasaki-mura), Nishitsugaru-gun, Aomori Prefecture (40 °41'N, 140 °08'05"E)
Tanosawa Formation
Miocene

***Dosinia (Dosinella) anguloides* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 216, pl. 17, fig. 2
Holotype: SM no. 2543
Western side cliff of the Ajiri hill, about 500 m N of Ajiri, and about 300 m E of the crossing point of the two roads in Nakanoshima, Shiogama City, Miyagi Prefecture (38 °18'47"N, 141 °02'17"E)
Chiganoura Formation
Miocene

Dosinia borttgeri Martin reported by Kanehara (1900) from the Miocene Kanomatsuzawa Formation, Tochigi Prefecture
(*Kaneharaia kaneharai* (Yokoyama))

***Dosinia chikuzenensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 64, pl. 10, fig. 5
Holotype: GS no. 36277
(Beach rocks along the sea coast about 500 m N of Sakamizu, Shimago-mura, Onga-gun, Fukuoka Prefecture; 33 °56'07"N, 130 °42'18"E)
Sakamizu Formation
Oligocene
(*Dosinia (Phacosoma) chikuzenensis* (Nagao) by Masuda and Noda (1976))

Dosinia (Phacosoma) chikuzenensis nagaii Otuka (*Dosinia hataii* Masuda by Masuda and Noda (1976))

Dosinia (Phacosoma) chikuzenensis nomurai Otuka see *Dosinia japonica nomurai* Otuka, 1934

***Dosinia ettyuensis* Hatai and Nisiyama, 1939**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 150, pl. 9, fig. 4
Holotype: GS no. 62429

West side cliff of the Jintsu-gawa, about 50 m S of the east entrance of the railway tunnel S of Jono, Sugihara-mura, Nei-gun, Toyama Prefecture (36°35'N, 137°11'E)

Jono Formation

Mio-Pliocene (Miocene)

(*Dosinia ettyuensis* in original description)

***Dosinia exoleta* Linné** reported by Tokunaga (1906) from the Pleistocene beds at Oji and Shinagawa, environs of Tokyo (Tokyo Prefecture)

***Dosinia fujimotoi* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 178, pl. 2, figs. 10, 11

Holotype: TKD no. 5588 (fig. 10), Paratype: TKD no. 5589 (fig. 11), TKD no. 5709 (loc. 216)

Loc. No. 137, a small exposure, about 150 m N of a shrine, Mitagae, Ryokai-mura, Chichibu-gun, Saitama Prefecture: Paratype, loc. No. 216, a small valley cliff, about 300 m W of Hisakata, Yoshida-machi, Chichibu-gun, Saitama Prefecture.

Ushikubitoge Formation (Holotype) and Nenokami Sandstone (loc. No. 216; Paratype) of the Hikokubo Group
Oligocene (lower Miocene)

***Dosinia japonica kawagensis* Araki, 1960**

Bull. Lib. Arts Dep., Mie Univ., Spec. Vol., no. 1, p. 95, pl. 7, fig. 3

Holotype: Mie Univ. no. ?

Road side cliff about 300 m NW of Onohira, Geino-cho, Age-gun, Mie Prefecture

Kaisekizan Formation

Miocene

***Dosinia japonica nomurai* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 618, pl. 48, fig. 54

Holotype: GT no. ?

Loc. 3, Nisatai (SE valley of Nisatai, about 700 m SE of primary school at Nisatai, Nisatai-mura, Ninohe-gun, Iwate Prefecture; 40°18'N, 141°18'03"E)

Lower Kadonosawa Formation (Kadonosawa Formation)

Miocene

(*Dosinia (Phacosoma) nomurai* Otuka by Hatai and Nisiyama (1952))

***Dosinia (Phacosoma) hataii* Masuda, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 34, pl. 6, figs. 1a-2

Holotype: IGPS no. 72476

Hattomaki, Hanawa-machi, Higashishirakawa-gun, Fukushima Prefecture

Kubota Formation

Miocene

***Dosinia kaneharai* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 4, p. 133, pl. 17, fig. 4

Holotype (designated by Hatai and Nisiyama (1952): GT no. ?

(Northern slope of the Mattugata-yama, near the head of the valley (a branch of the Fudosawa), about 900 m N of the summit and about 1.4 km SE of the) Shinoyu hot-spring, Shiobara-machi, Shioya-gun, Tochigi Prefecture (36°56'30"N, 139°50'27"E)

Kanomatazawa Formation

Pliocene (Miocene)

(*Dosinia (Kaneharaia) kaneharai* Yokoyama by Hatai and Nisiyama (1952))

***Dosinia (Kaneharaia) kaneharai fujinaensis* Masuda, 1967**

Saito Ho-on Kai Mus., Res. Bull., no. 36, p. 24, pl. 1, fig. 9, pl. 2, fig. 3

Holotype: IGPS no. 51840

South of Morinoko, Fujima, Tamayu-machi, Yatsuka-gun, Shimane Prefecture: 35°26'N, 133°02'E

Fujina Formation

Miocene

***Dosinia (Kaneharaia) kaneharai rumoiensis* Amano, 1983**

Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 4, p. 50, pl. 4, fig. 12, pl. 5, figs. 1a-b, 5a-b, 10

Holotype: IGUT no. 15006 (Loc. no. T57), Paratype: IGUT nos. 15008 (Loc. no. T57), 15011 (Loc. no. T50), 15012 (Loc. no. T50)

Road-side cliff facing the Japan Sea near the boundary of Rumoi City and Rumoi-gun, Rumoi Province, Hokkaido, Loc. no. T50: Stream-side cliff at about 350 m upstream of the Omuro-no-sawa, Rumoi City, Hokkaido

Togeshita Formation

Late Miocene

***Dosinia (Kaneharaia) kannoi* Masuda, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 35-37, pl. 6, figs. 6a-b, 7a-b

Holotype: IGPS no. 64682

Kinseido, Kinshodo, Eihoku-men, Kisshu-gun, Kankyo-hokudo, North Korea

Heiroku Formation

Early Miocene

(*Dosinia (Kaneharaia) kaneharai kannoi* Masuda by Masuda (1967))

***Dosinia (Kaneharaia) kaneharai ouchiensis* Kanno, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 19, p. 82, pl. 13, figs. 1a-5

Holotype: TKD no. 5899 (figs. 1a-c)

Valley cliff about 150 m in the upstream of the Tamagawa reservoir, Minami-ide, Ouchi-mura, Igu-gun, Miyagi Prefecture
Yoshigasawa Formation: Middle fossil zone of the formation
Miocene (late Miocene)

***Dosinia kannoi* Masuda** see ***Dosinia (Kaneharaia) kannoi* Masuda, 1963**

***Dosinia (Phacosoma) kawagensis* Araki** see ***Dosinia japonica kawagensis* Araki, 1960**

***Dosinia kawagensis* Araki** see ***Dosinia japonica kawagensis* Araki, 1960**

***Dosinia matsumotoi* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 1, p. 11, pl. 1, fig. 10

Holotype: GT no. 3992

(Near the house at the top of) Shiroyama (hill about 450 m N of the town office at) Kanbara, Kanbara-machi, Ihara-gun, Shizuoka Prefecture (35°07'11"N, 138°36'15"E)

Shiroyama Sandstone Beds

Miocene

***Dosinia (Phacosoma) nagaii* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 618, pl. 48, fig. 55

Holotype: GT no. 1461

Nisatai (Stream-side of Nisatai valley, about 200 m SE of the bridge S of Nisatai, Nisatai-mura, Ninohe-gun, Iwate Prefecture; 40°17'53"N, 141°19'24"E)

Shiratori Formation

Miocene

***Dosinia (Phacosoma) nomurai* Otuka** see ***Dosinia japonica nomurai* Otuka, 1934**

***Dosinia odosensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 59, pl. 7, fig. 2

Holotype: SM no. 6027

Tanosawa, near the railway station, Odose-mura (Fukaura-machi), Nishitsugaru-gun, Aomori Prefecture (40°45'07"N, 140°02'03"E)

Tanosawa Formation

Miocene

***Dosinia (Phacosoma) okinawaensis* Masuda and Sato, 1988**

Saito Ho-on Kai Spec. Pub., no. 2 (Prof. T. Kotaka Commem. Vol.), p. 446, pl. 3, figs. 12-17

Holotype: IGPS no. 99716, Paratype: IGPS no. 99726

Sea cliff at Nishizaki, about 1 km NW of Nakano, Taketomi-cho, Iriomote-jima, Okinawa Prefecture

Iriomote Formation of the Yaeyama Group

Miocene

***Dosinia ovata* Kanno, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 19, p. 81-82, pl. 13, figs. 6a-c

Holotype: TKD no. 5900

River side cliff about 70 m below the bridge of Harakawa, Takezawa-mura, Hiki-gun, Saitama Prefecture

Iida Formation

Miocene

(***Dosinia (Phacosoma) ovata* Kanno** by Masuda and Noda (1976))

***Dosinia (Phacosoma) owadaensis* Amano, 1983**

Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 4, p. 50, pl. 5, figs. 6a-8

Holotype: IGUT no. 15001, Paratype: IGUT no. 15002

Loc. no. T24: River floor of the Rumoi River, just east of the Owada Crematory (Rumoi-shinkawa of Hashimoto, 1950), Rumoi City, Hokkaido

Toheshita Formation

Late Miocene

***Dosinia shibaharensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 180, pl. 2, figs. 12a-b

Holotype: TKD no. 5595, Paratype: TKD no. 5596 (same locality)

Loc. No. 613, a small valley cliff, about 500 m N of Shibahara mineral spring, Shibahata, Arakawa-mura, Chichibu-gun, Saitama Prefecture

Nagura Formation

Miocene

(***Dosinia (Phacosoma) shibaharensis* Kanno** by Masuda and Noda (1976))

***Dosinia sibataensis* Nomura and Onisi, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 183, pl. 18, fig. 1

Holotype: SM no. 21709

Vicinity of Adachi, Murata-machi, Shibata-gun, Miyagi Prefecture (River cliff about 150 m W off bridge 500 m W of Adachi, Murata-machi, Shibata-gun, Miyagi Prefecture; 38°07'01"N, 140°42'04"E)

Murata Formation (Adachi Formation)

Miocene

***Dosinia sirakii* Makiyama, 1936**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 212-213, pl. 4, figs. 3, 4

Holotype: GK no. ?

Kinsei, North Korea

Lower banko Sandstone

Miocene

***Dosinia suketoensis* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 2, p. 31, pl.

1, figs. 6, 7, 9

Holotype: GT no. 10011 (figs. 6, 7). Paratype: GT no. 10012 (fig. 9)

(Several meters below dam of the Saijo-gawa, about 200 m NNE of the Shobara railway station and about 500 m NEE of the bridge at) Suketo, Shobara-machi, Hiba-gun, Hiroshima Prerecture (34 °51'43"N, 133 °01'05"E)

Shobara Formation

Miocene

***Dosinia tatunokutiensis* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 256, pl. 34, figs. 2-6, pl. 35, figs. 11a-b

Holotype: GS no. 15944 (fig. 2), Paratype: SM no. 2215, 2441 (figs. 3-6, 11a-b)

Goroku cliff along the right bank of the Hirosegawa-River, Aoba-ku, Sendai City, Miyagi Prefecture (38 °16'N, 140 °49'E)

Tatsunokuchi Formation

Pliocene

***Dosinia (Phacosoma) tomikawaensis* Takagi, 1986**

Jour. Fac. Sci., Hokkaido Univ. Ser. IV, vol. 21, no. 4, p. 608, pl. 2, figs. 1-5

Holotype: UH no. 30560 (figs. 4a-c)

Hosokomatazawa, Kamiiso-machi, Kamiiso-gun, Oshima Province, Hokkaido; 41 °40'N, 140 °40'E

Tomikawa Formation

Pleistocene

Dosinia troscheli* Lischke** reported by Yokoyama (1926) from the Miocene Kanomatazawa Formation, Tochigi Prefecture (Dosinia nomurai* Otuka** by Hatai and Nisiyama (1952))

***Dosinia tugaruana* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 58, pl. 6, fig. 6

Holotype: SM no. 6024.

Hotatezawa, about 3 km NW of Shinyu hot-spring, a tributary of the Sasanai-gawa, Iwasaki-mura, Nishitsugaru-gun, Aomori Prefecture (40 °35'N, 140 °01'E).

Tanosawa Formation

Miocene

***Dosinia yamaguchie* Kanno and Matsuno, 1960**

Jour. Geol. Soc. Japan, vol. 66, no. 772, p. 42, pl. 5, figs. 1, 2, 6

Holotype: TKD no. 5508 (fig. 1), Paratype: TKD no. 5509

Loc. No. 732, the upper stream of the Chepotsunai River, a tributary of the Kotanbetsu River, Hokkaido; Locs. 430, 431 and 1300, the upper stream of the Haboro River, Haboro-machi, Rumoi Province, Hokkaido

Sankebetsu Formation; lower member.

Miocene

(***Neogenella yamaguchie* (Kanno and Matsuno)**)

***Dosinorbis kawagensis* (Araki) (*Dosinia (Phacosoma) kawagensis* Araki** by Masuda and Noda (1976))

***Dosinorbis nomurai* (Otuka) (*Dosinia (Phacosoma) nomurai* (Otuka)** by Masuda and Noda (1976))

***Dosinorbis odosensis* (Nomura) (*Dosinia (Phacosoma) odosensis* Nomura** by Masuda and Noda (1976))

***Dosinorbis suketoensis* (Otuka) (*Dosinia (Phacosoma) suketoensis* Otuka** by Masuda and Noda (1976))

***Ennucula chinensis* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, 65, pl. 12, figs. 23a-b

Holotype: IGUT no. 10035

Loc. no. 348: Road side cliff of Route no. 331, about 500 m N of Kuteken, Chinen-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Ennucula haboroensis* Kanno and Matsuno, 1960**

Jour. Geol. Soc. Japan, vol. 66, no. 772, p. 41, pl. 4, figs. 1a-b

Holotype: TKD no. 5504, Paratype: TKD no. 5505

Loc. No. 37, upper stream of the Haboro River, Haboro-machi, Rumoi Province, Hokkaido

Sankebetsu Formation; upper member

Miocene

***Ennucula nipponica* (Smith)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Ennucula osawanoensis* (Tsuda) see *Nucula osawanoensis* Tsuda, 1959**

***Ennucula praenipponica* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 42, pl. 1, figs. 8-11

Holotype: IGPS no. 79375 (fig. 8)

Hieda, Shimokajiro, Ena-machi, Iwaki City, Fukushima Prefecture

Honya Formation

Miocene

***Ennucula tenuis* (Montagu)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Ennucula yotsukurensis* (Hirayama) see *Nucula yotsukurensis* Hirayama, 1958 and *Nucula ventricosa* Hirayama, 1955**

***Entodesma lago-veneris* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 102, pl. 39, fig. 15

Holotype: unknown

Northern foot of the Takadate hill, a short distance W of the the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun, Miyagi Prerefcture (38 °12'N, 140 °51'E)

Moniwa Formation

Miocene

(*Thracia* ? *lagoveneris* Matsumoto by Hatai and Nisiyama (1952))

***Erycina sendaiensis* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 254, pl. 34, figs. 16, 17

Holotype: SM no. 2448

Goroku cliff along the right bank of the Hirosegawa river, Aoba-ku, Sendai City, Miyagi Prerefcture (38 °16'N, 140 °49'E)

Tatsunokuchi Formation

Pliocene

***Euciroa (Euciroa) kannoi* Noad, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 94, pl. 3, figs. 20a-22, pl. 4, fig. 22

Holotype: IGUT no. 10422, Paratype: IGUT nos. 10425-1, -2, 10423

Loc. no. 315: Cliff at north of Chinen Primary School, Chinen-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Eucrassatella (Nipponocarssatella) osawanoensis* (Tsuda) (*Crassatellites (Eucrassatella) osawanoensis* Tsuda by Masuda and Noda (1976))**

***Ezocallista brevisiphonata* (Carpenter)** reported by Iwai (1961) from the Pliocene Totezawa Formation, Aomori Prefecture

***Ezocallista kurodae* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 110, pl. 12, figs. 1a-3

Holotype: IGPS no. 79384. (fig. 1)

Karasawa, Kuroda, Tabito-mura (Kuroda, Iwaki City), Fukushima Prefecture

Iwaki Formation

Oligocene

(*Saxidomus kurodae* (Kamada) by Masuda and Noda (1976))

***Fabulina nitidula* (Dunker)** reported by Hatai, Masuda and Suzuki (1961) from the Pliocene (Pleistocene) Hamada Formation, Aomori Prefecture

***Felaniella (Zemysia) ohtai* Kase and Miyauchi, 1996**

Venus, Vol. 55, no. 2, p. 99, figs. 1-4, 7, 8

Holotype: NSMT no. Mo-70529, Paratype: NSMT nos. Mo-70530, -70531

From off Yuchi (about 28 m depth), Wakkanai, Hokkaido

Recent

(Fossil species were reported from the Pleistocene Sawane Formation, Niigata Prefecture and Upper Pliocene Sasaoka Formation, Akita Prefecture in Kase et al. (above cited)).

***Felaniella usta* (Gould)** reported by Itoigawa (1956) from the Miocene Tsuzuki Formation, Kyoto Prefecture

***Fimbria yaeyamaensis* Masuda and Sato, 1988**

Saito Ho-on Kai Spec. Pub., no. 2 (Prof. T. Kotaka Commem. Vol.), p. 445, pl. 3, figs. 7, 8

Holotype: IGPS no. 99714, Paratype: IGPS no. 99724

Sea cliff at Nishizaki, about 1 km NW of Nakano, Taketomi-cho, Iriomote-jima, Okinawa Prefecture

Iriomote Formation of the Yaeyama Group

Miocene (early Miocene)

***Fortipecten kenyoshiensis* (Chinzei)** see ***Pecten (Fortipecten) kenyoshiensis* Chinzei, 1960**

***Fortipecten kuroishiensis* Kotaka and Noda, 1967**

Saito Ho-on Kai Mus. Res. Bull., no. 36, p. 40, pl. 1, fig. 21

Holotype: IGPS no. 90763

Locality no. 10, downstream of the Karasuzawa Dam of Nakano-gawa, Kuroishi City, Aomori Prefecture

Ogawara Formation

Miocene

***Fortipecten takahashii* (Yokoyama)** see ***Pecten takahashii* Yokoyama, 1930**

***Frigidcardium (Tobarum) tobaruensis* Noda, 1988**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 74, pl.19, figs. 12a-b

Holotype: IGUT no. 11311

Loc. no. 82-20-1; Miyagishima, Okinawa Prefecture

Shinzato Formation

Pliocene

***Gafrarium (Circe) hanzawai* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 245 (17), pl. 11 (1), figs. 14a-15b

Holotype: IGPS no. 51348 (figs. 14a-b), Paratype (figs. 15a-b) Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

***Gari (Psammocola) ibarakiensis* Noda, Kikuchi and Nikaido, 1994**

Sci. Rep., Inst. Geisci., Univ. Tsukuba, Sec. B, vol. 15, p. 94

Holotype: IGUT no. 18012, Paratype: IGUT no. 18013

Loc. no. 23; about 500 m S of Satomae, along the Tamagawa River, Daigo-machi, Kuji-gun, Ibaraki Prefecture Paratype loc. no. 20, about 1 km S of Satomae, along the Tamagawa River, Daigo-machi, Kuji-gun, Ibaraki Prefecture
Tamagawa Formation
Miocene

***Gari (Gari) pitogoensis* Kotaka and Noda, 1977**

Geol. Palaeont. Southeast Asia, vol. 18, p. 145, pl. 25, fig. 8

Holotype: IGPS no. 95086

Road-side cliff, about 500 m south of Amuntay, western part of Bondoc Peninsula, Philippines
Pitogo Formation
Miocene

Gastrana yantaiensis* (Crosse and Debeaux)** reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture (Heteromacoma irus* (Hanley)** by Hatai and Nisiyama (1952))

***Geloina hashimotoi* Kanno, 1978**

Geol. Palaeont. Southeast Asia, vol. 19, p. 108, pl. 14, figs. 1-3, 6, 7

Holotype: JUE no. 10001, Paratype: JUE no. 10002

Roadside cutting exposed at M. 112+3/4, Kuching-Simanggang Road, about 100 m N of the bridge over the Sungai Entulang River, West Sarawak, Malaysia
Silantek Formation
Upper Eocene

***Geloina hokkaidoensis* (Nagao and Otatsume)** see ***Polymesoda (Geloina) hokkaidoensis* Nagao and Otatsume, 1943**

***Geloina stachi* Oyama, 1950**

Rep. Geol. Surv. Japan, no. 132, p. 12, pl. 3, figs. 1, 2a-b

Holotype: GSJ no. 3847 (figs. 2a-b)

Kakebata (left side cliff of the Kubusu River at Kakehata), Yatsuo-machi, Nei-gun, Toyama Prefecture
Kakebata Formation (Kurosedani Formation)
Miocene

***Geloina yemanei* Oyama, 1950**

Rep. Geol. Surv. Japan, no. 132, p. 13, pl. 3, figs. 3a-b

Holotype: GSJ no. ? (missing)

Kakebata (leftside cliff of the Kubusu River, at Kakehata), Yatsuo-machi, Nei-gun, Toyama Prefecture
Kakebata Formation (Kurosedani Formation)
Miocene

Gigantocallista* Takagi, n. gen. 1990**, type species: *Pitar sendaica* Nomura, 1938 described from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture (Gigantocallista sendaica* (Nomura)** by Takagi (1990))

***Glans naomiae* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 325, pl. 35, figs. 13a-14

Holotype: IGPS no. 90878

Loc. No. 35, Sea coast, about 500 m N of the outlet of the Fushimi-gawa, Konami, Suzu City, Ishikawa Prefecture; 37° 27'48"N, 137° 21'25"E

Higashi-Innai Formation

Miocene

***Glans sagamiensis* Kuroda and Habe, 1961** described from the Sagami Bay; living species

***Gloripallium crassivenium* (Yokoyama)** see ***Pecten crassivenium* Yokoyama, 1929**

***Gloripallium izurensis* Masuda, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 31, p. 227, pl. 32, figs. 4-5b

Holotype: IGPS no. 90541 (figs. 5a-b), Paratype: DGS no. 3578 (fig. 6)

Izura, Otsu-machi, Kitaibaraki City, Ibaraki Prefecture; 36° 49'06"N, 140° 48'02"E

Kokozura Formation

Miocene

***Gloripallium miurensis* (Yokoyama)** see ***Pecten miurensis* Yokoyama, 1920**

***Gloripallium satowi* (Yokoyama)** see ***Pecten (Chlamys) satoi* Yokoyama, 1928**

***Glossus (Aralocardia) teshioensis* Noda and Amano, 1985**

Human Culture and environmental studies in Northern Hokkaido 6, Univ. Tsukuba, p. 9, pl. 5, figs. 8a-c

Holotype: IGUT no. 11009

Loc. no. 84-01; along the Sakashinosawa Forest Road, Teshio-cho, Hokkaido

Yuchi Formation

Pliocene

***Glycymeris nipponicus* (Yokoyama)** reported by Kaseno and Matsuura (1965); miss spell ; see ***Glycymeris nipponicus* (Yokoyama)**

***Glycymeris albolineata* (Lischke): *Pectunculus alobo-lineatus* Lischke** (1872; Malakozool. Blatt., vol. 19, p. 108, pl. 9, figs. 11, 12); Holotype: IGPS no. 36013 (Nagao's fig. 14), Tokyo Bay, Recent

***Glycymeris altoumbonata* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 28, pl. 3, fig. 14

Holotype: GS no. 36013

The Hoshuyama Mine (about 200 m S of the bridge E of Kawamagari, and about 600 m W of the village office at Daigyoji, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture (33°28'36"N, 130°52'14"E)

Doshi Formation

Upper Eocene

(miss spell of Genus name; *Glycymeris altoumbonata* Nagao))

***Glycymeris chitanii* Yokoyama, 1929**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 2, no. 9, p. 394, pl. 75, fig. 3 (miss spell as *Glycymeris chitanii*)

Holotype: UMUT no. ? (not found, noted by Matsukuma 1979)

“Sandy shale” at beach, south of the river Petroleum, Saghalin, Russia

Bed II of Yokoyama (1929)

Uncertain (may be Miocene)

***Glycymeris cisshuensis* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 155-156

Holotype: Geol. Surv. Chosen, no. 70 (UK no. CC100201 (left valve) (by Matsukuma, 1979, Venus, vol. 38, no. 2, p. 104)

Kinshodo, Eihokumen, Kisshu-gun, Kankyo-hokudo, North Korea

Mankodo Formation (Banko Sandstone of the Meisen Group by Matsukuma (1979)

Miocene

***Glycymeris cisshuensis* var. *compressa* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 30, pl. 3, figs. 25, 25a-c

Holotype: GS no. 36001

(Beach rocks of the sea coast about 1.2 km NEE of) Sakamizu, Shimago-mura, Onga-gun, Fukuoka Prefecture; 33°54'08"N, 130°43'02"E)

Wakita Formation

Oligocene

(miss spell of genus; *Glycymeris cisshuensis compressa* Nagao): synonymous with *Glycymeris (Veletuceta) cisshuensis* Makiyama by Matsukuma (1986))

***Glycymeris compressa* Kanno, 1956**

Trans. Proc. Palaeont. Soc. Japan, N, S., no. 24, p. 269, pl. 38, figs. 6a-b, 8

Holotype: TKD no. 5541 (figs. 6a-b), Paratype: TKD no. 5542 (fig. 8)

A road side cliff, about 600 m W of Akashiba, Shinchi-mura, Fukushima Prefecture

Akashiba Formation

Miocene

(*Glycymeris kannoi* Matsukuma, 1979 n. n. as a type for above species because of junior homonym of *Glycymeris cisshuensis compressa* Nagao, 1928)

***Glycymeris convexa* Ozaki, 1954**

Bull. Nat. Sci. Mus., N. S., vol. 1, no. 1 (no. 34), p. 14, pl. 7, figs. 6, 7

Holotype: NSM no. 4308

Beach on the western end of Tokawa village, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

***Glycymeris crassa* Kuroda, 1931**

In Honma F. ed., Shinshu chubu chisitsushi (Geology of central Shinano), p. 29, pl. 12, fig. 90

Holotype: GK JC no. 610001 (fig. 90)

(Bank of the Sai-kawa, 200 m W of of) Myoga, Higashikwasate-mura, Higashichikuma-gun, Nagano Prefecture (36°23'N, 137°57'E); Bank of the Saikawa, Myogairiguchi, Higashikawade, Akashina-machi, Higashichikura-gun, Nagano Prefecture (by Matsukuma, 1979)

Bessho Formation (Aoki Formation by Matsukuma (1979))

Miocene

(*Glycymeris ikezawensis kurodai* Matsukuma, 1979 n. n. as a type for above species by Matsukuma (1979; Venus, vol. 38, no. 2, p. 99))

***Glycymeris crassitesta* Ozaki, 1954**

Bull. Nat. Sci. Mus., N. S., vol. 1, no. 1 (no. 34), p. 15, pl. 8, figs. 1, 2

Holotype: NSM no. 4309

Beach on the western end of Tokawa village, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

(Miss spell of above species used as *Glycymeris crassicosta* Ozaki (MS) (Ozaki, 1954, Bull. Nat. Sci. Mus., Tokyo, New Ser., vol. 1, no. 2 (no. 34), p. 53, Tab. 2) by Matsukuma (1979, Venus, vol. 38, no. 2, p. 105))

Glycymeris derelicta (Yokoyama) reported by Nomura and Zinbo (1935) from the Miocene Yanagawa Formation, Fukuhima Prefecture; see *Pectunculus derelictus* Yokoyama, 1928

***Glycymeris echigoensis* Kanehara, 1940**

Bull. Imp. Geol. Surv. Japan, vol. 27, no. 2, p. 8, pl. 1, figs. 1a-c

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Stream-side of small valley (Hiyakkozawa) about 1 km SEE of the small bridge at Kogomo and about 700 m NNE of the primary school at Komatsukura, Higashitakezawa-mura, Koshi-gun, Niigata Prefecture (37°18'24"N, 138°55'47"E)

Ota Formation
Pliocene

***Glycymeris flabellata* Kanno, 1956**

Trans. Proc. Palaeont. Soc. Japan, N, S., no. 24, p. 268, pl. 38, figs. 9a-13

Syntype: TKD no. 5540

A valley cliff about 200 m upstream of the Tamagawa reservoir, Minami-ide, Ouchi-mura (Marumori-machi), Igu-gun, Miyagi Prefecture

Yoshigasawa Formation

Miocene

(*Glycymeris miyagiensis* Kanno by Masuda and Noda (1976) because secondary junior homonym of *Pectunculus flabellatus* Tenison-Woods, 1978; Trans. Proc. Roy. Soc. Victoria, vol. 14, art. 9, p. 61-62)

***Glycymeris formosana* (Yokoyama) see *Pectunculus formosanus* Yokoyama, 1928**

***Pectunculus formosanus* Yokoyama, 1928**

Imp. Geol. Survey of Japan Rep., no. 101, p. 106, pl. 18, figs. 1-3

Syntype: Not described

Zenpobi, Kao Hsiung; Tenshi and Kodenko, Shiko-go, Miaoli; Suijuntou, Sankyaku, right bank off the Taan Chi; Sanko, Injurin and Chokokan, Taikei-go, Miaoli; Kwanshirei, Paishatun, Miaoli, Taiwan

Tokushan Formation

Plio-Pleistocene (Pleistocene)

***Glycymeris fulgurata* (Dunker, 1877)** known from living species in Japan

***Glycymeris gorokuensis* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 19, no. 2, p. 246, pl. 33, figs. 12-14

Holotype: SM no. 16142 (fig. 12), Paratype: SM no. 2200

Goroku cliff along the right bank of the Hirosegawa-River, Aoba-ku Sendai City, Miyagi Prefecture (38°16'N, 149°49'E)

Tatsunokuchi Formation

Pliocene

***Glycymeris hanzawai* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 16, p. 152 (44), pl. 5 (1), figs. 3a-b

Holotype: IGPS no. 50196

Near Kamikatetsu, Kikai-cho, Kikaijima, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Tucetona hanzawai* (Nomura and Zinbo) by Matsukuma (1979))

***Glycymeris (Tucetilla) hirayamai* Matsukuma, 1986**

Mem. Nat. Sci. Mus., no. 19, p. 97, figs. 2D-F

Holotype: NSMT-Mo61449, Paratype: NSMT-Mo61450

A right river cliff near the junction of the Rivers Arakawa and Urayamakawa, about 300 m N of Urayamaguchi railway station of Chichibu Line, Kuna, Chichibu-gun, Saitama Prefecture

Hiranita Formation

Middle Miocene

***Glycymeris idensis* Kanno, 1956**

Trans. Proc. Palaeont. Soc. Japan, N, S., no. 24, p. 267, pl. 38, figs. 1a-5

Holotype: TKD no. 5536 (figs. 1a-b), Paratype: TKD no. 5537

A valley cliff about 150 m in the upper stream of the Tamagawa reservoir, Minami-ide, Ouchi-mura (Marumori-machi), Igu-gun, Miyagi Prefecture

Yoshigasawa Formation; middle fossil zone of the formation

Miocene (late Mioene)

***Glycymeris ikebei* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 21, pl. 6, figs. 23a-b, pl. 7, figs. 1a-2

Holotype: MFM no. 10019, Paratype: MFM nos. 10020, 10021

Yamanouchi-ST. 281, Akeyo-cho, Mizunami City, Gifu Prefecture (Loc. no. 87)

Yamanouchi Member of the Mizunami Group in the Iwamura Basin

Miocene

(Synonymous with *Glycymeris (Veleucea) cisshuensis* Makiyama, by Matsukuma (1986))

***Glycymeris ikezawensis kurodai* Matsukuma, 1979** n. n. as a

type for *Glycymeris crassa* Kuroda, 1931 in Homma by Matsukuma (1979; Venus, vol. 38, no. 2, p. 99): see *Glycymeris crassa* Kuroda, 1931

***Glycymeris ikusakensis* Tanaka, 1960**

Jour. Shinshu Univ., no. 9, p. 109, pl. 1, figs. 9a-13

Holotype: Shinshu Univ., no. 236 or 233; Paratype: Shinshu Univ., nos. 234, 235

Small path-side cliff along Ikezawa, Ikusaka-mura, Higashichikuma-gun, Nagano Prefecture

Omi Formation

Miocene

***Glycymeris imperialis* Kuroda, 1934** (Venus, vol. 4, no. 4, p.

201-203, pl. 4, figs. 1-5) originally described based on Recent specimen from the Sagami Bay, Shizuoka Prefecture

***Glycymeris iriomotensis* Masuda and Sato, 1988**

Saito Ho-on Kai Spec. Pub., no. 2 (Prof. T. Kotaka Commem. Vol.), p. 443, pl. 1, figs. 8-14

Holotype: IGPS no. 99712, Paratype: IGPS no. 99719

Sea cliff at Nishizaki, about 1 km NW of Nakano, Taketomi-cho,

Iriomote-jima, Okinawa Prefecture
Iriomote Formation of the Yaeyama Group
Miocene

***Glycymeris izumoensis* Matsukuma and Okamoto, 1986**

Mem. Nat. Sci. Mus., no. 19, p. 95, figs. 2a-c
Holotype: NSMT-Mo 61507, Paratype: NSMT-Mo 61508, 61509, 61510, GSEH-OKS 020-024
A small cliff at Sugawara, Kamiyama-cho, Izumo City, Shimane Prefecture; Paratype (fig. A) occurred from a road-side cliff about 600 m NE of holotype locality
Fujina Formation
Miocene

***Glycymeris kamoensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.) Spec. Vol., no. 3, p. 123, type *Pectunculus* sp. Yokoyama, 1925 (Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 9, pl. 1, fig. 17)
Holotype: UT no. ?
Miyanosaku, Shimoyata (Iwaki City), Fukushima Prefecture
Kamenoo Formation
Miocene
(*Glycymeris* sp. by Masuda and Noda (1976))

***Glycymeris kannoi* Matsukuma, 1979 n. n.**

Venus vol. 38, no. 2, p. 100, as a type *Glycymeris compressa* Kanno, 1956 (Trans. Proc. Palaeont. Soc. Japan, N, S., no. 24, p. 269, pl. 38, figs. 6a-b, 8) because of junior homonym of *Glycymeris cisshuensis compressa* Nagao, 1928
Holotype: TKD no. 5541 (figs. 6a-b), Paratype: TKD no. 5542 (fig. 8)
A road side cliff, about 600 m W of Akashiba, Shinchi-mura, Fukushima Prefecture
Akashiba Formation
Miocene

***Glycymeris krassa ikezawaensis* Tanaka, 1960**

Jour. Shinshu Univ., no. 9, p. 105, pl. 1, figs. 6a-7, 11
Holotype: Shinshu Univ. no. 221, Paratype: SU nos. 217, 218, 220, 224-226
Small path-side cliff along Ikezawa, Ikusaka-mura, Hihashichikuma-gun, Nagano Prefecture
Omi Formation
Miocene
(May be miss spell of *G. crassa ikezawaensis* Tanaka: *Glycymeris ikezawaensis* Tanaka by Matsukuma (1979, Venus, vol. 38, no. 2, p. 108))

***Glycymeris k-suzukii* Oinomikado, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 539, p. 673, pl. 20, figs. 2, 3
Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)
Near the bridge 150 m W of the shrine, about 400 m W of Toinosawa, Iwadaira-mura, Kitakanra-gun (Takasaki City),

Gunma Prefecture (36 °18'N, 138 °58'E)
Itahana Formation
Miocene

(*Glycymeris ksuzukii* Oinomikado: synonymys with *Glycymeris (Veletuceta) cisshuensis* Makiyama, by Matsukuma (1986))

***Glycymeris matumoriensis* Nomura and Hatai, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 123, pl. 17, fig. 2
Holotype: SM no. 2631
Southern cliff of a large pond immediate E of the contact point of the two paths about 1.3 km NE of the shrine at) Matsumori, Nanakita-mura, Miyagi-gun (Izumi-ku, Sendai City), Miyagi Prefecture (38 °19'07"N, 140 °55'47"E)
Nanakita Formation
Miocene

***Glycymeris minochiensis* (Yokoyama): see *Pectunculus minochiensis* Yokoyama, 1925**

***Glycymeris minoensis* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 136, pl. 5, figs. 3, 4
Holotype: JC no. 1300001
Loc. No. 113, Kamigiri, Iwamura-machi, Ena-gun, Gifu Prefecture
Kubohara Sandstone
Miocene

***Glycymeris miyagiensis* Kanno, 1960**

Japan Soc., Promot. Sci., Ueno, Tokyo, p. 208. Type, *Glycymeris flabellata* Kanno, 1956, p. 268, pl. 38, figs. 9a-13
Syntype, TKD no. 5540, Paratype?: TKD no. 5668
A valley cliff about 200 m upstream of the Tamagawa reservoir, Minami-ide, Ouchi-mura, Igu-gun (Marumori-machi), Miyagi Prefecture: Paratype; Loc. No. 613, a small valley cliff, about 500 m N of the Shibahara mineral spring, Shibahara, Arakawa-mura, Saitama Prefecture
Yoshigasawa Formation (Syntype), Nagura Formation and Nenokami Sandstone (Paratype)
Miocene and Oligocene (late Miocene and early Miocene)

***Glycymeris munda* (Sowerby, 1903)** originally reported *Pectunculus mundus* based on Recent species (type locality: Hirado, Nagasaki Prefecture)

***Glycymeris nakamurai* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 30, pl. 1, figs. 5
Holotype: GK no. 206
Dainich (about 150 m W of Honohashi, Saigo-mura, about 2.5 km N of Kakegawa railway station, Shizuoka Prefecture; 34 ° 47'02"N, 138 °00'06"E)
Dainichi Formation

Pliocene

***Glycymeris nakosoensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 88, pl. 25, figs. 15, 16

Holotype: GS no. 72502

A small cliff in front of the dormitory of the Nippon Coal Mining Company, Nakoso-machi, Iwaki-gun, Fukushima Prefecture (36°53'N, 140°44'07"E)

Iwaki Formation

Oligocene

***Glycymeris (Glycymeris) nipponica* (Yokoyama) see *Pectunculus nipponica* Yokoyama**

***Glycymeris nozokiensis* Hatai and Nisiyama, 1951**

Saito Ho-on Kai Mus., Res. Bull., no. 21, p. 1. Figs. 1, 2

Holotype: IGPS no. 72883

Road side cutting on the main highway about 500 m S of the Nozoki Primary School, Nozoki-mura, Yamagata Prefecture; 38°58'13"N, 140°31'28"E

Nozoki Formation

Miocene

(*Tucetona nozokiensis* (Hatai and Nisiyama) by Masuda and Noda (1976))

***Glycymeris ogawaraensis* Kotaka and Noda, 1967**

Saito Ho-on Kai Mus., Res. Bull., no. 36, p. 38, pl. 2, fig. 1

Holotype: IGPS no. 90739

Down stream of the Karasuzawa Dam of the Nakanogawa, Ogawara, Kuroishi City, Aomori Prefecture

Ogawara Formation

Miocene

***Glycymeris oinouyei* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 74, pl. 3, fig. 1

Holotype: SM no. 5569

(A road-side cliff about 1km S of the) Narusawa hot-spring, Genbi-mura, Nishiiwai-gun, Iwate Prefecture (39°10'N, 140°52'05"E)

(Narusawa Formation)

Miocene

***Glycymeris (Glycymeris) okinawaensis* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 79, pl. 2, figs. 17-20

Holotype: IGUT no. 10344, Paratype: IGUT no. 10343-2, -3

Loc. no. 12: Cliff of west side of Yakena-harbour, Yakena, Yonagusuku-mura, Nakagami-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Glycymeris (Tucetona) osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 70, pl. 1, figs. 5a-b

Holotype: JC no. 1400005

Tsuzara, Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

(*Tucetona osawanoensis* (Tsuda) by Masuda and Noda (1976))

***Glycymeris oshimaensis* Noda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Vol. 34, no. 3, p. 229, pl. 16, fig. 8

Holotype: IGPS no. 790578

Loc. No. 924, Road side cliff, about 300 m E of the pass between Oshima and Hosono, Matsunoyama-machi, Higashikubiki-gun, Niigata Prefecture

Kubiki Formation

Miocene

***Glycymeris osozawensis* Kanno, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 24, p. 270, pl. 38, figs. 14a-c

Holotype: TKD no. 5543, Paratype: TKD no. 5544

Osozawa, Akebono mura, Minami-koma-gun, Yamanashi Prefecture

Shizukawa Sandstone of upper part of the Shizukawa Group

Pliocene

***Glycymeris pilsbryi* (Yokoyama) see *Pectunculus pilsbryi* Yokoyama, 1920**

***Glycymeris rhyconelloides* Nomura and Hatai, 1939**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 5, pl. 1, fig. 6

Holotype: GS no. 60020

(Lake cliff about 300 m NWW of Jyakusan, N of) Fujina, Tamayu-mura, Yatsuka-gun, Shimane Prefecture (35°26'N, 133°02'E)

Fujina Formation

Miocene

Glycymeris rotunda (Dunker, 1882; originally described as living species from Tokyo Bay) reported by Makiyama (1927) from the Pliocene Tenno Formation, Shizuoka Prefecture

***Glycymeris subcostata* Matsukuma and Okamoto, 1986**

Mem. Nat. Sci. Mus., no. 19, p. 93, figs. 1, 2

Holotype: NSMT-Mo 61512, Paratype: NSMT Mo-nos. 61513-61516, GSEH-OKS 006-019

A road-side cliff, east of Nange, Kamihigashikawazu-cho, Matsue City, Shimane Prefecture: Paratype; Nishikawazu-cho, Matsue City, Shimane Prefecture

Kawazu Tuff Member of the Matsue Formation

Miocene

***Glycymeris subpectiniformis* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 16, p. 151

(43), pl. 5 (1), figs. 2a-b
 Holotype: IGPS no. 50200
 Near Kamikatetsu, Kikai-cho, Kikaijima, Oshima-gun,
 Kagoshima Prefecture
 Ryukyu Limestone
 Pleistocene
 (*Melaxinaea subpectiniformis* (Nomura and Zinbo) by
 Matsukuma (1979))

***Glycymeris shutoi* Matsukuma, 1981**

Venus, vol. 40, no. 1, p. 7, pl. 1, figs. 1-5
 Holotype: NSMT-Mo 49655, Paratype: NSMT-Mo nos.
 49655a-g, 53573a-b, 58320a-b, 58321a-b
 Ankyaba, Kakeroma Island, Amami Islands, Kagoshima
 Prefecture; Paratypes are distributed in
 Miyako-Okinawa-Amami Islands, SW Islands, Japan
 Recent

***Glycymeris taiwanensis* Lan, 1976** n. n. for *G. formosa*
 (Yokoyama) (objective junior synonym; invalid by Matsukuma
 (1979))

***Glycymeris totomiensis* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p.
 29, pl. 1, figs. 1-4
 Syntype: GK no. 203
 Honohashi (About 150 m W of Honohashi, Saigo-mura, and
 about 2.5 km N of the Kakegawa railway station, Shizuoka
 Prefecture; 34°47'02"N, 138°00'06"E)
 Dainichi Sandstone
 Pliocene

***Glycymeris vestita* (Dunker, 1877)** (Type Loc: Japan) known
 from living species around Japan (may be a junior synonym of
***Glycymeris aspersa* (A. Adams and Reeve, 1850)** by
 Matsukuma (1979))

***Glycymeris vestitoides* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 33, pl. 5, figs. 4-7
 Holotype: SM no. 6055 (fig. 4)
 (Rock beach in front of the Tanosawa railway station) Tanosawa,
 Odose-mura, Nishitsugaru-gun, Aomori Prefecture (40°45'07"N,
 140°02'03"E)
 Tanosawa Formation
 Miocene
 (Synonymous with ***Glycymeris (Veletuceta) cisshuensis***
Makiyama, by Matsukuma (1986))

***Glycymeris yamaguchii* Hayasaka, 1956**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 16, pl. 2, figs. 1a-2c
 Holotype: IGPS no. 77373 (figs. 1a-c)
 Loc. No. 1, cliff of the Takasegawa River west of Takakura,
 about 5 km SW of the Namie-machi Railroad station on the
 Joban line, and Loc. 2, path side cutting at Onoda, about 2.5
 km NE of the Loc. No. 1., Namie-machi, Futaba-gun,

Fukushima Prefecture
 Ishiguma Formation
 Pliocene
 (Secondary homonym: ***Glycymeris hayasakai* Ogasawara (MS)**
(n. n.))

Glycymeris yamakawai* (Yokoyama) see *Pectunculus
***yamakawai* Yokoyama, 1922**

Glycymeris yamasakii* (Yokoyama) see *Pectunculus
***yamasakii* Yokoyama, 1925**

Glycymeris yessoensis* (Sowerby) see *Pectunculus yessoensis
Sowerby 1889

***Glyptoactis* (s. s.) *philippinensis* Kanno, O'Hara and**
Caagusan, 1982

Geol. Palaeont. Southeast Asia, vol. 24, p. 67, pl. 15, figs. 2a-3b
 Holotype: JUE no. 10011, Paratype: JUE no. 10012
 River floor and the river side bank of the Madlum River, near
 the Tartaro Bridge, San Miguel, Bulacan, Central Luzon,
 Philippines
 Tartaro Formation
 Upper Miocene

***Gonimyrtea annulata* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 85, pl.
 12, fig. 2
 Holotype: IGUT no. 10382, Paratype: IGUT nos. 10383-2, -3, -4
 Loc. no. 348: Road side cliff of Route no. 331, about 500 m N
 of Kuteken, Chinen-mura, Shimajiri-gun, Okinawa Prefecture
 Shinzato Formation
 Pliocene

***Halicardia akitaensis* Ogasawara and Takayasu, 1982**

Venus, vol. 41, no. 3, p. 199, pl. 1, figs. 1a-f
 Holotype: IGPS no. 96013
 A road-side cliff about 500 m downstream from Fudotaki
 (water-fall), Iwami-Sannai, Kawabe-gun, Akita Prefecture
 Sunakobuchi Formation
 Miocene (middle Miocene, Blow's N9 zone)

***Halicardia miyagiensis* Fujiwara, 1992**

Saito Ho-on Kai Mus. Nat. Hist., Res. Bull., no. 60, p. 9, figs.
 5-1, -4
 Holotype: IGPS no. 101555 (pl. 1, figs. 1a-d, Loc. no. 1),
 Paratype: IGPS nos. 101556, 101557, 101558 (Loc. no. 2)
 Loc. no. 1; Nishino-iri, Tomiya-cho, Kurokawa-gun, Miyagi
 Prefecture; 38°20'37"N, 140°54'18"E, Loc. no. 2; Cliff about
 300 m NE from Itasaki, Tomiya-cho, Kurokawa-gun, Miyagi
 Prefecture
 Nanakita Formation; lowermost part
 Late Miocene

Hataiarca Noda, 1966 (n. subgen.)

Type-species *Anadara kakehataensis* Hatai and Nisiyama (1949, Jour. Paleont., vol. 23, no. 1) described from the Miocene Kurosednani Formation, Toyama Prefecture

Hataiyoldia Kamada, 1962 (n. subgen.)

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 55. Type-species *Yoldia tokunagai* Yokoyama (1925, Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 7, p. 10, pl. 2, figs. 12-13) described from the Miocene Kamenoo Formation, Fukushima Prefecture

Hawaiarca jamaicaensis Noda, 1986 n. n.

Trans. Proc. Paleont. Soc. Japan, Spec. Pap., no. 29, p. 63, pl. 4, figs. 1-4; Type: *Barbatia donaica*, Woodring, 1925 (Carnegie Inst. Washington, D C. Publ., no. 366)
Holotype: USNM, no. 352759
Caribbean Province
Bowden Formation
Middle Miocene

“*Hedecardium*” *ogurai* (Otuka) by Oyama et al., 1994 (Bull. Mizunami Foss. Mus., no. 21, p. 24) see *Cardium* (*Bucardium*) *ogurai* Otuka, 1938

Heteroclidus (?) *pulchellus* (Yokoyama) see *Pandora pulchella* Yokoyama, 1926

Heteromacoma yantaiensis (Crosse and Debeaux): *Gastrana yantaiensis* and *Tellina yantaiensis*

Hiatella arctica (Linnaeus) reported by Nomura and Hatai (1935) from the Pleistocene Daishaka Formation, Aomori Prefecture

Hiatella orientalis (Yokoyama) see *Soletellina orientalis* Yokoyama, 1920

Hiatella minoensis (Yokoyama) see *Soletellina minoensis* Yokoyama, 1926

Hubertschenckia Takeda, 1953 (n. gen.), Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 85; Type-species, *Tapes ezoensis* Yokoyama, 1890, reported from the Upper Eocene Poronai Formation, Hokkaido

Hubertschenckia ezoensis (Yokoyama) see *Tapes ezoensis* Yokoyama, 1890

Humilaria perlaminosa (Conrad) reported by Amano (1998: Venus, vol. 57, no. 4, p. 275) from the Pliocene Kuwae Formation, Niigata Prefecture

Hunphreyia (*Nipponoclava*) *yokoyamai* (Shikama, 1954) by Majima (1994)

Bull. Nat. Sci. Mus., Ser. C (Geol. Paleont.), vol. 20, no. 1, p. 28, figs. 5, 7-1a-4, 8, 9

Lectotype: UMUT CM 23537 (designated by Majima, 1994)

Northern slope of hill near the boundary between Yasuda-machi and Teno-machi, about 600 m NE of the shrine at Ono, Tano-machi, Aki-gun, Kochi Prefecture
Ananai Formation of the Tonohama Group
Upper Pliocene

Hyriopsis mabutii Oyama, 1950

Jour. Geol. Soc. Japan, vol. 56, no. 652, p. 36, text-fig. 2

Holotype: RINT (Res. Inst. Nat. Resour.) no. ?

Right shore of Sorati-gawa, Ashibetsu-machi, Ishikari Province, Hokkaido

Upper *Corbula*-bearing formation? of Ishikari Series
Paleogene

Hyriopsis matsuurensis Ueji, 1934

Venus, vol. 4, no. 6, p. 342-343, pl. 5, figs. 1, 2, pl. 6, fig. 12

Holotype: JC no. ? (pl. 5, figs. 1, 2), Paratype: JC no. ? (pl. 6, fig. 12)

Nojima Island, Kosaza-tyo (-cho), Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation
Miocene

Inversidens isikariana Suzuki, 1942

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 150, pl. 18, figs. 3, 4

Holotype: UH 9052

Pirakesyomanai-zawa in the vicinity of Moziri, Akapira-mura, Sorati-gun, Hokkaido

Lower *Corbicula*-bearing Formation of the Ishikari Group
Oligocene

Inversidens ? *japanensis* (Lea) reported by Omori and Ibaraki (1966)

Inversidens kobayashiensis (Otuka) see *Unio kobayashiensis* Otuka, 1934

Isognomon (Isognomon) hataii Noda and Furuichi, 1972

Venus, vol. 31, no. 3, p. 120, text-fig. 1

Holotype: IGPS no. 91766

West of Abuzaki, Tonosho-cho, Shodo-gun, Kagawa Prefecture
Teshima Formation
Miocene (Eocene)

Isognomon (Melina) minoensis Itoigawa, 1960

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 265, pl. 2, fig. 4

Holotype: ESN no. 20005

Oginoshima (L. 15), Kamado-machi, Mizunami City, Gifu

Prefecture
Shukunohora Sandstone of the Oidawara Formation
Miocene (lower Miocene)

***Isognomon pseudotomiyasui* Mizuno, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 4, p. 13 (237), text-figs. 7, 8, pl. 2, figs. 3, 4

Holotype: GSJ no. 5326

Station 63-9-A3 (Adit No. 9), Coal-bearing facies of the Laki stage at the vicinity of the W. P. I.D. C. Degari Colliery in the Degari coal field, about 17 airmiles SE of Quetta, Pakistan (30° 05'N, 67° 13'E)

Degari coal-bearing sandstone (Gazij Shales of Laki)

Eocene

***Joanisiella meisensis* Makiyama, 1936**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 209, pl. 5, figs. 8, 9

Holotype: GK no. ?

Mongando, North Korea

Heiropudo stage (Heiropudo Formation)

Miocene

***Joanisiella cumingi* (Hanley) invalid see *Cycladicama cumingii* (Hanley)**

***Joanisiella cumingi kukinagaensis* Hayasaka, 1969**

Rep. Fac. Sci., Kagoshima Univ., no. 2, p. 43, pl. 2, figs. 4a-6c

Holotype: ESK no. F- 5003 (figs. 4a-b), Paratype: ESK no. F- 5004

Loc. No. 9, Cliff near the Kukinan Primary School at Kukinaga, Minamitane-machji, Kumage-gun, Kagoshima Prefecture

Osaki Formation

Miocene

(*Cycladicama cumingi kukinagaensis* (Hayasaka))

***Joanisiella takeyamai* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 2, p. 29, pl. 4, figs. 32-34, 37

Syntype: GT no. 10008

(Several meters below the dam of the Saijo-gawa, about 200 m NNE of the shobara railway station and about 500 m NEE of the bridge at) Suketo, Shobara-machi, Hiba-gun, Hiroshima Prefecture (34° 51'43"N, 133° 01'05"E)

Shobara Formation

Miocene

(*Cycladicama takeyamai* (Otuka))

***Jouannetia hayashii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 198, pl. 5, figs. 3, 4

Holotype: TKD no. 5794 (fig. 3), Paratype: TKD no. 5795 (same locality)

Loc. No. 804, a river side cliff near the Yamada Bridge,

Yamada, Chichibu City, Saitama Prefecture.

Hiranita Formation

Miocene

***Jouannetia kamakurensis* Yokoyama, 1922**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 1, p. 120, pl. 6, fig. 10

Holotype: UT no. ?

On the coast of Kamakura, Kamakura City, Kanagawa Prefecture (precise locality unknown)

Living species

(*Penitella kamakurensis* (Yokoyama) by Habe (1977))

***Kaneharaia Makiyama*, 1936, (n. subgen.,) Mem. Coll. Sci.,**

Kyoto Imp. Univ., Ser. B, vol. 9, no. 4, art. 8, p. 213; Type species, *Dosinia kaneharai* Yokoyama, 1926 described from the Miocene Shiobara Formation, Tochigi Prefecture, Japan

***Kaneharaia ausiensis* (Ilyina, 1954) reported from Miocene**

Ausinskaya Suite (Formation), Sakhalin, Russia; *Dosinia ausiensis* Ilyina, 1954 (refer Amano and Hikida, 1999, Paleont. Res., Vol. 3, no. 4, p. 251)

***Kaneharaia kaneharai* Yokoyama see *Dosinia kaneharai* Yokoyama, 1926**

***Katelsia (Nipponomarcia) nakamurai* Ikebe, 1941**

Japan. Jour. Malacol., vol. 11, nos. 2-3, p. 50, pl. 2, fig. 1

Holotype: GK no. ? (left valve), Paratype: GK no. ?

Road-side cutting at Kurokawa, about 500 m NE of village office, Yamanouchi-mura, Koga-gun, Shiga Prefecture (34° 55'23"N, 136° 20'01"E)

Sendani (Ayugawa Formation)

Miocene

(*Nipponomarcia nakamurai* (Ikebe))

***Kellia laperousii* Deshayes reported by Yokoyama (1926) from**

the Pleistocene Shibikawa Formation, Akita Prefecture

Kotorapecten Masuda*, 1962 (n. subgen.): Type-species, *Pecten

kagamianus Yokoyama, 1923 (Japan. Jour. Geol. Geogr., vol. 2, no. 1) described from the Miocene Kimachi Formation of Shimane Prefecture

***Kotorapecten kagamianus permirus* (Yokoyama) see *Pecten permirus* Yokoyama, 1926**

***Kotorapecten tryblium* (Yokoyama) see *Pecten tryblium* Yokoyama, 1925**

***Kotorapecten tryblium* (Yokoyama) see *Pecten tryblium* Yokoyama, 1925**

***Kotorapecten yamasakii iwasakiensis* (Nomura) see *Pecten* (*Pecten*) *iwasakiensis* Nomura, 1935**

***Laevicardium* (*Trachycardium*) *angustum* (Yokoyama) see *Cardium angustum* Yokoyama, 1925**

***Laevicardium decoratum* (Grewingk)** reported by Kanno and Ogawa (1964) from the Miocene Takinoue Formation, Hokkaido

***Laevicardium pigmae* Shuto, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 37, p. 219, pl. 25, fig. 11, 14, 15

Holotype: GKL no. 4880 (fig. 15), Paratype: GKL no. 4793, 4803, 4876, 4877 and 4879

Kariyabaru (Uyeharu; MI-923), Tano-machi, Miyazaki-gun, Miyazaki Prefecture; Paratype, Kagamis pass (MI-2610), Kiyotake-machi, Miyazaki-gun, Miyazaki Prefecture
Tano Member of the Koyu Formation

Late Miocene

***Laevicardium shiobaraense* (Yokoyama)** reported by Kanno (1960) from the Miocene Saginosu Formation, Saitama Prefecture; see ***Cardium shiobarensis* Yokoyama, 1926**

***Laevicardium taracaicum* (Yokoyama)** reported by Hirayama (1955) from the Oligocene Asagai Formation, Fukushima Prefecture; see ***Cardium tracaicum* Yokoyama, 1930**

***Laevicardium yoshidense* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 176, pl. 2, figs. 5-7

Holotype: TKD no. 5683 (fig. 5), Paratype: TDK no. 5573

Loc. No. 207, a valley side cliff, upstream of a fall in Nenokami, Hikokubo, Yoshida-machi, Chichibu City, Saitama Prefecture; Paratype; Loc. No. 219b, a small valley cliff, Sakurazawa, Hio, Ogano-machi, Chichibu-gun, Saitama Prefecture
Nenokami Sandstone

Oligocene (early Miocene)

***Laevicirce soyoae* Habe, 1951**

Gen. Jap. Shells no. 2, p. 160, text fig. 353-355

Holotype: NSM no. ?

Tsushima Chanel (Soya-maru St. 475, 34 °37'00"N, 129 °13'00"E, 192 m depth) sandy mud bottom with gravels and shells

Living species

***Lamellinucula hirosei* Oyama and Nishimoto, 1988**

Bull. Mizunami Fossil Mus., no. 15, p. 3, pl. 1, figs. 2a-b, 3

Holotype: MFM no. 20012, Paratype: MFM no. 20013

Miyauchi-cho, Shobara City (Loc. 12 of Uyeda, 1986), Hiroshima Prefecture

Upper most of "lower formation" of the Bihoku Group

Middle Miocene

***Lamelliconcha kawadai* Aoki, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 17, p. 36, pl. 2, figs. 1-10, 12-15, 22

Holotype: TKD no. 5909 (figs. 4, 5)

Loc. No. 7, cliff of small valley-side at Donosaku, Kamikaatayose, Kabeya, Fukushima Prefecture; 37 °04'40"N, 140 °51'14"E

Kabeya Formation

Miocene

***Lamellinucula okutanii* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 64, pl. 1, fig. 8, pl. 3, figs. 14-15, pl. 12, figs. 12, 16

Holotype: IGUT no. 10011, Paratype: IGUT, nos. 10023-1, -6

Loc. no. 435: Road side cliff, about 500 m NW of Shikenbaru, Tamagusuku-mura, Shimajiri-gun, Okinawa Prefecture
Shinzato Formation

Pliocene

***Lamprotula divaricata* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 8, pl. 1, figs. 7, 7a

Holotype: GSJ no. 5251.

Oya coast, Shikamachi-machi, Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation

Miocene

***Lamprotula nagahamai* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 7, pl. 1, figs. 6, 6a, pl. 2, figs. 1-3a, text-figs. 2-3a

Holotype: GSJ no. 5257 (pl. 2, figs. 2, 2a)

Oya coast, Shikamachi-machi, Kitamatsuura-gun Nagasaki Prefecture

Oya Formation

Miocene

***Lamprotula nojimensis* Ueji, 1934**

Venus, vol.4, no.5, p. 284-287, text-figs.1-8

Holotype: figs.1, 2, Paratype: text-figs. 3-8

Nojima Island, Kosaza-tyo, Kitamatsuura-gun, Nagasaki Prefecture

Oya formation

Miocene

(This species has already been described by Ueji in Jour. Geol. Soc. Tokyo, vol. 41, p. 261-264, pl. 7, figs. 1-5, 1934 (in Japanese))

***Lamprotula uejii* Mizuno (MS) see below, *Lamprotula uejii* Mizuno, 1966**

***Lamprotula uejii* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 6, text-fig. 1, pl. 2, figs. 4-6

Holotype: GSJ no. 5265 (figs. 4, 4a)
 Oya coast, Shikamachi-machi, Kitamatsuura-gun, Nagasaki Prefecture
 Oya Formation
 Miocene
 (*Lamprotula uejii* Nagahama and Mizuno by Masuda and Noda (1976))

Lanceolaria pisciformis (Yokoyama) reported by Noda (1970: Trans. Proc. Palaeont. Soc. Japan, N. S., no. 77) from the Eocene Owada Formation, Hokkaido; see *Nodularia pisciformis* Yokoyama, 1932

***Lasaea striata* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 53, pl. 3, figs. 14a-b
 Holotype: UT no. ?
 Cutting along the railway at Shinagawa, Oji and Tabata, Tokyo Prefecture
 Shinagawa Bed (Tokyo Formation)
 Pleistocene (ca. 120-70 Ka)
 (*Wallucina ? striata* (Tokunaga))

Laternula limicola (Reeve) reported by Shibata (1974) in Itoigawa, Shibata and Nishimoto (1974) from the Tsukiyoshi and Yananouchi Formations, Gifu Prefecture; see *Anatina limicola* Reeve, 1863 which was assigned to synonymus with *Laternula* (*Exolaternula*) *navicula* (Reeve, 1863)

Latona minoensis Itoigawa see *Donax* (*Latona*) *minoensis* (*Itoigawa*) by Masuda and Noda (1976)

***Leda gordonis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 177, pl. 19, figs. 4, 5
 Holotype: GT no. ?
 Naganuma (Road-side cutting at Naganuma, Tosuka Ward (Totsuka-ku), Yokohama City, Kanagawa Prefecture (35 ° 22'03"N, 139 °32'05"E)
 Naganuma Formation
 Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)
 (*Saccella gordonis* (Yokoyama) by Hatai and Nisiyama (1952))

***Leda inermis* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 9, pl. 2, figs. 3, 5
 Holotype: GT no. ? (fig. 5)
 Osaku (Osaku, near the Nakoso railway station, Nakoso-machi, Iwaki-gun, Fukushima Prefecture; 36 °52'07"N, 140 °46'05"E)
 Kamenoo Formation
 Miocene
 (*Nuculana inermis* (Yokoyama) by Hatai and Nisiyama (1952))

***Leda naganumana* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 178, pl. 19, fig. 6
 Holotype: GT no. ?
 Naganuma (Road-side cutting at Naganuma, Totsuka-Ward (Totsuka-ku), Yokohama City, Kanagawa Prefecture (35 ° 22'03"N, 139 °32'05"E)
 Naganuma
 Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)
 (*Yoldia* (*Yoldia*) *naganymana* (Yokoyama) by Hatai and Nisiyama (1952))

***Leda pennula* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 9, pl. 2, fig. 7
 Holotype: designated by Hatai and Nisiyama (1952): GT, no. ?
 Takinosaku, Kamiasakawa, Ino-mura, Iwaki-gun, Fukushima Prefecture (37 °02'N, 140 °53'05"E)
 Kamenoo Formation
 Miocene
 (*Nuculana pennula* (Yokoyama) by Hatai and Nisiyama (1952))

Leda ramsayi Smith reported by Yokoyama (1920) from the Pleistocene Koshiha Formation, Kanagawa Prefecture which was re-identified *Nuculana* (*Thestyleda*) *yokoyamai* Kuroda by Hatai and Nisiyama (1952)

***Leda robai* Kuroda, 1929**

Venus, vol. 1, no. 4, append. P. 9, figs. 6-7
 Holotype: Kikuchi Coll. ?
 Toyama Bay, Japan Sea
 Living species

***Leda sadoensis* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 808, pl. 36, fig. 6
 Holotype: GT no. ?
 (Sea cliff facing the Mano Bay, about 250 m SE of the contact point of the two main roads near the primary school, Sawane-machi, Sado-gun, Niigata Prefecture; 37 °49'47"N, 139 °16'43"E).
 Sawane Formation
 Pliocene
 (*Nuculana* (*Nuculana*) *sadoensis* (Yokoyama) by Hatai and Nisiyama (1952))

***Leda yabei* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 22, pl. 4, figs. 9, 10
 Holotype: GT no. ?
 Tegasawa, Oyamada, Obisa-mura, Futaba-gun, Fukushima Prefecture (37 °08'04"N, 140 °57'06"E)
 Asagai Formation

Miocene (Oligocene)

(*Yoldia (Cnesterium) yabei* (Yokoyama) by Hatai and Nisiyama (1952))

***Ledella okumurai* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 16, pl. 6, figs. 1a-3b
Holotype: MFM no. 10001, Paratype: MFM nos. 10002, 10003
West of Sakurado, Toki-cho, Mizunami City, Gifu Prefecture
Nataki Conglomerate of the Oidawa Formation, Mizunami Group
Miocene

***Lepidodesma japonica* Mizuno, 1966**

Rep. Geol. Surv. Japan, no. 215, p. 11, pl. 2, fig. 8, text-fig. 4
Holotype: GSJ no. 5267 (left valve)
Oya coast, Shikamachi-machi, Kitamatsuura-gun, Nagasaki Prefecture
Oya Formation
Miocene

***Lepidodesma septemtrionale* Suzuki, 1942**

Japan. Jour. Geol. Geogr., vol.18, no. 4, p.154, pl.18, figs.2a, b
Holotype:UH 9051
Utashinai, Utashinai-machi, Sorachi-gun, Hokkaido
Yubari coal-bearing Formation of the Ishikari Group
Oligocene

***Lepidodesma uejii* Kuroda, 1939** reported by Nagahama and Mizuno (1965) from the Miocene Narushima Formation, Matsuura Coal-field, Nagasaki Prefecture

***Leporimetis slodkewitschi* Kafanov and Ogasawara, 1999**

n. n. for type: *Apolymetis exavata* (Sowerby), Slodkewitsch, 1936; Transact. NGRI, Ser. A, vol. 79, p. 91, pl. 7, fig. 1
Bull. Mizunami Fossil Museum, no. 26, p. 13
Holotype: CNIGRM no. ?
Materaya Voyampolka River, Eastern Kamchatka, Russia
Upper horizon of Kavranskaya Series (Etolon Formation)
Late Miocene

***Lepton nipponicum* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 41, pl. 2, figs. 5, 6
Syntype: GK no. 9
Dainichi (Valley about 350 m NW of Dainichi, Fukuroi City, Shizuoka Prefecture; 34°48'07"N, 137°56'00"E).
Dainichi Formation
Pliocene

***Leukoma itoigawae* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 76, pl. 2, figs. 12a-b
Holotype: JC no. 1400020, Paratype, JC no. 1400021 (from Yunoki)

Iwakishin (Loc. No. 18), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture: Paratype; Yunoki (Loc. No. 99), Yatsuo-machi, Nei-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation: Paratype; Yumura Aalternation of the Kurosedani Formation

Miocene

(*Leukoma (Glycydonta) itoigawae* Tsuda by Masuda and Noda (1976))

***Leukoma minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 270, pl. 2, figs. 7a-8b

Holotype: ESN no. 20021 (figs. 8a-b), Paratype: ESN no. 20022 (S 41)

Shukubora (S 41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

(*Leucoma (Veremolpa) minoensis* Itoigawa by Masuda and Noda (1976))

***Leukomoides* Ogasawara, 1976** n. gen., see below

***Leukomoides nipponica* Ogasawara, n. gen. and n. sp., 1976**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 46, no. 2, p. 52, pl. 11, figs. 3, 4

Holotype: IGCP no. 95190 (fig. 3), Paratype: IGPS no. 95191-1, -2 (fig. 4)

Loc. no. Su-3: Small road side cutting, about 1000 m W from Futamata-machi, Kanazawa City, Ishikawa Prefecture

Sunakozaka Formation

Miocene (early middle Miocene)

***Lima amaxensis* Yokoyama, 1911**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 15, pl. 3, fig. 2

Holotype: GT no. ?

(Road-side cutting on the northwestern foot of Samedake, along the river, about 400 m NE of of the contact point of the two roads at E of) Hangochi, Hondo-machi, Amakusa-shimoshima, Amakusa-gun, Kumamoto Prefecture (32°26'48"N, 130°09'18"E)

Ichoda Formation

Upper Eocene

(*Lima (Acesta) amaxensis* Yokoyama by Hatai and Nisiyama (1952))

***Lima angulata* Sowerby** reported by Yokoyama (1920) from the Pleistocene Naganuma Formation, Kanagawa Prefecture which was re-identified *Promantellum basilanica* (Adams and Reeve) by Hatai and Nisiyama (1952)

***Lima eocenica* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p.

105, pl. 21, fig. 1 (not of Rovasenda, 1892)

Lectotype (designated by Hatai and Nisiyama (1952): GS no. 35817

(Cliff behind the house immediately W of the main road about 450 m NW of the contact point of the main road at) Imada, Iccyouda-mura, Amakusa-Shimoshima, Aamakusa-gun, Kumamoto Prefecture (32 °21'26"N, 130 °05'38"E)

Sakasegawa Formation

Upper Eocene

(*Lima (Acesta) nishiyamai* (Yokoyama) by Hatai and Nisiyama (1952))

Lima goliath Sowerby reported by Yokoyama (1920) from the Pleistocene Koshiha Formation, Kanagawa Prefecture

***Lima (Acesta) goliath yagenesis* Otuka, 1939**

Jour. Geol. Soc. Japan, vol. 46, nos. 544-555, p. 27

Syntype: ERITIU no. 4242; type, *Lima goliath* Yokoyama, 1925 Jour. Fac. Sci. Imp. Univ. Tokyo, sec. 2, 1, pt. 3, p. 123, pl. 14, fig. 11 (not Sowerby, 1883)

River floor of the Yagen, near Yagen hot spring, northern foot of Osore-zan, Ohata-machi, Shimokita-gun, Aomori Prefecture

Yagen Formation

Miocene

***Lima hakodatensis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 64, pl. 3, figs. 27a-b

Holotype: UT no. ?

Cutting along the railway at Shinagawa, environs of Tokoyo Shinagawa Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

Lima japonica A. Adams reported by Yokoyama (1920) from the Pliocene Nojima Formation, Kanagawa Prefecture

***Lima (Acesta) j-suzukii* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 75, pl. 13, figs. 1-4

Holotype: UH no. 11195 (fig. 3)

Loc. No. U10, 2100 m upstream from the junction of Penkemaya creek with Yubari River, Ishikari Province, Hokkaido; 42 °58'20"N, 142 °01'50"E

Poronai Formation

Oligocene (Eocene)

(*Acesta jsuzukii* (Takeda) by Masuda and Noda (1976))

***Lima konnoi* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 1, p. 10, pl. 1, fig. 8

Holotype: GT no. 3895

Loc. C (near the house of the top of Shiroyama hill, about 450 m N of the town office at Kanbara, Kabnara-machi, Ihara-gun, Shizuoka Prefecture; 35 °07'11"N, 138 °36'15"E)

Shiroyama Formation

Miocene

***Lima (Lima) kumasoana* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1

Holotype: GS no. 35808

Probably (Cliff behind houses immediately W of the main road, about 450 m NW of the contact point of the main road and the road at Imada, Iccyouda-mura, Aamakusa-shimoshima, Amakusa-gun, Kumamoto Prefecture; 32 °21'26"N, 130 °05'38"E)

Sakasegawa Formation

Upper Eocene

***Lima (Limea) limopsis* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 154 (46), pl. 5 (1), figs. 11a-12b

Holotype: IGPS no. 50368 (fig. 11), Paratype: IGPS no. ? (fig. 12)

Kamatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

***Lima (Acesta) nagaoui* Oyama, 1951 (n. n.)**

Miner. and Geol., vol. 4, nos. 1-2, p. 56, type *Lima goliath* Yokoyama, 1927, Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, pt. 4, p. 188, pl. 10, fig. 1

Holotype: IUT no. ?

Oshima, Nisisonogi-gun, Nagasaki Prefecture

Nishisonogi Formation

Oligocene

Lima (Acesta) nishiyamai (Yokoyama) see *Perna nishiyamai* Yokoyama, 1911 (described from the Eocene Manda Mine, Kumamoto Prefecture)

Lima oakvillensis Clark reported by Kotaka (1955; Saito Ho-on Kai Mus., Res. Bull., no. 25) from the early Miocene Isomatsu Formation, Aomori Prefecture

***Lima (Acesta) omorii* Aoki, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 22, p. 189, pl. 29, figs. 1a-b

Holotype: TKD no. 15001

River side exposure of the Shiratori River, about 50 m E immediately SE of Kagitori, Nisatai-mura, Nihohe-gun, (Nihohe City), Iwate Prefecture

Kadonosawa Formation

Miocene

(*Acesta omorii* (Aoki) by Masuda and Noda (1976))

***Lima (Lima) quantoensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 150, pl. 12, fig. 11

Holotype: GT no. ?

Koshiba (Sea cliff at Shiba, Kanazawa-machi Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 °38'06"E)

Koshiba Formation

Lower Musashino =Pliocene (early Pleistocene)

Lima (Acesta) rathbuni Bartsch reported by Kanno (1960: Japan Soc., Promot. Sci., Ueno, Tokyo, p. 230) from the Miocene Saginosu Formation, Saitama Prefecture

Lima (Acesta) sameshimai Oyama and Mizuno, 1958

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 598, pl. 1, figs. 11, 12

Holotype: GSJ no. 5006 (fig. 12)

In the vicinity of Ashikubo, Miwa-mura, Abe-gun, Shizuoka Prefecture

Setogawa Group

Early Oligocene ?

(Lima (Lima) sameshimai Oyama and Mizuno by Masuda and Noda (1976))

Lima (Acesta) shibatae Hirayama, 1967

Prof. H. Shibata Mem. Vol., p. 390, pl. 1, fig. 20

Holotype: GLR no. 1029

Nanatsuishi, Oyamada-shimogo, Bato-machi, Nasu-gun, Tochigi Prefecture

Aarakawa Group

Miocene

(Acesta shibatae (Hirayama) by Masuda and Noda (1976))

Lima (Acesta) smithi Sowerby reported by Okamoto and Nakano (1967; Trans. Proc. Palaeont. Soc. Japan, N. S., no. 68) from the Miocene Wanibuchi Formation, Shimane Prefecture; see ***Acesta smithi (Sowerby)*** by Masud and Noda (1976)

Lima sowerbyi nipponica Oyama reported by Kaseno and Mstusura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture

Lima takeyamai Ozaki, 1956

Bull. Nat. Sci. Mus., vol. 3, no. 1 (no. 38), p. 8, pl. 2, fig. 3

Holotype: NSM no. 4380

Namigata, Nogami Tyo (-cho), Ibara City, Okayama Prefecture

Namigata Formation

Tertiary

Lima (Acesta) yagenensis Otuka by Oyama (1943) see ***Lima goliath yagenensis Otuka, 1939***

Lima (Lima) yumotoensis Yokoyama, 1924

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, Art. 3, p. 20, pl. 4, fig. 3

Holotype: UT no. ?

Dainoyama, Yumoto-machi, Iwaki-gun, Fukushima Prefecture

Asagai Formation

Miocene (Oligocene)

Lima zushiensis Yokoyama, 1920

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 148, pl. 12, fig. 8

Holotype: GT no. ? (left valve)

Zushi (Sea cliff at Abuzuri, SE of Zushi-machi, Miura-gun, Kanagawa Prefecture; 35 °16'59"N, 139 °34'22"E).

Zushi Formation

Lower Musashino =Pliocene

(Lima (Lima) zushiensis Yokoyama by Hatai and Nisiyama (1952))

Limatula kurodai Oyama reported by Hatai, Masuda and Suzuki (1961) from the Pliocene (Pleistocene) Hamada Formation, Aomori Prefecture

Limatula (Limatsula) minoensis Itoigawa, 1960

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 267, pl. 1, fig. 8

Holotype: ESN no. 20007, Paratype: ESN no. 20010 (same locality)

Kujiri (S11-1), (Izumi-machi, Kujiri), Toki City, Gifu Prefecture

Kujiri facies of the Akeyo Formation

Miocene

Limatula subauriculata blanda Ozaki, 1956

Bull. Nat. Sci. Mus., vol. 3, no. 1, p. 5, pl. 1, fig. 14

Holotype: NSM no. 4376

Nisinotani, Nobori, Hane Twon, Aki-gun, Kochi Prefecture

Nobori Formation

Miocene (Pliocene)

Limea okinawana Noda, 1988

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 70, pl. 18, figs. 1a-b

Holotype: IGUT no. 10970

Loc. no. 82-20-1; Miyagishima, Yonashiro-cho, Nakagami-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

Limopsis adamsiana Yokoyama, 1920

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 175, pl. 19, figs. 1, 2

Lectotype: CM no. 20679 (Oyama, 1973)

Koshiba (Sea cliff of Shiba, Kanazawa-machi Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 °38'06"E)

Koshiba Formation

Lower Musashino =Pliocene (early Pleistocene)

***Limopsis auritoides* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 171, pl. 18, figs. 12, 13

Holotype: GT no. ?, Lectotype: CM nos. 20650, 20649 (Oyama, 1973)

Nojima (Sea cliff of NE of coast of Nojima, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 ° 19'05"N, 139 °38'02"E)

Nojima Formation

Lower Musashino = Pliocene (Pleistocene)

(*Limopsis nomurai* Hatai and Nisiyama, n. n. (1952) however it is invalid)

***Limopsis azumana* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, no. 205, p. 3, pl. 9, figs. 16-18

Holotype: CM no. (all specimens missing by Oyama (1973))

Koshihara (Sea cliff of Shiba, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 ° 38'06"E)

Koshihara Formation

Neogene (Pleistocene)

(*Nipponolimopsis azumana* (Yokoyama) by Hatai and Nisiyama (1952))

***Limopsis chitaniana* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 361, pl. 39, figs. 11, 12

Holotype: GT no. ?

Asuka (valley-side about 200 m SE of Aasuka, Taruki-mura, Ogasa-gun, Shizuoka Prefecture; 34 °47'01"N, 138 °E)

Satsuka Formation

Pliocene

***Limopsis (Pectunculina) crenata* A. Adams** reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture; see *Pectunculina oblonga* (A. Adams) by Hatai and Nisiyama (1952)

***Limopsis nomurai* Hatai and Nisiyama, 1952** (n. n.)

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 75

Type; *Limopsis auritoides* Yokoyama, 1920, Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 171, pl. 18, figs. 12, 13

Holotype: IUT no. ?

Kanazawa Zone (Nojima-machi, Kanazawa-ku, Yokohama City), Kanagawa Prefecture

Nojima Formation

Pliocene (Pleistocene)

(Invalid; *Limopsis auritoides* Yokoyama by Masuda and Noda (1976))

***Limopsis osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 70, pl. 1, figs. 6a-b

Holotype: JC no. 1400006

Tsuzara, Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation
Miocene

***Limopsis pelegica* Smith** reported by Nomura and Hatai (1935) from the Pleistocene Daishaka Formation, Aomori Prefecture

***Limopsis tajimae* Sowerby** reported by Tsuchi (1955) from the Pliocene Hijikata Formation, Shizuoka Prefecture

***Limopsis tokaiensis* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, p. 1, pl. 9, figs. 1-3, 5-7

Holotype: GT no. ?, Lectotype and Paralectotypes: CM no. 20653, 20654, 20652 (Oyama, 1973)

Koshihara (Sea cliff of Koshihara, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 ° 38'06"E)

Koshihara Formation

Neogene (Pleistocene)

***Limopsis tokaiensis* var. *elongata* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, p. 2, pl. 9, fig. 4

Holotype: GT no. ?

Koshihara (Sea cliff of Koshihara, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 °38 ° 06"E)

Koshihara Formation

Neogene (Pleistocene)

(*Limopsis tokaiensis* Yokoyama by Hatai and Nisiyama (1952))

***Limopsis tokyoensis* Yokoyama** miss print of ***Limopsis tokaiensis* Yokoyama**

***Limopsis truncata* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, p. 4, pl. 9, figs. 13, 14

Holotype: GT no. ?

Koshihara (Sea cliff of Koshihara, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 ° 38'06"E)

Koshihara Formation

Neogene (Pleistocene)

(*Nipponolimopsis azumana* (Yokoyama) by Hatai and Nisiyama (1952))

***Limopsis tsubetsuensis* Morita and Titova, 1996**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 63, no. 2, p. 145, pl. 7, figs. 1-4

Holotype: CBM no. PS-1764, Paratype: CBM nos. PS-1765, 1766, 1767

Loc. no. BS01, upper stream of the Sakaemori-gawa, about 10 km NW of the town-office of the Tsubetsu-cho, Tsubetsu-cho, Abashiri Province, Hokkaido

Fine sandstone Member of the Tsubetsu Formation

Early Miocene

***Limopsis uwadokoi* Oyama, 1951**

Miner. and Geol., vol. 4, nos. 5-6, p. 151, text-fig. 8

Holotype: GSJ no. ?

Hayano of the Mobarra Gas-field, Mobarra City, Chiba Prefecture
Mobarra Formation

Pliocene (Pleistocene)

***Limopsis yokoyamai* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 76, type; *Limopsis* sp., Yokoyama, 1910, Jour. Geol. Soc. Tokyo, vol. 17, p. 4, pl. 9, fig. 12

Holotype: UT no. ?

Koshiba (Sea cliff of Koshiba, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35°20'05"N, 139°38'06"E)

Koshiba Formation

Pliocene (early Pleistocene)

(Invalid: *Limopsis adamsiana* Yokoyama by Masuda and Noda (1976))

***Liochoncha tosana* Nomura, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 82, pl. 6, figs. 14a-b

Holotype: GS no. 54674

Tonohama (Near the junction of the tributary and the small river, a short distance E of the road at Todani, N of Tonohama, Yasuda-machi, Aki-gun, Kochi Prefecture; 33°26'43"N, 133°58'21"E)

(Konomine or Ananai Formation)

Pliocene

***Liocyma aomori* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 280, pl. 33, fig. 7

Holotype: SM no. 8480

Middle course of the Komatazawa, a tributary of the Aaiuchi-gawa, Kitatsugaru-gun, Aomori Prefecture (41°04'N, 140°22'06"E)

Isomatsu Formation

Oligocene (early Miocene)

Liocyma furtiva* (Yokoyama) see *Venus furtiva* Yokoyama, 1924**Liocyma minuta* Nomura and Zinbo, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 166, pl. 22, figs. 7-10

Holotype: SM no. 9302 (fig. 8), Paratype: SM no. 9302 (figs. 7, 9, 10)

Magarikawa (River-side cliff along the Mogami-kawa, about 250 m SW of the primary school at Magarigawa, Toyoda-mura, Mogami-gun, Yamagata Prefecture; 38°49'07"N, 140°11'39"E)

Hanezawa Formation

Pliocene (late Miocene)

***Liocyma ouchiensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 77, type; *Liocyma* ? sp., Nomura and Onisi, 1940, Japan. Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 191, pl. 3, fig. 13

Holotype: IGPS no. 21750

Yoshigasawa, Ouchi-mura (Marumori-machi), Igu-gun, Miyagi Prefecture

Kozai Formation (Yoshigasawa Formation)

Miocene (late Miocene)

(Invalid: *Limopsis* sp. by Masuda and Noda (1976))

Liocyma terrena* (Yokoyama) see *Venus terrera* Yokoyama, 1924**Lithophaga chikubetsuensis* Kanno and Matsuno, 1960**

Jour. Geol. Soc. Japan, vol. 66, no. 772, p. 41, pl. 4, fig. 5

Holotype: TKD no. 5506, Paratype: TKD no. 5507

Loc. Nos. 080104, 080105, upper stream of the Chikubetsu River, Haboro-machi, Rumoi Province, Hokkaido Sankebetsu Formation; lower member

Miocene

***Lithophaga otukai* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 211, text-figs. 1-3

Holotype: SM no. ?

Southeast valley of Shiratori (about 400 m SE of the temple at Shiratori), Nisatai-mura, Ninohe-gun, Iwate Prefecture; 40°14'05"N, 141°20'23"E)

Shiratori Formation

Miocene

(*Lithophaga (Diberus) otukai* Nomura and Hatai by Hatai and Nisiyama (1952))

***Lithophaga (Leiosolenus) rechifora* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 137, pl. 5, fig. 12

Holotype: JC no. 1300092

Loc. No. 446, Nakanishi, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone

Miocene

***Loripes goliath* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 86, pl. 9, fig. 8, pl. 10, fig. 1

Holotype: GSJ no. ?

Kosen, Hatayama-gun, Takao-syu; a branch of the river Fuko, Kosyun-gun, Takao-syu, Taiwan

Upper Arisan Beds

Miocene

(*Anodonta goliath* (Yokoyama))***Loripes tonohamana* Nomura, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 82, pl. 6, figs. 5a-b

Holotype: GS no. 54645

Tonohama (Near the junction of the tributary and the small river, a short distance E of the road at Todani, N of Tonohama, Yasuda-machi, Aki-gun, Kochi Prefecture; 33°26'43"N, 133°58'21"E)

Konomine Formation (Ananai Formation)

Pliocene

***Lucina acutilineata* Conrad** see ***Lucinoma acutilineata* (Conrad, 1849)**

***Lucina (Phacoides) borealis* (Linne)** reported by Yokoyama (1925) from the Miocene of the Joban Coal-field, Fukushima Prefecture; see ***Lucinoma acutilineatum* (Conrad, 1849)**

***Lucina hanezawaensis* Nomura and Zinbo, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 166, pl. 22, fig. 11

Holotype: SM no. 9346

Hanezawa (Road-side cutting along the small river about 500 m SE of the bridge at Hanezawa, Sakegawa-mura, Mogami-gun, Yamagata Prefecture; 38°48'45"N, 140°10'30"E)

Hanezawa Pliocene (Miocene)

(*Lucinoma hanezawaensis* (Nomura and Zinbo))

***Lucina izirii* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 57, pl. 3, fig. 9

Holotype: GT no. ?

(Side cliff of the Asahi-gawa, near the foot of the bridge at Shimo-Nango, Sannai-mura, Aakita Prefecture; 39°14'57"N, 140°40'58"E)

Kurosawa Formation

Miocene (late Miocene)

(*Lucinoma izirii* (Otuka) by Nomura and Hatai (1952))

***Lucinoma k-hatai* (Otuka) see *Lucina k-hataii* Otuka, 1934**

***Lucina japonica* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 126, pl. 10, figs. 11, 12

Holotype: NSM no. 4422

Cape Inuwaka, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

***Lucina k-hataii* Otuka, 1934**

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 614, pl. 47, figs. 27, 28
Syntype: GT no. 1417

Nisatai (Stream-side of Nisatai valley, about 200 m SE of the bridge at S of Nisatai, Nisatai-mura, Ninohe-gun, Iwate Prefecture; 40°17'53"N, 141°19'24"E)

Shiratori Member of the Kadonosawa Formation

Miocene

(*Lucinisa khataii* (Otuka) by Hatai and Nisiyama (1952) see

***Lucinoma khataii*; *Saxolucina (Megaxinus) khataii* (Otuka) by Masud and Noda (1976))**

***Lucina kunigamiensis* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 241 (13), pl. 11 (1), figs. 10a-11b

Holotype: IGPS no. 51350 (figs. 10a-b), Paratype (figs. 11a-b)

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

***Lucina meisensis* Makiyama, 1936**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 210, pl. 4, fig. 5

Holotype: GIKIU no. ?

Heirokudo stage at Mongando, North Korea

Heirokudo Formation

Miocene

***Lucina mochizuki* Kuroda, 1931**

In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 46, pl. 5, fig. 26

Holotype: GK no. ?

A short distance N of Takenokawa, Miasa-mura, Kita-Azumi-gun, Nagano Prefecture (36°35'N, 137°56'E)

Ogawa Formation

Miocene

(*Lucinoma mochizuki* (Kuroda))

***Lucina (Myrtea) nipponica* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 123, pl. 15, figs. 12a-b

Holotype: SM no. 6902

Okada (Cliff bordering stream immediately NW of Okada, Yamaoka-mura, Higashi-Shirakawa-gun, Fukushima Prefecture; 37°01'N, 140°26'03"E)

Tanagura Formation (Kubota Formation)

Miocene

(*Lucinoma nipponica* (Nomura and Hatai))

***Lucina poronaiensis* Yokoyama, 1890**

Paleontographica, vol. 36, nos. 3-6, p. 196, pl. 25, figs. 5a-c

Holotype: Munich Mus., not numbered

Poronai, Sorachi-gun, Ishikari (Probably near the Poronai coal-mine, a short distance SE of the Poronai Station, Mikasayama-mura, Sorachi-gun, Ishikari Province, Hokkaido; 43°13'19"N, 141°54'52"E)

Poronai Formation

Cretaceous (late Eocene)

(*Lucinoma poronaiensis* (Yokoyama))

***Lucina spectabilis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 134, pl. 10,

figs. 10-12

Holotype: GT no. ?

(Sea cliff at Shiba, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35°20'05"N, 139°38'06"E)

Koshiba Formation

"Lower Musashino" = Pliocene (early Pleistocene)

(*Lucinoma spectabilis* (Yokoyama) by Hatai and Nisiyama (1952))

***Lucina yokoyamai* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 615, pl. 47, figs. 29-32

Syntype: GT no. 1412

Nisatai (Stream-side of the Nisatai valley, about 200 m SE of the bridge at Nisatai, Nisatai-mura, Ninohe-gun, Iwate Prefecture; 40°17'53"N, 141°19'24"E)

Shiratori Formation

Miocene

(*Lucinoma yokoyamai* (Otuka) by Hatai and Nisiyama (1952))

***Lucina shimogoensis* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 59, pl. 5, fig. 1

Holotype: TKD no. 10123

Loc. No. 1, Nanatsuishi, Oyamada-shimogo, Oyamada-mura, Karasuyama-machi, Haga-gun, Tochigi Prefecture; 36°47'05"N, 140°13'40"E.

Kobana Formation

Miocene

***Lucina stearnsiana* Oyama, 1954 (n. n.)**

In Taki and Oyama (1954: Spec. Pap., Palaeont. Soc. Japan, no. 2, p. 40, 52, pl. 47, figs. 1, 2 (new name for *Loripes bialata* Pilsbry, 1895, Catl. Mar. Moll. Japan, p. 133-134, pl. 3, figs. 13, 14))

***Luciniscia k-hataii* (Otuka) see *Lucina k-hataii* Otuka and *Lucinoma khataii* (Otuka)**

***Lucinoma acutilineata* (Conrad) see *Lucina acutilineata* Conrad, 1849**

***Lucinoma acutilineatum* (Conrad) see *Lucina acutilineata* Conrad, 1849**

***Lucinoma annulata* (Reeve) see *Lucina annulata* Reeve, 1850**

***Lucinoma columbiana* (Clark and Arnold)** reported by Hirayama (1954) from the Miocene Uchiyama Formation, Gumma Prefecture

***Lucinoma gracilistriata* Hirayama, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1-2, p. 104, pl. 10, figs. 1a-2

Holotype: TKD no. 10160 (figs. 1a-c), Paratype: TKD no,

10161 (fig. 2)

Along the river cliff of Ide-gawa, a little north of Tateishi, Tatsuta-mura, Futaba-gun, Fukushima Prefecture; 37°18'20"N, 140°58'33"E: Paratype, Sea side cliff of Ide, Tatsuta-mura, Futaba-gun, Fukushima Prefecture

Taga Formation

Miocene

***Lucinoma hannibali* (Clarck)** reported by Hirayama (1954) from the Miocene Akahira Formation, Saitama Prefecture

***Lucinoma kannoi* Hirayama, 1973**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 175, pl. 15, fig. 26

Holotype: GLR no. 1634

Loc. B, a left cliff of the Arakawa River at Hiranita, about 1 km N of the Bushu-Nakagawa Station, Chichibu City, Saitama Prefecture

Hiranita Formation

Miocene

***Lucinoma katayosensis* Aoki, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 17, p. 34, pl. 1, figs. 13, 14

Holotype: TKD no. 5914

Loc. No. 7, cliff of valley-side at Donosaku, Kamikatayose, Kabeya, Taira City, (Iwaki City), Fukushima Prefecture; 37°04'40"N, 140°51'14"E

Kabeya Formation

Miocene

(***Lucinoma otukai* Hatai and Nisiyama** by Masuda and Noda (1976))

***Lucina meisensis* Makiyama, 1936**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 210-211, pl. 4, fig. 5

Holotype: GK no. ?

Mongando, North Korea

Heiropudo stage (Heiropudo Formation)

Miocene

***Lucinoma murakawai* Zinbo, 1973**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 159, pl. 14, figs. 2a-b

Holotype: Yamagata Pref. Museum, no. 127

Loc. No. II, road-side cliff, about 600 m East of Utsuzawa, Iide-machi, Nishiokitama-gun, Yamagata Prefecture

Utsutoge Formation

Miocene

***Lucinoma nagaoui* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 601, pl. 4, figs. 7a-9c

Holotype: GSJ no. 5027 (figs. 9a-c)

Nittan-Takamastu coal mine, Mizumaki-machi, Onga-gun,

Fukuoka Prefecture
Yamana Formation of the Ashiya Group
Oligocene

***Lucinoma otukai* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 91, pl. 24, fig. 10
Holotype: GS no. 72501
Fukuda, Sekimoto-mura, Taga-gun, Ibaraki Prefecture (36 °
50'08"N, 140 °46'E)
Kamenoo Formation
Miocene (early Miocene)

***Lucinoma shinokii* Hirayama, 1954**

Japan. Jour. Geol. Geogr., vol. 25, nos. 1-2, p. 105, pl. 10, figs.
3a-5b
Holotype: TKD no. 10162 (figs. 3a-4), Paratype: TKD nos.
10163, 10164 (same locality)
Upper course of Oizawa near Miyagase, Miyagase-mura,
Aiko-gun, Kanagawa Prefecture; 35 °31'15"N, 139 °13'57"E
Jike Formation
Miocene

***Lucinoma spectabilis* (Yokoyama) see *Lucina spectabilis*
Yokoyama, 1920**

***Lucinoma tomitensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 174,
pl. 2, figs. 1, 2
Holotype: TKD no. 5678 (fig. 1), Paratype: TKD no. 5679
(same locality).
Loc. No. 112, a right river side cliff at Tomita, Chichibu City,
Saitama Prefecture
Tomita Siltstone Member of the Ushikubitoge Formation
Oligocene (early Miocene)

***Lucinopsis* (?) *boshihoensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p.
98, pl. 2, figs. 17a-b
Holotype: IGPS no. 48007
Boshiho, Stationno, no. 13, Shiko-sho, Byoritsu-gun,
Shinchiku-shu, Taiwan
Byoritsu Beds
Pliocene (Pleistocene)
(*Lajonkairia boshihoensis* (Nomura))

***Lucinopsis kosuiensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p.
99, pl. 1, figs. 11a-b
Holotype: IGPS no. 48001
Kosui, Hokuseikawa, Tsusho-sho, Byoritsu-gun, Shinchiku-shu,
Taiwan
Byoritsu Beds
Pliocene (Pleistocene)
(Invalid because of no indication; if valid it should be

***Lajonkairia kosuiensis* (Nomura)**

***Lutraria nenokamiensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 191,
pl. 4, figs. 11, 12
Holotype: TKD no. 5736 (fig. 12); Paratype: TKD no. 5737
(same locality)
Loc. No. 207, a mountain-side cliff, about 100 m E of a fall,
Nenokami in Hikokubo, Yoshida-machi, Chichibu-gun, Saitama
Prefecture
Nenokami Sandstone of the Hikokubo Group.
Oligocene (lower Miocene)

***Lutraria osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 77, pl. 3,
figs. 1a-b
Holotype: JC no. 1400023
Tszara (Loc. No. 21), Osawano-machi, Kaminiikawa-gun,
Toyama Prefecture
Kashio Alternation of the Kurosewdani Formation
Miocene

***Lutraria ovalis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 41, pl. 2,
figs. 28a-c.
Holotype: UT, no. ?
Cutting along the railway at Shinagawa, Shinagawa-ku Tokyo
Prefecture
Shinagawa Bed (Tokyo Formation)
Pleistocene (ca. 120-70 Ka)

***Lutraria radiata* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 110, pl. 7,
fig. 11
Holotype: GT no. ?
Naganuma (Road-side cutting at Naganuma, Tostuka-ku,
Yokohama City, Kanagawa Prefecture; 35 °22'03"N, 139 °
32'05"E)
Naganuma Formation
Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

***Lutraria takadatensis* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 103, pl.
40, fig. 2
Holotype: unkown
Northern foot of the Takadate-hill (a short distance W of the
Kumanodo shrine), Kumanodo, Natori, City, Miyagi Prefecture
(38 °12'N, 140 °51'E).
Moriwa Formation
Miocene
**(*Paphia takadatensis* (Matsumoto) by Hatai and Nisiyama
(1952))**

***Lyonsiella media mitsuganoensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 66, pl. 2, fig. 8
 Holotype: ESN no. 30009
 Loc. No. K35, Ashisaka, Misato-mura, Age-gun, Mie Prefecture
 Oi Formation
 Miocene

***Macoma anser* Oyama, 1950 (n. n.)**

Miner. and Geol., vol. 3, no. 6, p. 3, new name for *Macoma inquinata* (Deshayes) reported by Oinomikado (1934; Venus, vol. 4, no. 6, p. 355-356, pl. 8, figs. 4, 5)
 Holotype: GSJ no. ?
 Type locality: Off-Haneda, Tokyo Bay (living species)
 Recent
 (Reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Kanazawa Prefecture)

***Macoma (Macoma) aomoriensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 63, pl. 4, figs. 3, 4, 5
 Holotype: SM no. 6091
 Hotatebuchi, Hitotsumori, Akaishi-mura, Nishitsugaru-gun, Aomori Prefecture (40°40'N, 140°08'08"E)
 Tanosawa Formation
 Miocene (early middle Miocene)

***Macoma arctata* (Conrad)** reported by Kanno (1960) from the early Miocene Nenokami Formation, Saitama Prefecture

***Macoma (Macoma) asagaiensis* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 10, no. 2, art. 6, p. 155, pl. 4, figs. 15, 16, 19
 Holotype: GK, no. ?
 Sea cliff of Yotsukura-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture (37°07'N, 141°E)
 Asagai Formation
 Oligocene

***Macoma (Macoma) atsunaiensis* Honda, 1988**

Saito Ho-on Kai Spec. Pub., no. 2, (Prof. T. Kotaka Commem. Vol.), p. 360, pl. 2, figs. 1-6
 Holotype: IGPS no. 97106-2, Paratype: IGPS nos. 97106-3, -4, -5
 Loc. no. AN-20, about 4.5 km NNE from Onbetsu-machi, upper stream of the Shakubetsu-gawa, Onbetsu-machi, Shiranuka-gun, Kushiro Province, Hokkaido
 Atsunai Formation
 Middle Miocene

***Macoma calcarea* (Gmelin)** see ***Tellina calcarea* Gmelin** reported by Nomura (1935) from the late Miocene Urushikubo Formation, Fukushima Prefecture

***Macoma (Macoma) calcarea izurensis* Yokoyama** reported by Watanabe, Arai and Hayashi (1950) from the early Miocene Akahira Formation, Saitama Prefecture

***Macoma calcarea yokohamaensis* Aoki, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 39, p. 305, pl. 34, figs. 15-17, text-fig. 2
 Holotype: TKD no. 6686 (fig. 15), Paratype: TKD no. 6687 (fig. 16, loc. 3), 6688 (fig. 17, loc. 1)
 Loc. 3, hill-side cliff, near the electric power station, Bessho-machi, Minami-ku, Yokohama City, Kanagawa Prefecture: Paratype, loc. No. 1, cliff in Maruyama-machi, Minami-ku, Yokohama City, Kanagawa Prefecture
 Nakazato Formation
 Pliocene (Early Pleistocene)

***Macoma hakushatonensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 103, pl. 1, figs. 6a-b
 Holotype: IGPS no. 48589
 Seven hundreds meters or 800 m NE of Hakushaton, Station no. 12, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan
 Byoritsu beds
 Pliocene (Pleistocene)

***Macoma (Rexithaerus) hokkaidoensis* Amano and Lutaebko, 1999**

Paleont. Res., vol. 3, no. 2, p. 96, figs. 3-1, -3, -5-6, 8, 4-6
 Holotype: JUE no. 15652, Paratype: JUE nos. 15653, 15654
 Off Oshamanbe (Funka Bay), Oshima Province, Hokkaido
 Recent
 (Fossil species reported from the Natita Formation, Chiba Prefecture in same paper (Amano et al., 1999))

***Macoma hokiensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 287, pl. 60, fi. 8
 Holotype: IGPS no. 85512
 Along the Hoki River, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture
 Kanomatazawa Formation; uppermost part
 Miocene

***Macoma incongrua* (v. Martens)** see ***Tellina incongrua* v. Martens, 1865** reported by Nomura (1935) from the middle Miocene Chiganoura Formation, Miyagi Prefecture

***Macoma ishimoriensis* Aoki, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 17, p. 37, pl. 2, fig. 21
 Holotype: TKD no. 5924
 Loc. No. 11, path side about 400 m NWW of the Yasaka Shrine in Donosaku, Kamikatayose, Kabeya, Taira City (Iwaki City), Fukushima Prefecture; 37°04'43"N, 140°55'16"E
 Kabeya Formation
 Miocene

***Macoma izirii* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 57, pl. 3, figs. 4, 5

Holotype: GT no. ?

(Southern cliff of the Kitamata-zawa, on the upper course of the Kurosawa-gawa, about 200 m SE of the small bridge about 1.9 km SE of) Kami-Kurosawa, Sannai-mura, Hiraga-gun, Akita Prefecture (39°15'08"N, 140°44'15"E)

Kurosawa Formation

Miocene (late Miocene)

Macoma izurensis* (Yokoyama) see *Tellina izurensis* Yokoyama, 1925**Macoma komatazawaensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 83; type, *Macoma* sp., Nomura and Hatai (1936; Japan Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 281, pl. 33, figs. 9, 10)

Holotype: SHM no. 9272

Rolling ? block found at middle course of the Komatazawa, a tributary of the Aiuti River, Aiuti-mura, (Aaiuchi) Tsugaru Peninsula, Mutu Province (Shiura-mura, Kitatsugaru-gun, Aomori Prefecture).

Isomatsu Formation

Oligocene (Miocene)

***Macoma middendorffi* Dall** reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture

***Macoma nagaoui* Hirayama, 1956**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 5, no. 45, p. 115, pl. 8, fig. 27

Holotype: TKD no. 10407

Loc. B; Sea cliff, a little south of Watase, Hikoshima (Shimonoseki City), Yamaguchi Prefecture

Ashiya Formation (Hikoshima)

Oligocene

Macoma nipponica* (Tokunaga) see *Tellina nipponica* Tokunaga, 1906**Macoma obiae* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 132, pl. 18, fig. 10

Holotype: NSM no. ?

Omate, Unakami-machi, Kaijyo-gun, Chiba Prefecture

Iioka Formation

Pliocene

***Macoma (Macoma) oinomikadoi* Otuka** see ***Macoma praetexta oinomikadoi* Otuka, 1939** (Synonymous with ***Macoma calcarea* (Gmelin)** by Oyama (1961))

Macoma optiva* (Yokoyama) see *Tellina optiva* Yokoyama, 1923**Macoma orbiculata* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 192, pl. 4, figs. 13, 14

Holotype: TKD no. 5628 (fig. 13), Paratype: TKD no. 5792 (same locality)

Loc. No. 219a, a small valley cliff, about 200 m S of Kakkaku, Ogano-machi, Chichibu-gun (Chichibu City), Saitama Prefecture

Nenokami Sandstone of the Hikokubo Group

Oligocene (lower Miocene)

***Macoma owasensis* Suzuki (ND), 1934**

Chikyu (Globe), vol. 21, no. 5, p. 348, text-fig. 3

Holotype: GT no. ?

Road-side cutting about 700 m W of Matsumoto, Owase-machi, Kimuro-gun, Mie Prefecture (34°03'35"N, 136°14'37"E)

Yukunoura Formation

Miocene

(***Macoma aomoriensis* Nomura** by Hatai and Nisiyama (1952))

***Macoma parabilella* Mizuno, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 4, p. 18 (242), pl. 1, figs. 21-24, 24a, 25-30

Holotype: GSJ no. 5330

Station 63-8-A3 (Adit No. 8), coal-bearing facies of the Laki stage at the vicinity of the W. P. I.D. C. Degari Colliery in the Degari coal field, about 17 airmiles SE of Quetta (30°05'N, 67°13'E)

Degari coal-bearing sandstone (Gazij Shales of Laki)

Eocene

***Macoma praetexta oinomikadoi* Otuka, 1939**

Jour. Geol. Soc. Japan, vol. 44, no. 544, p. 28, pl. 2, figs. 17, 18

Holotype: GT no. 4252 (designated by Hatai and Nisiyama (1952))

(Southwestern foot of the hill (117.2 m) bordering a creek, about 100 m NE of the bank at NE of Omura-daira), Tanabu-machi, Sshimokita-gun, Aomori Prefecture (41°14'39"N, 141°16'14"E)

Tanabu Bed (Hamada Formation)

Pliocene (early Pleistocene)

(Synonymous with ***Macoma calcarea* (Gmelin)** by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***“Macoma” prima* Hirayama, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 29, p. 106, pl. 4, figs. 24, 25

Holotype: TKD no. 10279

Loc. No. A 29, cliff along the tributary of the Kobisa-gawa, a little west of Oyamada, Hisanohama-machi (Iwaki City), Fukushima Prefecture

Asagai Formation
Oligocene

Macoma (Rexithaerus) sector Oyama, 1950

Mineral and Geol., vol. 3, no. 6, p. 3, new name for *Macoma secta* (Conrad), Yokoyama (1922; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 1, p. 143-144, pl. 11, fig. 1)
Otake, very near the railway station of Manzaki on the Abiko-Sawara Line, Shimoso (Shinosa-Manzaki Station of the Narita Line, Narita City, Chiba Prefecture)
Upper Musashino and Kazusa (Kioroshi Formation)
Pleistocene (ca. 0.12-0.07 Ma)

Macoma (Macoma) sejugata (Yokoyama) see Tellina sejugata Yokoyama, 1924

Macoma (Macoma) shinanoensis Tanaka, 1960

Jour. Shinshu Univ., no. 9, p. 109, pl. 1, figs. 8a-c, 14, 15
Holotype: SU no. 389, Paratype: SU no. 388, 389, 390
Loc. no. E2, path-side along the Ike-zawa, Ikusaka-mura, Higashichikuma-gun, Nagano Prefecture
Sashikiri Sandstone and Conglomerate, Omi Formation
Miocene

Macoma (Rexithaerus) shiratoriensis (Matsubara) reported by Amano et al. (1999: Paleont. Res., vol. 3, no. 2, p. 102); see Rexithaerus shiratoriensis Matsubara, 1994

Macoma tokyoensis Makiyama, 1927

New name for *Tellina dissimilis* Martens (1865; Ann. Mag. Nat. Hist. Ser. 3, vol. 16, no. 96, p. 430, non *Tellina dissimilis* Deshayes, Yokoyama, 1920, p. 116, pl. 7, figs. 19-20): Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 3, no. 1, p. 50 (foot note)
Holotype: IUT no. ?
Otsu, (same loc. occurred *Elephas nomadicus* Nauman, 1881) (Shirasomayama, Yokosuka City), Kanagawa Prefecture
Yokosuka Zone (Otsu Formation)
lower Musashino=Pliocene (Pleistocene?)

Macoma totomiensis Makiyama, 1927

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 50, pl. 2, fig. 9
Holotype: GK no. 15
Dainichi (valley about 350 m NW of Dainichi, Fukuroi City, Shizuoka Prefecture; 34°48'07"N, 137°56'E)
Dainichi Formation
Pliocene

Macoma yamadai Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 81, pl. 6, fig. 3
Holotype: GS no. ?
The third Namazuta Mine (on the northern slope of the hill,

about 400 m SE of the contact point of the two railways) at Namazuta, Iizuka-s City, Fukuoka Prefecture (33°39'23"N, 130°43'E)

Honso Formation
Middle Eocene

Macrocallista ariakensis Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 112, pl. 18, fig. 16
Holotype: GS no. 35761
(Small cliff S of the pond about 500 m S of the two roads) at Takaizumi, Miike-machi, Miike-gun, Fukuoka Prefecture (33°02'08"N, 130°29'E)
Komenoyama Formation
Lower Eocene
(*Callista ariakensis* (Nagao) by Hatai and Nisiyama (1952))

Macrocallista hanzawai Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 69, pl. 13, fig. 7
Holotype: GS no. 36236
(Northern cliff facing the Hakata Bay, about 150 m N of the Atago shrine) at Meinohama-machi, Sawara-gun, Fukuoka Prefecture (33°35'N, 130°20'14"E)
Meinohama Formation
Oligocene
(*Callista hanzawai* (Nagao) by Hatai and Nisiyama (1952))

Macrocallista kahoensis Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 67, pl. 11, figs. 8, 8a-b
Holotype: GS no. 36389
The 3rd Namazuta Mine (on the northern slope of the hill, about 400 m SE of the contact point of the two railways) at Namazuta, Iizuka City, Fukuoka Prefecture (33°39'23"N, 130°43'E)
Honso Formation
Middle Eocene
(*Callista kahoensis* (Nagao) by Hatai and Nisiyama (1952))

Macrocallista matsuraensis Nagao, 1928

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 66, pl. 11, figs. 7, 7a-b
Holotype: GS no. 36209
(Pass-side cutting on the boundary between Oyama-mura and Arita-machi, about 500 m NW of the shrine) at Obo, Arita-machi, Nishimatsuura-gun, Saga Prefecture (38°12'07"N, 129°52'36"E)
Kishima Formation
Oligocene
(*Callista matsuraensis* (Nagao) by Hatai and Nisiyama (1952))

Macrosolen madlumensis Kanno, O'Hara and Caagusan, 1982

Geol. Palaeont. Southeast Asia, vol. 24, p. 77, pl. 16, figs. 7a-8c

Holotype: JUE no. 10020, Paratype: JUE no. 10021
 River floor and the river side bank of the Madlum River, near the Tartaro Bridge, San Miguel, Bulacan, Central Luzon, Philippines
 Tartaro Formation
 Upper Miocene

***Mactra (Spisula) asperaeformis* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 156 (48), pl. 5 (1), figs. 20a-b

Holotype: IGPS no. 50396

Kamikatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

***(Oxyperas (Rugosoxyperas) asperaeformis (Nomura and Zinbo)* by Habe (1977))**

***Mactra banbakoensis* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 71, pl. 7, fig. 8

Holotype: GSJ no. ?

The mouth of the Bankakokei, Shinchiku-syu, Taiwan

Lower Bryoritz Bed

Pliocene

***Mactra (Mactorotoma) californica onnechiuria* Otuka, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 163, pl. 16, figs. 1, 2

Holotype: GSJ no. ?, destroyed ?, described by Hatai and Nisiyama (1952)

Near the Magaribuchi-Choba, E of Magaribuchi station on the Kitami Line, Wakkanai-machi, Soya-gun, Kitami Province, Hokkaido (45 °16'30"N, 141 °56'30"E)

Chiraijets Formation

Miocene

***(Spisula onnechiuria (Otuka)* by Hatai and Nisiyama (1952))**

***Mactra charischema* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 103, pl. 39, figs. 16, 17

Holotype: unknown

Northern foot of the Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun, Miyagi Prefecture (38 °12'N, 140 °51'E)

Moniwa Formation

Miocene

***Mactra (Pseudocardium) ezodensata* Kubota, 1950**

Kubota in Kubota and Uozumi, 1950, Cenozoic Res., no. 56, p. 78, pl. 6, figs. 40a-41

Holotype: UH no. 9435 (figs. 40a-b), Paratype: UH no. 9436 (fig. 41)

River floor of the conjunction of the Sugisawa and Sankebetsu River, tributary of the Haboro River, Tomamae-gun, Teshio

Province, Hokkaido

Chikubetsu Formation

Miocene

***Mactra fujinensis* Yokoyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 1, p. 5, pl. 2, figs. 2a-b

Holotype: GT no. ?

(Lake cliff about 300 m NWW of Jyakusan, N of Fujina, Tamayu-mura, Yatsuka-gun, Shimane Prefecture (35 °26'N, 133 °02'E)

Fujina Formation

Pliocene (Miocene)

***(Serripes fujinensis (Yokoyama)* by Hatai and Nisiyama (1952))**

***Mactra haboroensis* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 198, pl. 52, fig. 3

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952))

Haboro, Teshio (road-side cutting along the Haboro-gawa, a short distance W of Shinkukaku, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido; 44 °18'40"N, 141 °54'10.4"E)

Chikubetsu Formation (Chikubetsu Formation)

Pliocene (Miocene)

***Mactra kurikomana* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 92, pl. 3, figs. 2-4

Holotype: SM no. 5580

A road-side cliff about 1 km S of Narusawa hot spring, Genbi-mura, Nishiiwai-gun, Iwate Prefecture (39 °10'N, 140 °52'05"E)

(Narusawa Formation)

Miocene

***Mactra makiyamai* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 7, p. 360, pl. 69, fig. 3

Holotype: GT no. ?

Hanzogane, Higashiyama, Echigo (River-side at Hanzogane, Hanzogane-mura, Koshi-gun, Niigata Prefecture; 37 °23'N, 138 °56'20"E)

Ushigakubi Formation

Pliocene (Miocene)

***(Serripes makiyamai (Yokoyama)* by Hatai and Nisiyama (1952))**

***Mactra matsusakensis* Araki, 1960**

Bull. Lib. Arts Dep., Mie Univ., Spec. Vol., no. 1, p. 101, pl. 8, fig. 2

Holotype: Mie Univ. no. ?

Road side cliff in the western part of Yamazoe, Matsuzaka City, Mie Prefecture

Furutaik Sandstone of the Isshi Group

Miocene

***Mactra nakayamaensis* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 123, pl. 14, figs. 1, 2
 Holotype: IGPS no. 79386
 West of Tatsuzawa, Iino, Taira City, Fukushima Prefecture
 Nakayama Formation
 Middle Miocene

***Mactra osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 77, pl. 2,
 figs. 13a-c
 Holotype: JC no. 1400022
 Iwakishin (Loc. No. 18), Osawano-machi, Kaminiikawa-gun,
 Toyama Prefecture
 Kashio Alternation of the Kurosedani Formation
 Toyama Prefecture

***Mactra (Mactra) sachalinensis* Schrenck *haboroensis*
 Yokoyama** reported by Kubota in Uozumi and Kubota (1950;
 Cenozoic Res., no. 5, p. 77, pl. 6, figs. 42-44) (***Mactra*
 (*Pseudocardium?*) *haboroensis* Yokoyama** by Masuda and
 Noda (1976))

***Mactra semmiana* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 11, pl.
 4, fig. 5
 Holotype: GT no. ?
 (Valley of Nakanosawa, about 500 m SE of) Senmi, Miasa-mura,
 Kitaasumi-gun, Nagano Prefecture; 38°35'N, 137°55'E)
 (Ogawa Formation)
 Miocene
 (***Spisula sachalinensis* (Schrenck)** by Hatai and Nisiyama
 (1952))

***Mactra squalida* (Yokoyama)** reported by Kamada (1962) from
 the Oligocene Iwaki Formation; see ***Cardium (Laevicardium)*
squalidum Yokoyama, 1924**

***Mactra (Mactra) sulcataria* Reeve** reported by Kubota and
 Uzoumi, (1950) (synonymous with ***Mactra (Pseudocardium)*
ezodensata Kubota** by Masuda and Noda (1976))

***Mactra sulcataroides* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 286,
 pl. 59, fig. 5
 Holotype: IGPS no. 85509
 Shimotokurazawa, Sekiya, Shiobara-machi, Shioya-gun,
 Tochigi Prefecture
 Kanomatazawa Formation
 Miocene

***Mactra (Spisula) voyi* (Gabb) *onnechiuria* Otuka** reported by
 Kubota and Uozumi (1950; Cenozoic Res., no. 5) from the
 Miocene Chikubetsu Formation, Hokkaido

***Malletia inermis* (Yokoyama)** reported by Kanno and Ogawa,
 (1964) from the Miocene Takinoue Formation, Hokkaido; see
***Leda inermis* Yokoyama, 1925**

***Malletia (Neilo) kurasiensis* Krishtofovich** reported by Kanno
 (1967) from the Miocene Itsukaichi Formation, Saitama
 Prefecture

***Malletia gushikamiensis* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 67, pl. 2,
 figs. 4a-b, pl. 3, figs. 8a-b
 Holotype: IGUT no. 10048, Paratype: IGUT no. 10047
 Loc. no. 123: Small farm-road side cliff, about 600 m N of
 Hanagusuku, Gushikami-mura, Shimajiri-gun, Okinawa
 Prefecture
 Shinzato Formation
 Pliocene

***Malletia poronaica* (Yokoyama)** reported by Uozumi (1952)
 from the Oligocene Poronai Formation, Hokkaido; see ***Nucula*
poronaica Yokoyama, 1925** (***Neilonella poronaica*
 (Yokoyama)** by Masuda and Noda (1976))

***Malletia shinzatoensis* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 68, pl.
 12, figs. 15a-b
 Holotype: IGUT no. 10068, Paratype: IGUT no. 10599
 Loc. no. 334: Cliff about 1 km NE of Ihara, Sashiki-mura,
 Shimajiri-gun, Okinawa Prefecture
 Shinzato Formation
 Pliocene

***Malletia (Neilo) takeharai* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 58, pl. 1, figs. 3-5
 Holotype: ESN no. 30001 (fig. 4)
 Loc. No. K73, Nakanomura, Hakusan-machi, Ichishi-gun, Mie
 Prefecture
 Oi Formation
 Miocene

***Mantellum hakodatensis* (Tokunaga)** reported by Kaseno and
 Matsuura (1965) from the Pleistocene Omma Formation,
 Ishikawa Prefecture (***Limaria hakodatensis* (Tokunaga)** by
 Masuda and Noda (1976))

***Maoricardium mizunamiense* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 24, pl. 7, figs. 8a-b
 Holotype: MFM no. 10028
 Shukubora, Hiyoshi-cho, Mizunami City, Gifu Prefecture (Loc.
 no. 18)
 Shukunohora facies of the Mizunami Group
 Miocene

***Margaritifera otatumei* Suzuki, 1942**

Japan. Jour. Geol. Geogr., vol.18, no.4, p.148-149, pl.17, figs.4a-c

Holotype: UH 9047

Utashinai, Utashinai-machi, Sorachi-gun, Hokkaido

Wakkanappe Formation of the Ishikari Group

Oligocene

***Margaritana perdahurica* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 244, pl. 4, fig. 2

Holotype, GT no ?

In the Rakkan-zawa, a branch of the Shisen-gawa, Numata-mura, Uryu-gun, Ishikari Province, Hokkaido (precise locality unknown)

Upper Tachibets (Tachinetsu)

“Pleogene” (Oligocene)

(*Margaritifera perdahurica* (Yokoyama) by Hatai and Nisiyama (1952))

Margaritifera margaritifera (Linne) reported by Omori and Ibaraki (1966) from the Pliocene Oguni Formation, Nagano Prefecture

***Margaritifera owadaensis* Noda, 1970**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 77, p. 240, pl. 25, figs. 3a-c

Holotype: IGPS no. 86893

Loc. No. 1, exposure along the National Road side near Owada, Rumoi City, Hokkaido

Owada Formation

Eocene

Margaritifera perdahurica (Yokoyama) see *Margaritana perdahurica* Yokoyama, 1932

***Martesia pulchella* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 238, pl. 2, fig. 5

Holotype: GT no. ?

Sannosawa, Shiroki-gawa, Uryu-gun (Stream-side of a valley at N the entrance of the Shiroki-zawa, Numata-mura, Uryu-gun, Ishikari Province; 43°59'18"N, 141°57'03"E)

Lower Shiroki (Shiroki Formation)

“Paleogene” (Eocene)

***Masudapecten* Aakiyama, 1962 (n. subgen.)**

Type species; *Patinopecten masudai* Akiyama (1962; Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74) described from the Miocene Sugota Formation in Akita Prefecture

***Megacardita taiwanensis* Masuda and Huang, 1990**

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 151, pl. 7, figs. 8-12

Holotype: UMNS no. 003315 (Loc. no. KS 651C), Paratype:

UMNS nos. 003314, 000227-003315 (Loc. no. KS651C)

Kuanyinshan Sandstone, Wuchi section, Central Taiwan

Kuanyishan Sandstone

Middle Miocene

***Megacardita* (?) *tatsukobuensis* Morita and Titova, 1996**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 63, no. 2, p. 149, pl. 8, figs. 1, 2

Holotype: CBM no. PS-1781

Loc. no. MT13, about 600 m south of the river mouth of Jusanban-sawa, a branch of the Abashiri River, Mogami,

Tsubetsu-cho, Abashiri Province, Hokkaido

Upper Haard Shale Member of the Tatsukobu Formation

Oligocene

***Meiocardia pacifica* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 122, pl. 10, figs. 1-4

Holotype: NSM no. 4423

Beach at western end of Tokawa-machi, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

***Meisenia* n. gen., Makiyama, 1936** ;Type, *Meisenia tateiwai* Makiyama, n. sp. (Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 215) described from the Miocene lower Banko Formation of the North Korea (*Prothothaca tateiwai* (Makiyama))

***Meisenia tateiwai* Makiyama, 1936**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 11, no. 4, art. 8, p. 215-216, pl. 4, figs. 6, 7

Holotype: GK no. ?

Kinsei, North Korea

Lower Banko Sandstone

Miocene

(*Prothothaca tateiwai* (Makiyama))

***Meotolima ogasawarana* (Oyama)** reported by Iwasaki and Aoshima (1970) from the Eocene Hahajima Formation, Tokyo Prefecture

***Mercenaria chitaniana* (Yokoyama) see *Chione chitaniana* Yokoyama, 1926**

***Mercenaria kurosawai* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 181, pl. 3, figs. 1a-b

Holotype: TKD no. 5681

Loc. No. 717, a small river cliff, Kamanosawa, Ogano-machi, Chichibu-gun, Saitama Prefecture

Saginosu Formation

Miocene

***Mercenaria moriyensis* Tanaka, 1961**

Bull. Fac. Educ., Shinshu Univ., no. 12, p. 77, pl. 2, figs. 41, 44
 Holotype: Shinshu Univ. no. 659 (fig. 41), Paratype: SU no. 657
 (loc. no. A6)

Loc. no. A2, small cliff at the southern foot of Karasu-yama,
 Katakura, Fujisawa-mura, Kamiina-gun, Nagano Prefecture; 35 °
 56'14"N, 138 °06'12"E: Loc. no. A6, small cliff at the back of
 Ushiroyama public hall, Ushiroyama, Konami-ku, Suwa City,
 Nagano Prefecture; 35 °58'41"N, 138 °04'08"E

Moriya Formation
 Miocene

***Mercenaria protostimpsoni* Amano, 1983**

Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 4, p. 52, pl.
 2, figs. 8a-b

Holotype: IGUT no. 15366 (Loc. no. T2), Paratype: IGUT nos.
 15367 (Loc. no. T2), 15369 (Loc. no. T52)

River floor of the Rumoi River, about 50 m south of the
 Togeshita railway station, Rumoi City, Hokkaido, Loc. no. T52:
 Northern cliff at the Santomari Elementary School, Rumoi City,
 Hokkaido

Togeshita Formation
 Late Miocene

***Mercenaria sigaramiensis* (Makiyama) see *Venus sigaramiensis* Makiyama, 1927**

***Mercenaria stimpsoni* (Gould)** reported by Shuto (1960) from
 the Pliocene Takanabe Formation, Miyazaki Prefecture; see
***Venus stimpsoni* Gould, 1861**

Mercenaria y-iizukai* (Kanehara) see *Venus (Chione) y-iizukai* Kanehara, 1937**Mercenaria yokoyamai* (Makiyama) see *Venus yokoyamai* Makiyama, 1927*****Meretrix arugai* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 2, p. 30, pl.
 2, figs. 11, 12

Holotype: GT no. 10010

(A few meters below the dam of the Saijo-gawa, about 200 m
 NNW of the Shobara Railway Station and about 500 m NEE of
 the bridge at) Suketo, Shobara-machi, Hida-gun, Hiroshima
 Prefecture (34 °51'43"N, 133 °01'05"E)

(Shobara Formation)
 Miocene

***Meretrix hikoshimensis* Okamoto and Sakai, 1995**

Bull. Mizunami Fossil Mus., no. 22, p. 45, pl. 8, figs. 2-14
 Holotype: GK-L no. 7848 (pl. 8, fig. 2) of Tomita and Ishibashi
 (1990; pl. 12, figs. 3-5) (reported type specimens registered GK-L
 no. 7246 in original paper), Paratype: GK-L no. ? (fig. 3)

Loc. 19; southwest coast of the *Glycymeris* 4 bed in Hikoshima

Nishiyama-2 chome, Shimonoseki City, Yamaguchi Prefecture
 Ashiya Gourp
 Oligocene

***Meretrix iizukai* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 20, pl. 3,
 figs. 2, 3

Holotype: (fig. 2, designated by Hatai and Nisiyama (1952)) GT
 no. ?

Izura (Sea cliff at Izura, Otsu-machi, Taga-gun, Ibaraki
 Prefecture; 36 °49'06"N, 140 °48'02"E)

Shirado (Kokozura Formation)

Pliocene (Miocene)

(*Clementia (Compsomyax) iizukai* (Yokoyama) by Hatai and
 Nisiyama (1952))

***Meretrix indecoroides* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 76, pl. 7, fig. 6

Holotype: GSJ no. ?

Nanko, Kozan Sho, Chikunan-gun, Shinchiku-syu, Taiwan

Lower Bryoritz Bed

Pliocene

***Meretrix meretrix ninohensis* Hatai, 1940**

Bull. Biogeogr. Soc. Japan, vol. 10, no. 9, p. 128, pl. 1, fig. 1

Holotype: GS no. 61351

River cliff of the Mabechi-gawa, opposite Yazawa,
 Nisatai-mura, Ninohe-gun, Iwate Prefecture (40 °18'05"N, 141 °
 19'E)

Shiratori Formation

Miocene

***Meretrix oywana* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 350, pl.
 41, fig. 5

Holotype: GT no. ?

Dainichi (Valley about 359 m NW off Dainichi, Fukuroi City,
 Shizuoka Prefecture; 34 °48'07"N, 137 °56'E)

Satsuka Formation

Pliocene

(*Pseudamiantis oywana* (Yokoyama) by Hatai and Nisiyama
 (1952))

***Meretrix parameretrix* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p.
 257, pl. 34, figs. 11a-12b

Holotype: (fig. 12) SM no. 13019, Paratype (fig. 11), SM no.
 13019

Goroku cliff along the right bank of the Hirose-gawa, Aoba-ku,
 Sendai City, Miyagi Prefecture (38 °14'N, 150 °52'E)

Tatsunokuchi Formation

Pliocene

***Meretrix pseudomeretrix* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 65, pl. 9, figs. 7, 7a

Holotype: GS no. 35361, Paratype: GS no. 36361

(Beach rocks W of Hachiman-zaki, about 300 m N of) Waita, Shimago-mura, Onga-gun, Fukuoka Prefecture (33°55'52"N, 130°43'38"E)

Wakita Formation

Oligocene

***Meretrix tauyensis* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 178, pl. 48, figs. 1, 2

Holotype: (fig. 1) designated by Hatai and Nisiyama (1952), GT no. ?, Paratype (fig. 2), GT no. ?

Kami-Tagami (road-side cutting along the Asano-gawa, about 500 m SE off the contact point of the two small roads at Kami-Tagami, Asakawa-mura, Kahoku-gun, Ishikawa Prefecture; 36°31'30"N, 136°42'18"E)

Onma Formation

Pliocene (early Pleistocene)

***Meretrix tochiensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 285, pl. 60, figs. 1, 2

Holotype: IGPS no. 85507 (fig. 1)

Cliff of the Hoki River, about 100 m down stream from Daikoku-iwa, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatatazawa Formation

Miocene

***Meretrix uzenensis* Zinbo, 1973**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 160, pl. 14, fig. 1

Holotype: Yamagata Prefect. Museum, no. 110

Loc. No. I, left-bank of the Shirakawa River, about 300 m NW of Nishitakamine, Iide-machi, Nishiokitama-gun, Yamagata Prefecture

Utsutoge Formation

Miocene

***Merisca onishii* Inoue and Mizuno, 1969**

In Mizuno and Inoue, 1969, Bull. Geol. Surv. Japan, vol. 20, no. 10, p. 653, pl. 30, figs. 1a-c

Holotype: GSJ no. ?

Lower stram of the Nanajugo-no-sawa, tributary of the river Poronai-gawa (=Horonai-gawa), Mikasa City, Hokkaido

E zonule of the Poronai Formation

Oligocene (upper Eocene)

***Merisca (s. s.) orientalis* Kanno, O'hara and Caagusan**

Geol. Palaeont. Southeast Asia, vol. 24, p. 71, pl. 15, figs. 8a-b

Holotype: JUE no. 10015, Paratype: JUE no. 10016

River floor and the river side bank of the Madlum River, near the Tartaro Bridge, San Miguel, Bulacan, Central Luzon, Philippines

Tartaro Formation

Upper Miocene

Microcallista munroei* (Yokoyama)** reported by Miyajima (1959) from the Paleogene Shiroki Formation, Hokkaido (Paphia munroi* (Yokoyama)** by Masuda and Noda (1976))

***Miyagipecten* Masuda, 1952 n. gen.**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 8, p. 251,

Type-species: *Miyagipecten matsumoriensis* Masuda described from the Miocene Nanakita Formation, Miyagi Prefecture

***Miyagipecten matsumoriensis* Masuda, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 8, p. 252, pl. 24, figs. 4a-7b

Syntype: IGPS no. 90608, 90615, 90682

The foot of the dam of the water reservoir at Dogasawa, about 700 m N of Matsumori, Izumi-ku, Sendai City Miyagi Prefecture (38°19'08"N, 140°55'44"E)

Nanakita Formation

Miocene (upper Miocene)

***Miyagipecten saromensis* Hasimoto and Kanno, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 32, p. 287, pl. 42, figs. 1-5

Holotype: TKD no. 6195 (fig. 1), Paratype: TKD no. 6196 (same locality)

Loc. No. 1, a road side cutting at the entrance of the Jyuroku-go valley, Chirai, Saroma-machi, Tokoro-gun, Hokkaido

Chirai Formation

Miocene

(***Masudapecten ? saromensis* Hasimoto and Kanno** by Mauda and Noda (1976))

***Mizuhopecten* Masuda, 1963 n. gen.**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 52, p. 151,

Type-species: *Pecten yessoensis* Jay, 1857

***Mizuhopecten kamagai* Nagasawa, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 111, pl. 12, figs. 1-7

Holotype: I. Kamaga's collection (resident of Fukue Islet; private), no. ?

Dredged specimens off Danjo Islands, Nagasaki Prefecture

Pliocene (may be Pleistocene)

***Mizuhopecten kimurai* (Yokoyama)** see ***Pecten kimurai* Yokoyama, 1925**

***Mizuhopecten kimurai kagaensis* Ogaswara, 1976**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 46, no. 2, p. 43, pl.

14, figs. 10, 17, pl. 15, figs. 8, 9, 12, 16, 18

Holotype: IGCP no. 95012 (pl. 15, fig. 12), Paratype: IGPS no. 95013-1, -10 (pl. 14, figs. 10, 17, pl. 15, figs. 8, 9, 16, 18)

River floor of Sai-kawa (-gawa), about 1000 m upstream, Omma Bridge, Omma, Kanazawa City, Ishikawa Prefecture
Saikawa Formation
Miocene (middle Miocene)

Mizuhopecten kimurai murayamai (Yokoyama) see *Pecten murayamai* Yokoyama, 1926

Mizuhopecten kimurai ugoensis (Hatai and Nisiyama) see *Pecten kimurai ugoensis* Hatai and Nisiyama, 1939

Mizuhopecten kimurai yudaensis (Masuda) see *Patinopecten kimurai yudaensis* Masuda, 1960

Mizuhopecten kitamiensis Uozumi, Fujie and Matsui, 1966

Jour. Fac. Sci., Hokkaido Univ., ser. 4, vol. 13, no. 2, p. 171, pl. 14, figs. 4, 5, pl. 15, figs. 2, 3

Holotype: UH no. 13730a (pl. 15, fig. 2)

Cliff of the river of Muka, near Ainonai-mura, Tokoro-gun, Kitami Province, Hokkaido (43°47'30"N, 143°44'30"E)
Ainonai Formation
Miocene

Mizuhopecten matumoriensis (Nakamura) see *Pecten (Patinopecten) kimurai* Yokoyama, *matumoriensis* Nakamura, 1940

Mizuhopecten paraplebejus murataensis Masuda and Takegawa, 1965

Saito Ho-on Kai Mus. Res. Bull., no. 34, p. 10, pl. 1, figs. 7-10

Holotype: IGPS no. 90826 (fig. 7) (originally DGS no. 4681)

Loc. No. 17, road cliff at Nanamagari Pass, about 250 m SE of the junction of two main roads at the boundary of Murata-machi and Kawasaki-machi, Shibata-gun, Miyagi Prefecture (38°09'27"N, 140°42'27"E)

Fukuda Formation

Miocene

Mizuhopecten poculum (Yokoyama) see *Pecten poculum* Yokoyama, 1926

Mizuhopecten tokyoensis hokurikuensis (Akiyama) see *Patinopecten tokyoensis hokurikuensis* Akiyama, 1962

Mizuhopecten yamasakii iwasakiensis (Nomura) see *Pecten (Pecten) iwasakiensis* Nomura, 1935

Mizuhopecten yessoensis (Jay) see *Pecten yessoensis* Jay, 1857

Modiolus arakawensis (Kanno) see *Volsella arakawaensis* Kanno, 1958

Modiolus chichibuensis (Kanno) reported by Kanno (1960) from the Miocene Nagura Formation, Saitama Prefecture; see *Volsella chichibuensis* Kanno, 1958 (*Modiolus arakawensis* (Kanno) by Masuda and Noda (1976))

Modiolus difficilis Kuroda and Habe reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture

Modiolus modiolus Linnaeus reported by Noda (1973) from the Pliocene Gobanshoyama Formation, Miyagi Prefecture

Modiolus nakamurai Itoigawa and Shibata, 1975

Bull. Mizunami Fossil Mus., no. 2, p. 23, pl. 7, figs. 3-7

Holotype: MFM no. 10022, Paratype: MFM nos. 10023-10027
Matsugase, Akeyo-cho, Mizunami City, Gifu Prefecture (Loc. no. 136)

Yamanouchi Member of the Mizunami Group

Miocene

Modiolus sirahensis (Jousseau) var. reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture

Modiolus wanizakiensis Masuda, 1966

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 324, pl. 35, figs. 8a-9

Holotype: IGPS no. 90876 (figs. 8a-b)

Loc. No. 33, road cutting at Wanizaki, Suzu City, Ishikawa Prefecture; 37°30'36"N, 137°13'28"E

Higashi-Innai Formation

Miocene

Modiolus (Modiolatus) yasuiro Kamada, 1962

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 72, pl. 3, figs. 13-14b

Holotype: IGPS no. 79379 (fig. 13)

Numanouchi Harbor, Toyama-machi, Taira City (Iwaki City), Fukushima Prefecture

Numanouchi Formation

Miocene

Moerella rutila (Dunker) reported by Itoigawa (1974) from the Miocene Tsukiyoshi Formation, Gifu Prefecture

Monia denselineata Hatai, Masuda and Suzuki, 1961

Saito Ho-on Kai Mus., Res. Bull., no. p. 26, pl. 2, figs. 1a-3

Holotype: IGPS no. 90505 (figs. 1a-b)

Loc. No. M 1 (river side cliff of the Chikagawa River, about 1000 m downstream across the JR Mutsu Line and the river, Chikagawa, Mutsu City), Aomori Prefecture

Hamada Formation

Pliocene (lower Pleistocene)

***Monia macrochisma* (Deshayes)** reported by Tanaka (1961) from the Miocene Moriya Formation, Nagano Prefecture

***Monia macrochisma ezoana* (Kanahara)** reported by Hatai, Masuda and Suzuki (1961) from the Pleistocene Hamada Formation, Aomori Prefecture; see ***Pododesmus* (*Monia*) *macrochisma* (Deshayes) var. *ezoanus* Kanehara, 1942**

***Monia umbonata* (Gould)** reported by Hatai, Masuda and Suzuki (1961) from the Pleistocene Hamada Formation, Aomori Prefecture; see ***Pododesma umbonata* Gould, 1861**

***Musculus hataii* Araki, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 36, p. 162, pl. 18, fig. 1

Holotype: Mie Univ. no. ?

Road-side cliff at about 300 m NW of Onohira, Geino-cho, Age-gun, Mie Prefecture

Kaisekizan Formation

Miocene

***Mya arenaria kitahukuokaensis* Hatai, 1940**

Bull. Biogeogr. Soc. Japan, vol. 10, no. 9, p. 131, pl. 1, fig. 9

Holotype: GS no. 61363

Junction of the Shiratori valley and the Anaushi valley, just below Anaushi, Kitafukuoka-machi, Ninohe-gun (Ninohe City), Iwate Prefecture (40°15'07"N, 140°19'05"E)

Kadonosawa Formation

Miocene (early middle Miocene)

***Mya convexa* Noda, 1992**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 62, nos. 1-2, p. 90, pl. 7, figs. 1-9

Holotype: IGPS no. 100877 (loc. SK11), Paratype: IGPS nos. 100875 (Loc. no. SK7), 100878, 100879 (Loc. no. SK11), 100974 (Loc. no. SH34)

Loc. no. SK11; middle stream of the Chepotsunai River, a tributary of the Kotanbetsu River, Haboro-machi, Rumoi Province, Hokkaido; Loc. no. SK7; middle stream of the Chepotsunai River; Loc. no. SH34; middle stream of the Migimatazawa, a tributary of the Sankebetsu River, Haboro-machi, Tomamae-gun, Rumoi Province, Hokkaido

Sankebetsu Formation, lower part

Miocene (Oligocene)

***Mya cuneiformis* (Böhm)** reported by Otuka (1941) from the Miocene Kurosawa Formation, Akita Prefecture

***Mya cuneiformis* var. *tagawensis* Fujiie, 1957**

Jour. Fac. Sci., Hokkaido Univ. Ser. 4, vol. 9, no. 4, p. 397, pl. 4, figs. 1a-c

Holotype: UH no. 11309

Outcrop along the bank of the Sorachi River, near town of Takigawa, Sorachi district (Takikawa City), Ishikari Province, Hokkaido

Takigawa Formation (Takikawa Formation)

Pliocene

***Mya donaciformis* Kuroda, 1931**

In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 63, text-fig. 7

Holotype: GK no. ?

South bank of Dojiri-gawa, S of Ikari, Sakae-mura, Kamiminochi-gun, Nagano Prefecture (36°36'N, 138°04'E)

Ogawa (Shigarami Formation)

Miocene (Pliocene)

(***Mya cuneiformis* (Böhm) ?** by Hatai and Nisiyama, 1952))

***Mya ezoensis* Nagao and Inoue, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 145, pl. 34, fig. 2

Holotype: GH no. ? (designated by Hatai and Nisiyama, 1952 as fig. 2), Paratype: GH no. ? (pl. 43, figs. 7-9)

Koguchinosawa, a small tributary of the Panke-gawa, Yubari-gun (Yubari City), Ishikari Province, Hokkaido (42°57'48"N, 142°04'02"E)

Ishikari Series

"Paleogene" (Oligocene)

***Mya ezoensis* var. *sagittaria* Minato and Uozumi, 1950**

In Minato, Matsui and Uozumi, 1950, p. 5, pl. 10, figs. 76a-77b, 80a-b

Syntype: UH no. ?

Exposure between the Shikanotani and Shimizusawa, Yubari City, Hokkaido

Wakkanabe Formation

Tertiary (Eocene)

(***Mya sagittaria* Minato and Uozumi** by Masuda and Noda (1976))

***Mya grewingki* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 10, no. 2, art. 6, p. 156, pl. 7, fig. 50

Holotype: GT no. ? (*Mya crassa*, Yokoyama, 1924; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 55, art. 3, p. 12, pl. 1, figs. 11-16)

Sea cliff of Yotsukura-machi, Iwaki-gun, Fukushima Prefecture (37°07'N, 141°E)

Asagai Formation

Oligocene

***Mya grewingki* var. *elongata* Nagao and Inoue, 1950**

Cenozoic Res., no. 7, p. 5 (107), pl. 10, fig. 89

Holotype: HU no. ?

Nishisakutan, Karafuto (Sakhalin, Russia) and Tokoro, Abashiri (Province, Hokkaido)

Nishisakutan and Tokoro Formations

Oligocene?

(*Mya grewingki nagaoui* Oyama and Mizuno by Masuda and Noda (1976))

***Mya grewingki* var. *haboroensis* Fujie, 1957**

Jour. Fac. Sci., Hokkaido Univ. Ser. 4, vol. 9, no. 4, p. 392, pl. 5, figs. 1a-4

Holotype: UH no. 11340 (fig. 1), Paratype: UH no. 8981 (figs. 3a-c)

Upper stream of the Haboro River, Haboro, Tomamae-gun, Teshio Province, Hokkaido; Paratype, Okabeno-sawa, Haboro, Tomamae-gun, Teshio Province, Hokkaido

Chikubetsu Formation

Miocene

***Mya grewingki* var. *kusiroensis* Nagao and Inoue, 1941**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 150, pl. 32, fig. 6

Holotype: GH no. ? (designated by Hatai and Nisiyama, 1952 as fig. 6)

Yubetsu Coal-field, (Side cliff of the Shitakara-gawa, a short distance SW of the Yubetsu coal-mine, Shitakara-mura) Akan-gun, Kushiro Province Hokkaido (43°12'42"N, 144°04'43"E)

Shitakara Formation

Oligocene

(*Mya grewingki kusiroensis* Nagao and Inoue by Masuda and Noda (1976))

***Mya (Mya) hasimotoi* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 196, pl. 5, figs. 1a-b

Holotype: TKD no. 5574, Paratype: TKD no. 5575 (same locality)

Loc. No. 614, a small cliff, about 200 m S of the Shibahara Mineral-spring, Shibahara, Arakawa-mura, Chichibu-gun, Saitama Prefecture

Nagura Formation

Miocene

Mya (Arenomya) japonica Jay reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture

***Mya miyagiensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 222, pl. 16, fig. 13

Holotype: SM no. 5970

Western side cliff of the Ajiri hill, about 500 m N of Ajiri and about 300 m E of the crossing point of the two roads in Nakanoshima, Shiogama City, Miyagi Prefecture (38°18'47"N, 141°02'17"E)

(Chiganoura Formation)

Miocene

(*Mya (Arenomya) miyagiensis* Nomura by Hatai and Nisiyama (1952): *Apolymetis* ? *miyagiensis* (Nomura) by Oyama (1961):

Bull. Geol. Surv. Japan, vol. 12, no. 5))

Mya japonica oonogai Makiyama reported by Fujie (1957) from the Miocene Takinoue Formation, Hokkaido

***Mya paternalis* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 98, pl. 39, figs. 5-10

Syntype: unknown

Western foot of the hill on the right bank of the small river at Goroichi, a short distance W of Azuki-jima, Medeshima-mura, Natori-gun (Natori, City) Miyagi Prefecture (38°09'N, 140°52'E)

Tatsunokuchi Formation

Pliocene

(*Mya (Arenomya) cuneiformis* (Böhm) by Hatai and Nisiyama (1952))

***Mya (Arenomya) ? rumoiensis* Amano, 1981**

Venus, vol. 40, no. 1, p. 29, text-figs. 2 to 7 and 8

Holotype: IGUT no. 15062, Paratype: IGUT nos. 15063-1, -3

Loc. no. 2; small creek-side cliff at about 100 m upstream of the junction of the Junisen-no-sawa and Doken-zawa, Rumoi City, Hokkaido

Yudoro Formation

Early Middle Miocene

Mya truncata Linnaeus reported by Nagao and Inoue (1941) from the Miocene Oiwake Formation, Hokkaido

***Mya urusikuboana* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 119, pl. 5, figs. 6, 7

Holotype: SM no. 2140

Urushikubo (Southwest cliff of the Agano-gawa, about 1 km SE of the bridge of) Ogino, Yamago-mura, Yama-gun, Fukushima Prefecture (37°26'02"N, 139°43'05"E)

Hitosao Formation

Pliocene (Miocene)

***Mya uzenensis* Nomura and Zinbo, 1937**

Saito Ho-on Kai Mus. Res. Bull., no. 13, p. 167, pl. 22, fig. 17

Holotype: SM no. 8486

Iguchi (Road side cliff along the Nishigori-gawa, about 700 m E of the bridge at Iguchi, Toyodqa-mura, Mogami-gun, Yamagata Prefecture; 38°50'19"N, 140°12'E)

Matsuzawa Formation

Pliocene

(*Mya (Arenomya) uzenensis* Nomura and Zinbo by Hatai and Nisiyama (1952))

Myadora japonica Habe reported by Takayasu (1961) from the Pliocene Sasaoka Formation, Akita Prefecture

***Myadora okadae* Hatai and Masuda, 1960**

Saito Ho-on Kai Mus., Res. Bull., no. 29, p. 33, figs. 1, 2

Holotype: IGPS no. 90184 (originally DGFET, no. 3930)
Road side cutting south of Takada about 1 km NW of the
junction of the two roads at Moniwa, Sendai City, Miyagi
Prefecture (38 °13'24"N, 140 °46'32"E)
Moniwa Formation
Miocene

***Myadora okinawajimana* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 93, pl. 3,
figs. 2a-b

Holotype: IGUT no. 10421

Loc. no. 16: Road side cliff of Route no. 331, about 300 m E of
Kuteken, Chinen-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Myadora proxima* (Smith) reported by Sawada (1962) from the
Pliocene Nakanokawa Formation, Hokkaido**

***Myadora suzuensis* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 324, pl. 35,
figs. 10, 11

Holotype: IGPS no. 90777 (fig. 11)

Loc. No. 24, river cliff about 500 m E of Fujio, Suzu City,
Ishikawa Prefecture; 37 °27'59"N, 137 °07'40"E

Higashi-Innai Formation

Miocene

***Myadora yokoyamai* (Otuka, MS) Habe, 1950**

In T. Kuroda, Illust. Catal. Japan Shells, no. 4, p. 28, pl. 4, figs. 7-9

Holotype: Kyoto Univ. no. ?

Naganuma (Totsuka-ku, Yokohama City), Kanagawa Prefecture
Naganuma Formation

Pliocene (Pleistocene, ca. 0.5 Ma)

(Originally described as a new name for *Myadora triangularis*,
Yokoyama (1929; Jour. Coll. Sci. Imp. Univ. Tokyo, vol. 39 .
no. 6, p. 144, pl. 11, figs. 14-15 (not Dunker, 1882)) reported
from the Naganuma Bed, Kanagawa Prefecture)

***Myadropsis transmonata* (Yokoyama) reported by Itoigawa
(1974) from the Miocene Kujiri and Yamanouchi Formations,
Gifu Prefecture**

***Mysia pacifica* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 53

Holotype: UT no. ?

Cutting along the railway at Oji, environs of Tokyo (Kita-ku,
Tokyo Prefecture)

Oji Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(*Diplodonta ? pacifica* (Tokunaga))

***Mysella japonica* (Yokoyama) see *Montacuta japonica*
Yokoyama, 1922**

***Mytilus corusus* Gould reported by Shikama (1973) from the
Miocene Zushi Formation, Kanagawa Prefecture**

***Mytilus crassitesta* Lischke reported by Ozaki (1958) from the
Pliocene Naarai Formation, Chiba Prefecture**

***Mytilus grayanus* Dunker reported by Yokoyama (1925) from
the Miocene Shirado (Kokozura) Formation, Fukushima
Prefecture**

***Mytilus haboroensis* Noda, 1992**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 62, no. 2. 1-2, p.
61, pl. 3, figs. 12a-13

Holotype: IGPS no. 100727, Paratype: IGPS no. 100728,
100729 (loc. SH3)

Loc. no. SS2; upper stream of the Mose-takinai River, Paratype
loc. no. SH3; middle stream of the Nijunisen-zawa, a tributary of
the Haboro River, Haboro-machi, Tomamae-gun, Rumoi
Province, Hokkaido

Sankebetsu Formation

Miocene (Oligocene)

***Mytilus hirsutus* Lamarck reported by Yokoyama (1927; Jour.
Fac. Sci., Imp. Univ. Tokyo, sec. 2, pt. 4, p. 187, pl. 50, figs. 3,
4) from the Oligocene Nishisonogi Formation, at Hakoijima,
Saga Prefecture (*Septifer yokoyamai* Hatai and Nisiyama n. sp.
1952)**

***Mytilus k-sakurai* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 278, pl. 33, figs.
1-3, 12

Holotype: SM no. 9274.

Middle course of the Komatazawa, a tributary of the
Aiuchi-gawa, Aiuchi-mura, western side of the
Tsugaru-Peninsula, Kitatsugaru-gun, Aomori Prefecture (41 °
04'N, 140 °22'06"E)

Isomatsu Formation

Oligocene (early Miocene)

***Mytilus luciferus* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 19, pl. 4, fig. 4

Holotype: GT no. ?

The Araya coal-mine (the Araya coal-mine immediately N of
Oya, Yamada-machi, Iwaki-City, Fukushima Prefecture; 36 °
56'N, 140 °44'08"E)

Iwaki Formation

Miocene (Oligocene)

**(*Mytilus crassitesta luciferus* Yokoyama by Hatai and
Nisiyama (1952))**

***Mytilus mabuchii* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 597, pl. 3, figs. 8a-9b

Holotype: GSJ no. 5015 (figs. 8a-b)

Chambetsu-gawa, Ombetsu-mura (-cho), Shiranuka-gun,

Hokkaido
Omagari Formation of the Ombetsu Group.
Oligocene

***Mytilus ogawaensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 89, pl. 24, fig. 17
Holotype: GS no. 722503, Paratype: GS no. 72512
Stream exposure slightly W of Ogawa, Kawabe-mura (-machi),
Iwaki-gun (Iwaki City), Fukushima Prefecture (36°54'N, 140°
47'05"E)
Iwaki Formation
Oligocene

***Mytilus takiensis* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 20, pl. 4, figs. 5-6
Holotype: GT no. ?
The Taki coal-mine (The Taki Coal-mine, about 600 m SW of
Taki, Kadono-mura (Kadonotaki), Iwaki-gun (Iwaki City),
Fukushima Prefecture; 36°59'02"N, 140°44'05"E)
Iwaki Formation
Miocene (Oligocene)

***Mytilus tichanovitchi* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art.
6), p. 134, pl. 4, figs. 11, 12
Holotype: UK no. ?
Cliff along the Cape Mary, eastern part of the abandoned village
Matchgar in Schmidt Peninsula, Sakhalin
A bed of marl associated with *Thyasira bisecta*, Matchgar
horizon 5'; basal bed of the Miocece
Miocene (early Miocene)

***Nanaochlamys* Hatai and Masuda, 1953 n. gen.**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 11, p. 76,
Type-species; *Pecten notoensis* Yokoyama (1929; Rep., Imp.
Geo. Surv. Japan, no. 104) described from the Miocene Nanao
Formation, Ishikawa Prefecture

***Nanaochlamys kitamurai* (Kotaka) see *Chlamys kitamurai*
Kotaka, 1955**

***Nanaochlamys notoensis* (Yokoyama)** reported by Hatai and
Masuda (1953; Trans. Proc. Palaeont. Soc. Japan, N. S., no. 11)
from the Miocene Nanao Formation, Ishikawa Prefecture and
the Miocene Moniwa Formation, Miyagi Prefecture

***Nanaochlamys notoensis otutumiensis* (Nomura and Hatai)**
reported by Masuda (1960; Sci. Rep., Tohoku Univ., 2nd Ser.
(Geol.), Spec. Vol., no. 4 (Hanzawa Mem. Vol.)) from the
Miocene Suenomatsuyama Formation, Iwate Prefecture and the
Miocene Otsutsumi Formation, Miyagi Prefecture; see *Pecten*
otutumiensis Nomura and Hatai, 1937

***Nanaochlamys notoensis setanaensis* Kanno, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 73, p. 56,
pl. 3, figs. 1-4
Holotype: TKD no. 6583 (fig. 2), Paratype: TKD no. 6584
Cliffs of the Meppu River near the Kaigara Bridge, Meppu,
Imagane-machi, Setana-gun, Hiyama Province, Hokkaido
Yakumo Formation
Miocene
(Synonymous with *Nanaochlamys notoensis* (Yokoyama) by
Masuda and Noda (1976))
***Neilonella coix* Habe** reported by Aoki (1960) from the
Pliocene Nakazato Formation, Kanagawa Prefecture

***Neilonella isensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 59, pl. 1, figs.
7a-b
Holotype: ESN no. 30002
Loc. No. K73, Nakanomura, Hakusan-machi, Ichishi-gun, Mie
Prefecture
Oi Formation
Miocene

***Neilonella poronaica* (Yokoyama)** reported by Oyama (1951)
from the Eocene Poronai Formation, Hokkaido; see *Nucula*
poronaica Yokoyama, 1890

***Neilonella soyoae* Habe** reported by Shibata (1974) from the
Oidawara Miocene Formation, Gifu Prefecture; see *Pecten*
otutumiensis Nomura and Hatai, 1937

***Nemocardium ezoense* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 82, pl. 9,
figs. 1-6, 8, 9, pl. 10, figs. 1, 2, pl. 11, fig. 1
Holotype: UH no. 9199 (figs. 4, 5, 8), Paratype: UH nos. 572,
918, 9187, 9191, 9201-3, 9205 (loc. No. H461), 11083,
11085-7 (loc. No. H275), 11092-4 and 11099 (loc. Nos. T500,
T-100-K, H461, H271, T70, H275 and H48
Loc. No. H276, Upper course of Koikatahorokatyaro creek,
upper tributary of Tyaro River, Kushiro Province, Hokkaido;
43°14'40"N, 143°50'50"E: Paratypes; Loc. No. H461, 770 m
upstream from H48 (along the southwest branch 1700 m from
the junction with first main tributary of Takutakupeobetsu creek,
upper tributary of Tyaro River, Kushiro Province, Hokkaido;
Loc. No. H275, 200 m downstream from H276)
Poronai Formation
Oligocene (late Eocene)

***Nemocardium (Aarctopratulium) ezoense* Takeda** see
***Nemocardium ezoense* Takeda, 1953**

***Nemocardium iwakiense* Makiyama** reported by Hirayama
(1955) however it was misprint, it should be ***Nemocardium***
iwakiense* (Makiyama)**; see ***Cardium (Nemocardium)
***iwakiense* Makiyama, 1934**

Nemocardium (Nemocardium) khomenkoi Kafanov and Ogasawara, 1999

Bull. Mizunami Fossil Museum, no. 26, p. 7, fig. 5
 Holotype: CNIGRM no. 109/5043 (Central-Research Geol. Explor. Mus., Chernychev, St. Petersburg, Russia)
 North of the mouth of Vengeri River, Schmidt Peninsula, Okha District, Sakhalin
 Vengeriyskaya Suite (Vengeri Formation)
 Late Miocene

Nemocardium samarange Makiyama reported by Hirayama (1954) was misprint; it should be ***Nemocardium samarangae (Makiyama)***; see ***Cardium samarangae Makiyama, 1934***

Nemocardium (Keenaea) samarangae (Makiyama) reported by Shuto (1960) from the Miocene Kawabaru and Pliocene Takanabe Formations, Miyazaki Prefecture

Nemocardium (Keenaea) samarangae obliqua Ozaki, 1956

Bull. Nat. Sci. Mus., vol. 3, no. 1, p. 4, pl. 1, fig. 13
 Holotype: NSM no. 4377
 Nisinotani, Nobori, Hane Twon (Hane-machi), Aaki-gun, Kochi Prefecture
 Nobori Formation
 Miocene (Pliocene)

Nemocardium (Keenaea) samarangae taiwanensis Masuda and Huang, 1990

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 153, pl. 7, figs. 3-5
 Holotype: NMNS no. 003309 (Loc. no. KS 660), Paratype: NMNS no. 003310 (Loc. no. KS 660)
 Kuanyinshan Sandstone at Wachi section, central Taiwan
 Kuanyinshan Sandstone
 Middle Miocene

Nemocardium yokoyamai Takeda, 1953

Stud. Coal. Geol., no. 3, Hokkaido Assoc. Coal Mim. Technol., p. 84, pl. 9, figs. 10-12, pl. 10, fig. 4; Type, *Cardium tristiculum*, Yokoyama (1930; Jour. Fac. Sci., Imp. Univ. Tokyo, sec. , vol. 2, part 10, pl. 78, figs. 3-6)
 Holotype: UT no. ?, Syntype: HU nos. 9189, 9194, 9196, 9202, 11084
 Shiromizu Hotspring, Kawakami-mura, Toyoha-gun, South Sakhalin.
 Uncertain (probably base of Tertiray)
 (Paleogene)

Nemocardium (Keenaea) yoshidai Masuda and Miyasaka, 1994

Saito Ho-on Kai Mus., Nat. Hist., Res. Bull., no. 62, p. 1, pl. 1, figs. 1a-3b
 Holotype: IGPS no. 102544, Paratype: IGPS nos. 102545, 102546
 Cliff along a small stream at Takinosawa, Osawago-shuku, Nishisenboku-machi, Senboku-gun, Akita Prefecture

Tentokuji Formation
 Pliocene

Nipponarca japonica Taguchi, 1983

Bull. Mizunami Fossil Mus., no. 10, p. 25, pl. 7, figs. 1a-11
 Holotype: IGSH-ET no. 10028, Paratype: IGSH-ET nos. 10029-10038
 Shinden, Tsuyama City, Okayama Prefecture
 Yoshino Formation of the Katsuta Group
 Middle Miocene

Nipponolimopsis azumana (Yokoyama) reported by Itoigawa (1974) from the Miocene Nataki Formation, Gifu Prefecture; see ***Limopsis azumana Yokoyama, 1910***

Nipponolimopsis kutekenensis Noda, 1980

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 78, pl. 12, figa. 11a-b
 Holotype: IGUT no. 10338
 Loc. no. 317: Small road side cliff at pass between Kuteken and Tedokon, Chinen-mura, Shimajiri-gun, Okinawa Prefecture
 Shinzato Formation
 Pliocene

Nipponomarcia nakamurai Ikebe see ***Katylisia (Nipponomarcia) nakamurai***, Ikebe (1941; Venus, vol. 11, p. 50, p. 49-54, pl. 2) described from the Miocene Togari Formation, Gifu Prefecture

Nipponomarcia nakamurai imobarensis Itoigawa and Shibata, 1976

Bull. Mizunami Fossil Mus., no. 3, p. 145, pl. 34, figs. 5a-7
 Holotype: MFM no. 20003, Paratype: MFM nos. 20004, 20005
 Imobora, Kawakami-cho, Kawakami-gun, Okayama Prefecture (Loc. no. G5)
 Bihoku Group, lower member
 Miocene

Nipponopagia Ogasawara, 1977 n. gen.: see below (Synonymous with ***Macoma***)

Nipponopagia ommaensis Ogasawara, 1977 n. gen. et n. sp.
 Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 47, no. 2, p. 126, pl. 15, figs. 4, 6, 8, pl. 16, fig. 3

Holotype: IGPS no. 95072, Paratype: IGPS no. 95073-1, -2
 Loc. no. KO-22; Cliff, distant from the road, 300 m W of Kaminaka-machi, Kanazawa City, Ishikawa Prefecture (136 ° 42'25"N, 136 ° 40'57"E)
 Omma Formation
 Pliocene (Pleistocene)
 (Synonymous with ***Macoma middendorffi Dall, 1886***)

Nipponopecten Masuda, 1963, n. subgen.

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 52, p. 194,

Type-species; *Pecten akihoensis* Matsumoto (1930; Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3) described from the Miocene Moniwa Formation, Miyagi Prefecture

***Noetia nagaoui* MacNeil, 1938**

U. S. Geol. Surv., Prof. Pap., 189-A, p. 30, pl. 4, figs. 19-21

Holotype: GS no. 36012

The Hoshuyama Mine (about 200 m S of the bridge at E of Kawamagari, and about 600 m W of the village office at Daigyoji, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture (33°23'26"N, 130°52'14"E)

Doshi Formation

Upper Eocene

(*Arca pondaungensis* Cotter var. *transversa* Nagao, 1928; *transversa* preoccupied)

***Notomyrtea minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 269, pl. 2, figs. 2a-b

Holotype: ESN no. 20018, Paratype: ESN no. 20019 (same locality)

Tsukiyoshi (L7), (Akeyo-machi, Tsukiyoshi) Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Notostrea musashiana* (Yokoyama)** reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture; see *Neopycondonta musashiana* (Yokoyama); see *Ostrea musashiana* Yokoyama, 1920

***Nucinella (Huxleyia) ochiaensis* Chinzei, 1959**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, vol. 12, pt. 1, p. 123, pl. 11, figs. 1-3

Holotype: CM no. 8566 (figs. 1, 2), Paratype: CM 8567 (fig. 3), 8568

Loc. 1, a small cliff, 100 m W of Ochiai, Kintaichi-mura (Kamikaijo), Ninohe-gun (Ninohe City), Iwate Prefecture

Kubo Formation

Pliocene

***Nucula akitana* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 55, pl. 3, fig. 1

Holotype: GT no. ?

(Northern foot of the Tenjikumori, about 900 m NE of the summit (367.1 m), and about 1.3 km SW of the bridge at Komatsugawa, Sannai-mura, Hiraga-gun, Akita Prefecture (39°16'33"N, 140°39'12"E)

Kurosawa Formation

Miocene

(*Nucula (Ennucula) akitana* Otuka by Hatai and Nisiyama (1952))

***Nucula cobboldiae* Sowerby** reported by Yokoyama (1926;

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 7, p. 246, pl. 31, figs. 3, 4) from the Pliocene Yuchi Formation (not Sowerby and sunonymus with *Acila (Truncacila) gotchei* (Böhm) by Hatai and Nisiyama (1952))

***Nucula eximia* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 11, pl. 1, fig. 14

Syntype: GT no. ?

(Valley of Kamenoo, Joban-Mizunoya-machi, Iwaki-City, Fukushima Prefecture; 36°59'07"N, 140°51'06"E)

Kamenoo (Mizunoya) Formation

Miocene

***Nucula fukasawaensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 282, pl. 59, fig. 1

Holotype: IGPS no. 85500

Fukasawa, about 1.8 km upstream from Kanezawa, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatatawa Formation

Miocene

***Nucula hizenensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 19, pl. 7, figs. 18, 18a

Holotype: GS no. 35985, Paratypes: GS nos. 35967, 35965

Southern coast (about 300 m S of the hill (149 m) on) Okino-shima, Iojima-mura, Nishisonogi-gun, Nagasaki Prefecture; 32°41'14"N, 129°46'52"E

Okinoshima Formation

Upper Eocene

(*Acila hizenensis* (Nagao) by Hatai and Nisiyama (1952))

***Nucula hokkaidoensis* Mizuno and Inoue, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 10, p. 652, pl. 30, figs. 4, 5

Holotype: GSJ no. ? (fig. 5)

The vicinity of Mitsubishi-Oyubari Coal-mine, Yubari City, Hokkaido

Poronai Formation

Oligocene (late Eocene)

***Nucula (Nucula) hookensis* Kanehara, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 11-2, p. 31, pl. 10, figs. 1, 2

Holotype: UT no. ?, Paratype: UT no. ?

Tatsuden-men, Shokaku-do, Gulf of Geijitsu, Keisho-Hokudo, South Korea

Ennichi Series

Miocene

***Nucula izirii* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 592, p. 222, pl. 2, figs. 5-7

Holotype: GT no. ?

Loc. 515 (Road-side cutting on Mansei highway, about 500 m

SE of Futatsugoya tunnel, Nakano-mura, Shinobu-gun (Fukushima City), Fukushima Prefecture; 37°50'23"N, 140°18'21"E)

Futatsugoya Formation
Miocene

***Nucula karatsuensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 20, pl. 7, fig. 17

Holotype: GS no. 35988

(Pass-side cutting on the boundary between Oyama-mura and Arita-machi, about 500 m NW of the shrine at) Obo, Arita-machi, Nishimatsuura-gun, Saga Prefecture (33°12'07"N, 129°52'36"E)

Kishima Formation
Oligocene

***Nucula kokoruraensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 87, pl. 25, figs. 1-5

Holotype: GS no. 72507

A small cliff in front of the grocery store at northern entrance to Kokozura, Nakoso-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture (36°51'03"N, 140°47'05"E)

Kokozura Formation
Miocene

***Nucula mazeana* Mizuno (1964MS)** reported by Mizuno (1964; Rep. Geol. Surv. Japan, no. 204, p. 53, figs. 20A-B) from the Oligocene Kishima Formation, Saga Prefecture

***Nucula milnei* Yokoyama, 1890**

Paleontogr., vol. 36, nos. 3-6, p. 195, pl. 22, figs. 2a-c, 3

Syntype: Munich Mus. no. ?

Poronai, Sorachi-gun, Ishikari (Probably near the Poronai caol-mine, a short distance SE of Poronai Station, Mikasayama-mura, Sorachi-gun, Ishikari Province, Hokkaido; 43°13'19"N, 141°54'52"E)

Poronai Formation
Cretaceous (Eocene)

***Nucula (Acila) osawaensis* Nomura and Zinbo, 1936**

Venus, vol. 6, no. 2, p. 106, text-figs. 3a-b

Holotype: SHM no. 8434

Kimibatake, Osawa-mura (Yawata-machi), Akumi-gun, Yamagata Prefecture

Sandy shale bed (Kannonji Formation ?)

Pliocene

***Nucula (Ennucula) osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 67, pl. 1, figs. 1a-b

Holotype: JC no. 1400001

Kashio (Loc. No. 48), Yatsuo-machi, Nei-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation
Miocene

***(Ennucula) osawanoensis* (Tsuda)** by Masuda and Noda (1976))

***Nucula picturata* Yokoyama, 1890**

Palaeontogr., vol. 36, nos. 3-6, p. 194, pl. 25, figs. 2a-b

Holotype: Munich Mus. not numbered

Poronai, Sorachi-gun, Ishikari (Probably near the Poronai caol-mine, a short distance SE of Poronai station, Mikasayama-mura, Sorachi-gun, Ishikari Province, Hokkaido; 43°13'19"N, 141°54'52"E)

Poronai Formation
Cretaceous (Eocene)

***(Acila) (Truncacila) picturata* (Yokoyama)** by Hatai and Nisiyama (1952))

***Nucula poronaica* Yokoyama, 1890**

Palaeontogr., vol. 36, nos. 3-6, p. 195, pl. 25, figs. 3a-c

Holotype: Munich Mus. not numbered

Poronai, Sorachi-gun, Ishikari (Probably near the Poronai caol-mine, a short distance SE of Poronai station, Mikasayama-mura, Sorachi-gun (Mikasa City), Ishikari Province, Hokkaido; 43°13'19"N, 141°54'52"E)

Poronai Formation
Cretaceous (Eocene)

***(Malletia) poronaica* (Yokoyama)** by Hatai and Nisiyama (1952))

***Nucula (Nucula) shiroyamaensis* Noda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Vol. 34, no. 3, p. 226, pl. 16, fig. 7

Holotype: IGPS no. 79061

Loc. No. 480, upstream of the Shirono-sawa, a tributary from the Shibumi River, facing the northern slope of the Uragawara-mura, Higashikubiki-gun, Niigata Prefecture

Nitta Formation

Pliocene

***(Ennucula) shiroyamaensis* (Noda)** by Masuda and Noda (1976))

***Nucula tokyoensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 181, pl. 19, figs. 10, 11

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Totsuka-ku, Yokohama City, Kanagawa Prefecture; 35°22'03"N, 139°32'05"E)

Naganuma Formation

Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

***Nucula (Acila) yanagawaensis* Nomura and Zinbo, 1936**

Venus, vol. 6, no. 2, p. 105, text-figs. 1a-2b

Holotype: SHM no. 6092

Yanagawa-mati (-machi), Date-gun, Hukusima-ken (Fukushima Prefecture; 37°51'05"N, 140°36'05"E)
Yanagawa Shell beds (Yanagawa Formation)
Miocene

***Nucula yotsukurensis* Hirayama, 1958**

Venus, vol. 20, no. 1, p. 96 (n. n. for *Nucula ventricosa*, Hiragawa, 1955); see below

***Nucula ventricosa* Hirayama, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 29, p. 77, pl. 1, figs. 12-15

Holotype: TKD no. 10225 (fig. 13), Paratype: TKD nos. 10226 (Loc. A29), 10237 (Loc. A30)

Loc. No. A14, sea cliff at about 400 m N of the Yotsukura Fishing Port, Yotsukura-machi (Iwaki City), Fukushima Prefecture; Paratype loc. No. A29; Cliff along the tributary of the Kobisa-gawa, a little west of Oyamada, Hisanohama-machi: Loc. A30, Cliff behind Mr. Takagi's house, Oyamada, Hisanohama-machi, Iwaki City, Fukushima Prefecture

Asagai Formation

Oligocene

(Synonymous with *Ennucula yotsukurensis* (Hirayama) by Masuda and Noda (1976))

***Nuculana (Nuculana) conceptionalis ikebei* Suzuki and Kanehara, 1936**

Jour. Geol. Soc. Japan, vol. 43, no. 510, p. 182, pl. 10, fig. 16

Holotype: GT no. ?

Ishigami, Shiratori-mura, Ithihara-gun, Chiba Prefecture (Railway-side cutting about 300 m W of the contact point of the two roads at Ishigami, NW to the Yoroikeikoku Station, Ichihara City, Chiba Prefecture; 35°16'02"N, 140°09'28"E)

Asobara (Hasumi Formation)

Pliocene

***Nuculana confusa congiensis* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 608, pl. 47, fig. 14

Holotype: GT no. 1290

Southeast valley of Shitarori (about 400 m SE of the temple at Shiratori), Ninohe-gun (Ninohe City), Iwate Prefecture (40°14'50"N, 141°20'23"E)

Lower Kadonosawa (Kadonosawa Formation)

Miocene

(*Nuculana (Saccella) confusa kongiensis* (Otuka) by Hatai and Nisiyama (1952))

***Nuculana (Saccella) confusa miensis* Araki, 1960**

Bull. Lib. Arts Dep., Mie Univ., Spec. Vol., no. 1, p. 77, pl. 5, figs. 3a-b

Holotype: Mie Univ. no. ?

West side of Onohira Pond, Onohira, Geino-cho, Age-gun, Mie Prefecture

Kaisekizan Formation

Miocene

(*Sacella miensis* (Arraki) by Masud and Noda (1976))

***Nuculana confusa semataensis* Suzuki and Isizuka, 1943**

Venus, vol. 13, nos. 1-4, p. 54, pl. 2, figs. 1-10, 12

Holotype: Inst. Shigen-kagaku, no. ? (fig. 1), Paratype (figs. 2, 3, 5-7)

Semata, Ichihigashi-mura, Ichihara-gun (Semata, Ichihara City), Chiba Prefecture

Semata Formation

Pleistocene

***Nuculana fujiformis* Kanehara, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 32, pl. 10, figs. 3, 4

Holotype: UT no. ?, Paratype: UT no. ?

Seika-men, Koken-ri, Gulf of Geijitsu, Keisho-Hokudo, South Korea

Ennichi Series

Miocene

***Nuculana hokkaidoensis* Takeda (MS) see *Saccella hokkaidoensis* Oyama and Mizuno, 1958**

***Nuculana (Nuculana) karihaensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 87, pl. 24, figs. 3, 4

Holotype: GS no. 72633.

Bridge leading to Takayanagi, Ishiguro-mura, Kariha-gun, Niigata Prefecture (37°11'02"N, 138°34'04"E)

Ishiguro Formation

Miocene

***Nuculana magarikawaensis* Nomura and Zinbo, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 165, pl. 22, fig. 3

Holotype: SM no. 7186, Paratype: SM no. 7186

Magarikawa, Toyoda-mura (River-side cliff along the Magari-gawa, about 250 m SW of the primary school at Magarikawa, Sakekawa-mura, Mogami-gun, Yamagata Prefecture; 38°49'07"N, 140°11'39"E)

Hanezawa Formation

Pliocene (Miocene)

(*Nuculana (Saccella) magarikawaensis* (Nomura and Zinbo) by Hatai and Nisiyama (1952))

***Nuculana (Nuculana) matsukuchiensis* Noda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Vol. 34, no. 3, p. 227, pl. 16, figs. 4a-5

Holotype: IGPS no. 79059 (fig. 5), Paratype: IGPS nos. 79058 (fig. 4a), 79063 (fig. 4b)

Loc. No. 80, Bed of the Esudo River, about 400 m N of the bridge between Mioke and Matsukuchi, Matsunoyama-machi, Higashikubiki-gun, Niigata Prefecture; Paratype. Loc. No. 661, Road side cutting at Fujikura, facing the northern slope of the hill (456 m), Fujikura, Matsunoyama-machi, Higashikubiki-gun,

Nigata Prefecture
Nitta Formation
Pliocene

***Nuculana moniwaensis* Nomura, 1940**

Sci. Rep., Tohoku Imp. Univ., 2nd ser. (Geol), vol. 21, no. 1, p. 14, pl. 1, fig. 14

Holotype: SM no. 2569.

(Small valley north of the electric power house on the left bank of the Natori-gawa), Moniwa, Oide-mura, Natori-gun (Taihaku-ku, Sendai City), Miyagi Prefecture (38°13'N, 140°47'E)

Moniwa Formation
Miocene

(*Pandora moniwaensis* (Nomura) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Nuculana nagaoui* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 65, pl. 6, figs. 9, 11, 16, 18, 21, 11

Holotype: UH no. 11160 (figs. 9, 11), Paratype: UH nos. 11161 (S2), 1162 (loc. no. S3), 11173 (loc. No. S4)

Upper course of the Uenhorokabetsu creek, middle tributary of the Yubari River (exact point unknown), Ishikari Province, Hokkaido; Paratypes, Loc. No. S2, Hobetsu well no. 2, depth 60 m, 4350 m N from the mouth of Penkeopiraruka creek, upper tributary of Hobetsu river, Iburu Province, Hokkaido; Loc. No. S3, Sosoji creek, upper tributary of the Hobetsu River (exact point unknown), Iburu Provincem Hokakido; Loc. No. S4, near S2 Poronai Formation

Oligocene (late Eocene)

(*Saccella nagaoui* (Takeda) by Masuda and Noda (1976))

***Nuculana nidatoriensis* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 608, pl. 47, fig. 11

Holotype: GT no. 1293

Nitadori (West side river cliff of the Appi-gawa, about 700 m SW of the bridge at Asaishi near Nitadori, Goheji-mura, Ninohe-gun (Ninohe City), Iwate Prefecture; 40°13'48"N, 141°35'E)

Kadonosawa Formation
Miocene

“*Nuculana omorii*” (Aoki) reported by Uozumi, 1957 (Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 593, pl. 7, fig. 11) as reproduced from S. Aoki's original figure (1954) reported from the Plio-Pleistocene Nanamura Formation, Kanagawa Prefecture

***Nuculana (Nuculana) omuensis* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 69, pl. 25a-b

Holotype: IGUT no. 10074

Loc. no. 435; road side cliff, about 500 m NW of Shikenbaru,

Tamagusuku-mura, Shimajiri-gun, Okinawa Prefecture
Shinzato Formation
Pliocene

***Nuculana onoyamai* Otuka, 1935**

Jour. Geol. Soc. Japan, vol. 42, no. 503, p. 507, text-figs. 3b-c on p. 492

Holotype and paratype: GT no. 2528

(West side of Otsubo hill and E of the river about 600 m N of Kamiyukawa and about 400 m SSW of the primary school) Sakiyama-mura (Yukawa-machi), Kashima-gun (Nanao City), Ishikawa Prefecture (37°04'16"N, 137°02'03"E)

Nozaki Formation
Pliocene

***Nuculana pennula* (Yokoyama) see *Leda pennula* Yokoyama, 1925**

Nuculana (Thestyleda) pennula (Yokoyama) reported by Itoigawa (1955; Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 22, no. 2, pl. 5, fig. 14) from the Miocene Maki Formation, Gifu Prefecture; see *Leda pennula* Yokoyama, 1925

Nuculana pennula sadoensis (Yokoyama) reported by Oyama (1951; Miner. and Geol., vol. 4, nos. 5-6, pl. 6, fig. 3) from the Pliocene Sawane Formation, Niigata Prefecture; see *Leda sadoensis* Yokoyama, 1926; see *Nuculana sadoensis* (Yokoyama) by Masuda and Noda (1976)

***Nuculana pseudoscissurata* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 67, pl. 6, figs. 19, 20

Holotype: UH no. 11154 (figs. 19, 20), Paratype: UH no. 11155 Tiputani creek, near Syoro-mura, Shranuka-gun, Kushiro Province, Hokkaido; Paratype, Hokkaido; Paratype locality unknown, however occurred localities are originally described from Loc. nos. T48, T115, T117, T141 and T293

Poronai Formation
Oligocene (late Eocene)

Nuculana (Nuculana) robai (Kuroda) see *Leda robai* Kuroda, 1929; based on this species Habe proposed new Genus *Robaia* Habe, 1958 (Pub. Seto Mar. Biol.Lab., vol. 6, no. 3, p. 248)

***Nuculana (Nuculana) sadoensis* (Yokoyama) see *Leda sadoensis* Yokoyama, 1926**

***Nuculana yamashiro* Kubota, 1951**

Miner. and Geol., vol. 4, nos. 5-6, p. 160

Ujitawara-mura (-cho), Tsuzuki-gun, Kyoto Prefecture
Ujitawara Formation

Miocene
(Invalid by Masud and Noda (1976))

***Nuculana (Thestyleda) yokoyamai* Kuroda, 1934**

Venus vol. 4, no. 4, p. 204, new name for *Leda ramsayi* Smith sensu Yokoyama (1920; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 176-177, pl. 19, figs. 3a-c)

Holotype: UT, no. ?

Koshiha Zone (Koshiha, Kanazawa-ku), Yokohama City, Kanagawa Prefecture

Upper Musashino=Pliocene (Pleistocene)

(Reported by Itoigawa (1958; Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 4, pl. 1, fig. 1) from the Pliocene Nishiyama Formation, Niigata Prefecture)

***Nuttalia uchigoensis* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 127, pl. 14, figs. 4a-b

Holotype: IGPS no. 79387

Goten, Uchigo City (Uchigo, Iwaki City), Fukushima Prefecture Asagai Formation

Oligocene

***Okinawanoarca* Noda n. gen., 1980**

Type species: *Okinawanoarca ligamentaria* Noda (1980; Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 64-75, pl. 1, figs. 13a-15b, pl. 12, figs. 6a-c) described from the Pliocene Shinzato Formation, Okinawa Prefecture

***Okinawanoarca ligamentaria* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 74, pl. 1, figs. 13a-15b, pl. 12, figs. 6a-c

Holotype: IGUT no. 10308, Paratype: IGUT nos. 10311-1, -10

Loc. no. 334: Cliff about 1 km NE of Ihara, Sashiki-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Ostrea awajiensis* Matsubara, 1998**

Holotype: MNHAH no. D1-017813 (pl. 1, figs. 1a-c), Paratype, MNHAH nos. D1-07811, D1-017812, D1-017815, -D1-017834

About 1 km northeast of Tokiwa, Hokudan-cho, Tsuna-gun, Hyogo Prefecture; 34°33'39"N, 134°58'27"E

Iwaya Formation

Eocene

***Ostrea cassis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 32, pl. 5, figs. 6, 6a-b.

Holotype: GS no. 36031, Paratype: GS no. 36031

(Near the top of the hill (92 m) about 300 m W of) Abo, Koyagi-jima, Koyagi-mura, Nishisonogi-gun, Nagasaki Prefecture (32°40'54"N, 129°48'E)

Okinoshima Formation

Upper Eocene

(*Ostrea (Pycnodonta) cassis* Nagao by Hatai and Nisiyama (1952))

***Ostrea (Ostrea) denselamellosa* Lischke 1869** reported by Noda (1971; Trans. Proc. Palaeont. Soc. Japan, N. S., no. 81, p. 40, pl. 7, figs. 10, 18) from the Pliocene (Pleistocene) Haneji Formation, Okinawa Prefecture

***Ostrea eorivularis* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 598, pl. 2, figs. 1a-3b

Holotype: GSJ no. 5001 (figs. 1a-b)

Cliff of the Shitakara River, about 200 m S to the tributary of the Shitakara River and Ponshitakara river, north of the Yubetsu coal mine, Akan-machi, Akan-gun, Hokkaido Shitakara Formation

Oligocene

(*Crassostrea* ? by Masuda and Noda (1976))

***Ostrea (Crassostrea) gigas* Thunberg, 1793**

reported by Kuroda (1931; Shinano Chubu Chisitsu-shi (Geology of central Shinano), part. 4, p. 32, pl. 1, figs. 4, 5) from the Miocene Ogawa Formation, Nagano Prefecture

***Ostrea (Crassostrea) gravitesta* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 388, pl. 45, figs. 1, 2

Holotype: GT no. ?

Kinonezaka (Cutting near Kinonezaka, Yasawagi, Ohmori-machi, Hiraga-gun, Akita Prefecture; 39°22'08"N, 140°21'08"E)

Takasegawa Green Tuff (Sugota Formation)

Miocene

***Ostrea irregularis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 68, pl. 4, figs. 7a-b

Holotype: UT no. ?

Cutting along the railway at Tabata, environs of Tokyo (Kita-ku, Tokyo Prefecture)

Tabata Bed (Tokyo Formation)

Pleistocene

(*Dendostrea paulucciae* (Crosse, 1870) by Habe, 1977)

***Ostrea itoigawai* Taguchi, 1992**

Venus, vol. 51, no. 3, p. 165, figs. 3-7

Holotype: MFM no. 20037, Paratype: MFM nos. 20038-20041

Niida, Tsuyama City, Okayama Prefecture; 35°03'05"N, 134°04'01"E

Yoshino Formation of the Katsuta Group

Middle Miocene

***Ostrea kahoensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 33, pl. 6, fig. 2

Holotype: GS no. ?

The Tadakyra Mine (about 700 m SE of the Iizuka railway station, of the Chikugo main line, and about 150 m SW of the

triangle point (60.2)) Iizuka City, Fukuoka Prefecture (33 ° 37'11"N, 130 °41'41"E)
Honso Formation
Middle Eocene

***Ostrea lunaiformis* Nagao, 1928**

Sci. Rep. Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 12, no. 1, p. 35, pl. 4, fig. 28

Holotype: GS 36039

Western sea coast (about 400 m NW of the contact point of the path and the road) at Yanagi, Taira-mura, Nishisonogi-gun, Nagasaki Prefecture (32 °59'11"N, 129 °38'34"E)

Kakinoura Formation

Oligocene

(*Ostrea* (*Crassostrea*) *lunaiformis* Nagao by Hatai and Nisiyama (1952))

***Ostrea* (*Liostrea*) *mitsuiana* Mizuno, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 4, p. 15 (239), pl. 2, figs. 1, 1a-c, 2, 2a-b

Holotype: GSJ no. 5324 (figs. 1, 1a-c)

Station L-1 (St. 63-L-1), coal-bearing facies of the Laki stage at the vicinity of the W. P. I.D. C. Degari Colliery in the Degari coal field, about 17 airmiles SE of Quetta, Pakistan (30 °05'N, 67 °13'E)

Degari coal-bearing sandstone (Gazij Shales of Laki)

Eocene

***Ostrea* (*Crassostrea*) *mundata* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 21, pl. 5, figs. 3a-b

Holotype: GT no. ?

In front of building belonging to Nakoso Coal-mining Co., Kubota (in front of dormitory of the Dai Nippon Coal-Mining Company, Dezo, Kubota-mura (Nakoso-machi), Iwaki-gun (Iwaki City), Fukushima Prefecture (36 °53'N, 140 °46'E)

Iwaki Formation

"Miocene" (Oligocene)

***Ostrea musashiana* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 163, pl. 16 figs. 1-5

Holotype: UT no. ?

Yokosuka (Yokosuka City), Kanagawa Prefecture

Upper Musashino of Shimosa=Pliocene

Pleistocene

(*Pycondonta musashiana* (Yokoyama) by Oyama (1973) and *Neopycondonta musashiana* (Yokoyama) by Habe (1977))

***Ostrea paleodenselamellosa* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 248, pl. 33, figs. 2, 3

Holotype: SM no. 2173, Paratype: GS no. 49939

Goroku cliff along the right bank of the Hirosegawa, Aoba-ku,

Sendai City, Miyagi Prefecture (38 °16'N, 140 °46'E)

Tatsunokuchi Formation

Pliocene

(Synonymous with *Monia macroschisma* (Deshayes) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Ostrea rosacea* Deshayes, 1845** reported by Nomura (1935; Saito Ho-on Kai Mus. Res. Bull., no. 6, p. 37, pl. 2, figs. 2-5b) from the Miocene Tanosawa Formation, Aomori Prefecture (*Saccostrea rosacea* (Deshayes) by Masuda and Noda (1976))

***Ostrea sakitoensis* Nagao, 1928**

Sci. Re., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 12, no. 1, p. 34, pl. 5, figs. 17, 17a

Holotype: GS no. 36053, Paratype: GS no. 36053

(A point S of the large tree on the Imoshima, a short distance S of) Kaminoura-shima, Sakito-mura, Nishisonogi-gun, Nagasaki Prefecture

Itanoura Formation

Oligocene

(*Ostrea* (*Pycnodonta*) *sakitoensis* Nomura by Hatai and Nisiyama (1952))

***Ostrea sinensis* Gmelin** reported by Nomura (1940; Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 21, no. 1, p. 22, pl. 1, figs. 1a-b) from the Miocene Moniwa Formation, Miyagi Prefecture (*Dendostrea sinensis* (Gmelin) by Hatai and Nisiyama (1952): Synonymous with *Hyotissa hyotis* (Linnaeus, 1758) by Habe (1977, p. 107))

***Ostrea takiensis* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 21, pl. 5, fig. 4a-b

Holotype: GT no. ?

The Taki coal-mine, Kadono (The Taki coal-mine about 600 m SW of Taki, Kadono-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture; 36 °59'02"N, 140 °44'05"E)

Iwaki Formation

"Miocene" (Oligocene)

(Synonymous with *Ostrea mundana* Yokoyama by Hatai and Nisiyama (1952))

***Ostrea* (*Ostrea*) *yokoyamai* Kamada, 1962**

Spec. Pap., Palaeont. Soc. Japan, N. S., no. 8, p. 68, pl. 4, figs. 1

Holotype: IGPS no. 79378

In the Yumoto-Goko, Joban Coal-mine, Yumoto-machi, Joban City (Iwaki City), Fukushima Prefecture

Iwaki Formation

Oligocene (late Eocene)

***Oxyperas bernardi* (Pilsbry, 1904)** reported by Hayasaka (1973; Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol. no. 6 (Hatai Mem. Vol.), pl. 6, fig. 9) from the Pliocene Tajima Formation, Kagoshima Prefecture

***Oxyperus elongates* Noda, 1991**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 12, p. 29, fig. 11-17a-b

Holotype: IGUT no. 11489

Loc. no. 293; small exposure at west of Kohagura, Naha City, Okinawa Prefecture

Yonabaru Formation

Pliocene

***Oxyperus okinawaensis* Masuda and Sato, 1988**

Saito Ho-on Kai Spec. Pub., no. 2 (Prof. T. Kotaka Commem. Vol.), p. 446, pl. 4, figs. 6-14

Holotype: IGPS no. 99715, Paratype: IGPS no. 99729

Sea cliff at Nishizaki, about 1 km NW of Nakano, Taketomi-cho, Iriomote-jima, Okinawa Prefecture

Iriomote Formation

Miocene (early Miocene)

***Oxyperas osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 78, pl. 3, figs. 2-5

Holotype: JC no. 1400024 (fig. 2), Paratype: JC 140025 (from Tsuzara)

Iwakishin (Loc. No. 18), Osawano-machi, Kaniniikawa-gun, Toyama Prefecture; Tsuzara, Osawano-machi, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

***Palliolum besshoensis* Kuroda** reported by Omori and Utashiro (1954; pl. 1, fig. 3 (reproduced from Kuroda's original figure, 1931)) from the Miocene Bessho Formation, Nagano Prefecture: see ***Pseudamusium (Hyalopecten?) besshoensis* Kuroda, n. sp., 1931** (Synonymous with ***Delectopecten peckhamii* (Gabb)** by Masuda and Noda (1976))

***Palliolum (Delectopecten) hokurikuense* Utashiro, 1963**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 8, p. 169, pl. 4, figs. 1, 2

Holotype: Takada Branch, Niigata Univ. no. 5904, Paratype: *ibid.* no. 5905

In the gray hard shale of the Nakayabu Formation, at Nakayabu, Himi City, Toyama Prefecture

Nakayabu Formation

Miocene

***Palliolum (Delectopecten) hokurikuense* Utashiro, 1959**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 131

Holotype: Takada Branch, Niigata Univ. no. 5904, Paratype: *ibid.* no. 5905

Nakayabu, Himi City, Toyama Prefecture

Nakayabu Formation

Miocene

(Invalid by Masuda and Noda (1976))

***Palliolum (Delectopecten) ikushyunbetsuense* Utashiro, 1963**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 8, p. 171, pl. 2, figs. 2, 3

Holotype: Takada Branch, Niigata Univ. no. 5401

In the black hard shale of the Poronai Formation, at the Ikusyunbetsu River, Sorachi District, Hokkaido

Poronai Formation

Oligocene (late Eocene)

(Invalid by Masuda and Noda (1976))

***Palliolum (Delectopecten) joetsuense* Omori and Utashiro, 1963**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 8, p. 169, pl. 8, fig. 4

Holotype: Takada Branch, Niigata Univ. no. 5837

In the black shale of the Akaya Formation, at Sarugakyo in Tone-gun, Gumma Prefecture

Akaya Formation

Miocene

(***Palliolum (Delectopecten) joetsuense* Utashiro, 1963** by Masuda and Noda (1976))

***Palliolum (Delectopecten) joetsuensis* Omori and Utashiro, 1959**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 131

Holotype: Takada Branch, Niigata Univ. no. ?

In the black shale of the Akaya Formation, at Sarugakyo in Tone-gun, Gumma Prefecture

Akaya Formation

Miocene

(Invalid by Masuda and Noda (1976))

***Palliolum (Delectopecten) katogensis* Utashiro, 1959**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 129

Holotype: Takada Branch Niigata Univ., no. 5704, Paratype: *Ibid.*, no. 5606

In the bluish gray diatomaceous mudstone of Nishiyama Formation in the neighbourhood belonging of Karoge, Minamikanbara district, Niigata Prefecture

Nishiyama Formation

Pliocene

(Invalid by Masuda and Noda (1976))

***Palliolum (Delectopecten) macrocheiricola* Habe 1951**

reported by Shuto (1960; Mem. Fac. Sci., Kyushu Univ. Ser. D, vol. 9, no. 3, p. 124, text-fig. 2) from the Pliocene Takanabe Formation, Miyazaki Prefecture

***Palliolum (Delectopecten) nambayamaensis* Utashiro, 1959**

Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 130

Holotype: Takada Branch, Niigata Univ. no. 5605, Paratype: *Ibid.* no. 5606

In the bluish gray diatomaceous mudstone of Nishiyama Formation at Takasumi, Naoetsu City, Niigata Prefecture

Nishiyama Formation
Pliocene
(Invalid by Masud and Noda (1976))

***Palliolulum (Delectopecten) noroshiensis* Utashiro, 1959**
Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 132
Holotype: Takada Branch, Niigata Univ. no. 5901
In the dark gray compact shale of Noroshi Formation, in the southern Kawaura, Tamasu (Suzu) City, Ishikawa Prefecture
Noroshi Formation
Miocene
(Invalid by Masuda and Noda (1976))

***Palliolulum peckhami* Gabb** reported by Omori and Utashiro (1954; p. 384, pl. 2, figs. 1-7, pl. 3, figs. 1, 4-6) from the Miocene Honya Formation, Fukushima Prefecture

***Palliolulum (Delectopecten) peckhami tairanum* (Yokoyama)** reported by Sugita (1962; Trans. Proc. Palaeont. Soc. Japan, N. S., no. 47, p. 287, pl. 44, figs. 7-9) from the Miocene Shimada Formation, Yamanashi Prefecture (Synonymous with ***Palliolulum (D.) peckhami* (Gabb)** by Masuda and Noda (1976))

***Palliolulum (Delectopecten) poronaiensis* Utashiro, 1959**
Mem. Fac. Educ., Takada Branch, Niigata Univ., no. 3, p. 133
Holotype: Takada Branch, Niigata Univ. no. 5402, Paratype: *Ibid.* no. 5403
In the black hard shale of Poronai Formation, in the drainage of the Pepeshiru river, near Yufutsu district, Hokkaido
Poronai Formation
Oligocene (late Eocene)
(Invalid by Masuda and Noda (1976))

***Palliolulum (Delectopecten) randdolphi* (Dall)** reported by Omori and Utashiro (1954; Cenozoic Res., no. 19, p. 386, pl. 3, fig. 4) from the Pliocene (Pleistocene) Kiwada Formation, Chiba Prefecture

***Pandora (Heteroclidus) hokusimana* Otuka, 1943**
Jour. Geol. Soc. Japan, vol. 50, no. 592, p. 224, pl. 2, fig. 8
Holotype: GT no. ?
S. 15 (Road-side cutting on Mansei highway, about 500 m SE of Futatsugoya tunnel Nakano-mura, Shinobu-gun, Fukushima Prefecture; 37°50'23"N, 140°18'12"E)
Futatsugoya Formation
Miocene

***Pandora (Pandorella) otsukai* Habe, 1952** reported by Shibata (1974) from the Miocene Yamanouchi Formation, Gifu Prefecture

Pandora (Keennerlia) pseudobilirata* Nomura and Hatai, 1940** reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture (Pandora***

***(Pandorella) pseudobilirata* Nomura and Hatai** by Masud and Noda (1976))

***Pandora pulchella* Yokoyama, 1926**
Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 387, pl. 45, fig. 4
Anden (Sea cliff near Anden, Oga City, Akita Prefecture; 39°58'05"N, 139°51'05"E)
Shibikawa Formation
Pliocene (Pleistocene)
(***Pandora (Keennerlia) pulchella* Yokoyama** by Hatai and Nisiyama (1952))

***Pandora (Keennerlia) wardiana nomurai* Otuka, 1941**
Jour. Japan. Assoc. Petrol. Tech., vol. 9, no. 2, p. 153, fig. 6 on p. 148
Holotype: GT no. ?
(Southern cliff of the Asahi-gawa, about 100 m SE of the bridge at) Ikeda, Sannai-mura, Hiraga-gun, Akita Prefecture (39°15'32"N, 140°39'17"E)
Kurosawa Formation
Miocene
(Invalid name because of no description (Hatai and Nisiyama (1952))

***Pandora (Keennerlia) wardiana nomurai* Otuka, 1943**
Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 153, fig. 6 on p. 148
Holotype: GT no. ?
(Southern cliff of the Asahi-gawa, about 100 m SE of the bridge at) Ikeda, Sannai-mura, Hiraga-gun, Akita Prefecture; 39°15'32"N, 140°39'17"E
Kurosawa Formation
Miocene

***Panomya ampla* Dall, 1898** reported by Chinzei (1959; Jour. Fac. Sci., Univ. Tokyo, Ser. 2, vol. 12, pt. 1, p. 128, pl. 11, fig. 8) from the Pliocene Kubo Formation, Iwate Prefecture

***Panomya beringiana* Dall, 1916** known as living species off Hokkaido (Habe, 1977)

***Panomya elongata* Kanno, 1958**
Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 195, pl. 4, fig. 19
Holotype: TKD no. 5581, Paratype: TKD no. 5787 (loc. No. 207)
Loc. No. 215, a road side cliff, about 600 m W of Chigaya mineral spring, Chigaya, Yoshida-machi, Chichibu-gun, Saitama Prefecture
Nenokami Formation
Oligocene (early Miocene)

***Panomya gigantea* Kanno, 1957**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 25, p. 14, pl. 2, figs. 1-2b
Holotype: TKD no. 5600 (figs. 2a-b), Paratype: TKD nos. 5601,

5602

Railway-side, about 400 m S of Komagamine Station, Shinchi-machi, Soma-gun, Fukushima Prefecture
Nakamura Formation
Pliocene

Panomya izumo Nomura and Hatai, 1939

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 6, pl. 1, figs. 2a-b
Holotype: GS no. 51884

Lake cliff (about 300 m NWW of Jyukusan), N of Fujina, Tamayu-mura (-cho), Yatsuka-gun, Sghimane Prefecture (35° 26'N, 133° 02'E)

Fujima Formation
Miocene

Panomya simotomensis Otuka, 1934

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 621, pl. 49, figs. 66a-b
Holotype: GT no. 1524.

(Road-side cutting about 550 m W of the contact point of the two roads at) Kamiyashiki, Tomai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40° 17'30"N, 141° 16'10"E)

Suenomatsuyama Formation
Lower Pliocene or Upper Miocene (Miocene)

Panope estrellana (Conrad) reported by Chinzei (1961; Jour. Fac. Sci., Tokyo Univ. Sec. 2, vol. 13, pt. 1, p. 125, pl. 3, figs. 2, 3) from the Pliocene Togawa Formation, Iwate Prefecture (***Panopea estrellana (Conrad)***)

Panope japonica (A. Adams) reported by Nomura (1938, p. 268, pl. 36, figs. 7a-b) from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture (***Panopea japonica (A. Adams)***)

Panope kanomatazawaensis Akutsu, 1964

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 288, pl. 60, figs. 3a-5

Holotype: IGPS no. 85513 (fig. 4)

A tributary of the Kanomatazawa valley; cliff of the Hoki River, opposite side of the Hokigawa Electric Power Station, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture.

Kanomatazawa Formation
Miocene (late Miocene)

(***Panopea kanomatazawaensis Akutsu***)

Panope kanomatazawaensis fudozawaensis Akutsu, 1964

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 288, pl. 60, fig. 7

Holotype: IGPS no. 85514

Fudozawa, about 2 km upstream from the entrance of the valley, Fukuwata, Shiobara-machi, Shioya-gun, Tochigi Prefecture
Kanomatazawa Formation

Miocene

(Synonymous with ***Panopea nomurae Kamada*** by Masuda and Noda (1976))

Panopea nomurae Kamada, 1962

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 135, pl. 16, figs. 9a-12

Holotype: IGPS no. 79395

Numanouchi Harbor, Toyoma-machi, Taira City (Iwaki City), Fukushima Prefecture

Numanouchi Formation

Miocene

Panope rhomboidea Hirayama, 1955

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 29, p. 108, pl. 3, figs. 12, 13

Holotype: TKD no. 10192 (fig. 12, Loc. A29), Paratype: TKD no. 10193 (fig. 13, Loc. A15)

Loc. A29, cliff along the tributary of the Kobisa-gawa, a little west of Oyamada, Hisanohama-machi, Iwaki City, Fukushima Prefecture: Loc. A15, Road-side cliff at about 1 km N of the Yotsukura Fishing Port, Yotsukura-machi, Iwaki City, Fukushima Prefecture

Asagai Formation

Oligocene

(***Panopea rhomboidea Hirayama***)

Panope tyosiensis Ozaki, 1958

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 135, pl. 11, fig. 5

Holotype: NSM no. 4411

Beach at western end of Tokawa-machi, Choshi City, Chiba Prefecture

Naarai Formation

Pliocene

(***Panopea tyosiensis Ozaki***)

Panope tyugokuensis Otuka, 1941

Japan. Jour. Geol. Geogr., vol. 18, nos. 1-2, p. 24, text-fig. 5

Holotype: UT no. 10046

(South side valley, a short distance S of the boundary between Ono and Kuzuhata, Kumatsugu-mura (Muraoka-cho), Mitaka-gun, Hyogo Prefecture) (5 km W of Sekinomiya, near the Ono pass on the San'in highway)

Ono Formation (Tazima Group; Tajima Group)

Miocene

(***Panopea tyugokuensis Otuka***)

Panopea japonica A. Adams reported by Iwasaki (1970; Jour. Fac. Sci., Univ. Tokyo, Sec. 2, vol. 17, pt. 3, p. 411, pl. 1, fig. 18) from the Miocene Kubota Formation, Fukushima Prefecture: valid name for genus *Panope* or *Panopea* (ICZN)

Paphia amabilis (Philippi) reported by Kaseno and Matsuura (1965; Sci. Rep., Kanazawa Univ., vol. 10, no. 1, pl. 15, fig. 6) from the Pleistocene Omma Formation, Ishikawa Prefecture

***Paphia (Paphia) amabilis kiiensis* Hatai and Nsiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser, Spec. Vol., no. 3, p. 138
 Type specimens: *Tapes euglyptus*, Yokoyama (1924; Japan. Jour. Geol. Geogr., vol. 2, no. 3, p. 56, pl. 6, fig. 17)
 Holotype: UT no. ?
 Takinai, around the Tanabe Bay, Wakayama Prefecture
 Atonoura Formation
 Miocene
 (Invalid and n. n. as *Paphia hataii* Masud and Noda, 1976)

Paphia euplipta (Philippi) reported by Takayasu (1961; Rep. Inst. Undergr. Resour., Akita Univ., no. 25, pl. 1, fig. 25) from the Pliocene Sasaoka Formation, Akita Prefecture (misprint; ***Paphia euglypta (Philippi, 1847)*** by Masuda and Noda (1976))

***Paphia (Paphia) euglypta ohiroi* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 326, pl. 35, figs. 22, 23
 Holotype: IGPS no, 90736 (fig. 22)
 Loc. No. 38, small exposure near the stream, about 300 m S of Sotonoyama, Suzu City, Ishikawa Prefecture; 37 °27'52"N, 137 °09'58"E
 Higashi-Innai Formation
 Miocene

***Paphia (Paphia) exilis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 140
 Holotype: GK-L no. 4001, Paratype: GK-L no. 4003 (fig. 4, same loc. as holotype), 4063 (fig. 8, Akatani-2) and 4396 Akatani-1, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture; and Akatani -2, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture
 Miyazaki Group
 (See *Paphia (Paphia) exilis exilis* Shuto, 1957)

***Paphia (Paphia) exilis abbreviata* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 146, pl. 12, figs. 12-14, 20
 Holotype: GKL no. 4071 (fig. 13), Paratype: GKL nos. 4070 (fig. 14, same loc.)
 Aakatani-2, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture
 Tano Formation
 Miocene

***Paphia (Paphia) exilis exilis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 142, pl. 12, figs. 3, 4, 8
 Holotype: GK-L no. 4001 (fig. 3), Paratype: GK-L no. 4003 (fig. 4, same loc. as holotype), 4063 (fig. 8, Akatani-2) and 4396 Akatani-1, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture; and Akatani -2, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture
 Tano and Boroishi Formations

Miocene

***Paphia (Paphia) exilis takaokaensis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 145, pl. 12, figs. 5-7, 19, 21, 22
 Holotype: GKL no. 4027 (figs. 6, 7), Paratype: GKL no. 4043 (fig. 5, loc. Hokobo), 4007 (fig. 21, loc. Waritsuke), 4353 (fig. 22, loc. Haigano)
 Kagamisu-pass, Kiyotake-machi, Miyazaki-gun, Miyazaki Prefecture: Paratype, Hokobo, Tano-machi, Miyazaki Prefecture; Waritsuke, Aya-machi, Higashimorogata-gun, Miyazaki Prefecture
 Tano and Boroishi Formations
 Miocene

***Paphia (Paphia) grata tsumaensis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 153, pl. 12, figs. 9-11
 Holotype: GKL no. 4696 (fig. 9), Paratype: GKL no. 4047 (fig. 10)
 Yamaji, Mino-mura, Koyu-gun (Saito City), Miyazaki Prefecture
 Kawabaru to Tonogori Formations
 Miocene

***Paphia haboroensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.) Spec. Vol, no. 3, p. 88;
 Type, *Meretrix (Callista) chinensis*, Yokoyama (1927; Jour. Earth Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 200, pl. 51, fig. 1)
 Holotype: UT no. ?
 A branch stream of the Haboro (Haboro-machi, Tomamae-gun, Rumoi Province), Hokkaido
 Chikubetsu Formation
 Miocene
 (*Paphia* sp. by Masuda and Noda (1976))

***Paphia hachiyai* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 55, pl. 3, figs. 5, 6
 Holotype: SM no. 5890
 Kadonosawa (a valley about 1 km W of Minami-Kanazawa, Akaishi-mura, Nishitsugaru-gun, Aomori Prefecture; 40 ° 43'03"N, 140 °10'05"E)
 Akaishi Formation (Tanosawa Formation)
 Miocene
 ("*Calyptogena*" *hachiyai* (Nomura) by Oyama (1961: Bull. Geol. Surv. Jpana, vol. 12, no. 5)

***Paphia hataii* Masuda and Noda, 1976**

Spec. Pub. Saito Ho-on Kai, no. 1, p. 11-12
 Holotype: TK no. ?
 Takinai, Shinjo-mura, Nishimuro-gun (Tanabe City), Wakayama Prefecture Atonoura Formation
 Miocene
 (New. sp. for n. n. of *Paphia amabilis kiiensis* Hatai and

Nisiyama, 1952 (invalid) as the type of *Tapes euglyptus* Philippi as described by Yokoyama, 1924)

***Paphia hirabayashii* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 1, p. 12, pl. 12, fig. 19

Holotype: GT no. 3989, Paratype: GT no. 3990

(Near the house at top of Shiroyama hill, about 450 m N of the town-office at) Kanbara, Kanbara-machi, Ihara-gun, Shizuoka Prefecture (35°07'11"N, 138°36'15"E)

Shiroyama Formation

Miocene

***Paphia (Paphia) hirabayashii koyuensis* Shuto, 1957**

Jour. Geo. Soc. Japan, vol. 63, no. 745, p. 570, text-fig. 6-3

Holotype: KU no. ?

Hisakino, Kiyotake-machi, Miyazaki-gun, Miyazaki Prefecture

Lower part of the Miyazaki Group

Miocene

(Invalid by Masuda and Noda (1976))

***Paphia (Paphia) hirabayashii tanoensis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 151, pl. 12, figs. 15-17, 23.

Holotype: GKL no. 4019 (figg. 16), Paratype: GKL no. 4018 (fig. 15, loc. Akatani-2), 4022 (fig. 16, loc. Kariyabaru)

Akatani-2, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture; Paratype, same as holotype (GKL no. 4018, fig. 15); and Kariyabaru, Tano-machi, Miyazaki-gun, Miyazaki Prefecture

Tano Formation

Miocene

***Paphia isozakiensis* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 138: Type, *Tapes variegatus*, Yokoyama (1925; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 18, pl. 3, fig. 3)

Holotype: UT no. ?

Minato, Hitachinaka-gun (Hitachinaka City), Ibaraki Prefecture

Pliocene

(Invalid and n. n. as *Tapes (Ruditapes) hataii* Masuda and Noda 1976))

***Paphia (Ruditapes) minouchiensis* Kuroda, 1931**

In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 59, pl. 7, figs. 44, 45

Holotype: GK no. ?

River cliff of the Saikawa, 500 m E of Jinda, Minochi-mura, Kamiminochi-gun, Nagano Prefecture (36°35'N, 138°03'E)

Ogawa Formation

Miocene

(*Venerupis (Amygdala) minouchiensis* (Kuroda) by Hatai and Nisiyama (1952))

***Paphia munroei* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 241, pl. 3, fig. 4

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952) as fig. 4)

In the Shimoda-zawa, a tributary of the Shisen-gawa, Numata-mura (-machi), Uryu-gun, Ishikari Province, Hokkaido (Precise locality unknown, Ebishima)

Lower Morokoshi (Morokoshi Formation)

Eocene

***Paphia munroi* Yokoyama miss spell; see *Paphia munroei* Yokoyama, 1932**

***Paphia shimotsukensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 286, pl. 59, fig. 3

Holotype: IGPS no. 85508

Cliff of the Hoki River, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatazawa Formation

Miocene

"*Paphia*" *siratoriensis* Otuka, 1934

Bull. Earthq. Res. Inst., vol. 12, pt. 3, p. 617, pl. 48, figs. 41a-b, pl. 50, fig. 98

Holotype: GT no. 1435

Southern valley of Shiratori (about 400 m SE of the temple at Shiratori), Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°14'05"N, 141°20'23"E)

Shiratori Formation

Miocene

(*Siratoria siratoriensis* (Otuka) by Hatai and Nisiyama (1952))

***Paphia (Paphia) suzuensis* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 327, pl. 35, figs. 24, 25

Holotype: IGPS no. 90086 (fig. 25)

Loc. No. 30, road side cutting near Koeiji Temple, Otani, Suzu City, Ishikawa Prefecture; 37°29'41"N, 137°10'28"E.

Higashi-Innai Formation

Miocene

***Paphia takadatensis* (Matsumoto) see *Lutralia takadatensis* Matsumoto, 1930**

***Paphia (Paphia) takanabeensis* Shuto miss spell and see *Paphia takanabensis* Shuto, 1957**

***Paphia (Paphia) takanabensis* Shuto, 1957**

Japan. Jour. Geol. Geogr., vol. 28, nos. 1-3, p. 155, pl. 12, fig. 18

Holotype: GKL no. 4100

Toriyama, Kawaminami-mura (Kawaminami-cho), Koyu-gun, Miyazaki Prefecture

Takanabe Formation
Pliocene

***Paphia (Paphia) tonohamaensis* Okumura and Takei, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 170, pl. 38, figs. 1, 2

Holotype: NT90-138 (Naruto Univ. Educ.)

Valley side and floor of the Tonohama valley, about 500 m N of Tonohama, Yasuda-cho, Aki-gun, Kochi Prefecture.

Ananai Formation

Pliocene

***Papyridea harrimani* Dall** reported by Hirayama (1955; Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C., vol. 4, no. 29, p. 100, pl. 2, fig. 24) from the Oligocene Asagai Formation, Fukushima Prefecture (Synonymous with ***Papyridea harimani nipponica* Yokoyama** by Hatai and Noda (1976))

***Papyridea kurodai* Sawada, 1962**

Mem. Muroran Inst. Tech., vol. 4, no. 1, p. 82, pl. 1, figs. 15, 16

Holotype: TK no. ?

Sawane, Sawada-machi, Sado-gun, Niigata Prefecture

Sawane Formation

Pliocene

(Valid name by Masuda and Noda (1976) as used such as ***Papyridea (Fuluvia) nipponica* Yokoyama, 1926**; ***Cardium (Papyridea) nipponicum* (Yokoyama)**, Kuroda (1931 in Homma, Geol. Central Shinano) and ***P. (Fulvia ?) kurodai* Hatai and Nisiyama n. sp., 1952**)

***Papyridea (Fulvia) nipponica* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 17, pl. 3, figs. 3, 4

Holotype: GT no. ?

(The entrance to the Tatsuta Coal-mine, Tatsuta-mura (Naraha-machi), Futaba-gun, Fukushima Prefecture; 37°17'02"N, 140°57'08"E)

Asagai Formation

Miocene (Oligocene)

(Synonymous with ***Papyridea harrimani* Dall** by Hatai and Nisiyama (1952))

***Papyridea (Fulvia ?) kurodai* Hatai and Nisiyama, 1952**

Sci. Rep. Tohoku Univ. 2nd ser. (Geol.), Spec. Vol. no. 3, p. 39:

Type, ***Cardium (Papyridea) nipponicum* Yokoyama**, Kuroda (1931; In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 54, pl. 6, fig. 35)

Holotype: UT no. ?

Precise locality unknown, Kamiminochi-gun, Nagano Prefecture Shigarami Formation

Pliocene

(Invalid and valid is ***Papyridea (Papyridea) kurodai* Sawada, 1962** by Masuda and Noda (1976))

***Paralledon obliqueatus* Yokoyama, 1920**

Jour. Coll. Sci. Imp. Univ. Tokyo, vol. 39, art. 6, p. 170-171, pl.

17, figs. 6a-b, pl. 18, figs. 9a-11c

Syntype: UT no. ?

Yokosuka (pl. 17, fig. 6), Miyata Zone (Shimo-Miyata, pl. 18, figs. 9, 10) and Okine (pl. 18, fig. 11), Miura Peninsula (Yokosuka City, Kanagawa Prefecture)

Yokosuka Zone

Pleistocene

(***Porterus dalli obliqueatus* (Yokoyama)** by Oyama (1973))

***Parapholas hiyoshiensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 273, pl. 2, figs. 15a-b

Holotype: ESN no. 20030

Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Parapholus minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 273, pl. 3, fig. 1

Holotype: ESN no. 20029

Shukubora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Parapholas satoi* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 88, pl. 6, figs. 6, 6a

Holotype: GS no. ?, Paratype: GS no. ? (p. 88, pl. 6, fig. 7)

The Meinohama quarry (immediately W of the Meinohama Mine) Meinohama-machi, Sawara-gun, Fukuoka Prefecture (33°35'05"N, 130°19'58"E)

Meinohama Formation

Oligocene

***Parvamussium (Flavamussium) idozawaensis* Omori, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 11, pl. 1, fig.

Holotype: TKD no. 5936

East road side at Idozawa, Takase-mura, Kitakanra-gun, Gunma Prefecture

Idozawa Formation

Lower Miocene

(***Flavamussium idozawaensis* (Omori)** by Masuda and Noda (1976))

***Parvamussium (Parvamussium) kyushuense* Shuto, 1960**

Mem. Coll. Sci., Kyushu Univ., Ser. D, vol. 9, no. 3, p. 127, pl. 12, figs. 4, 7, text-figs. 7, 14

Holotype: GKL no. 4863 (pl. 12, fig. 7), Paratype: GKL no. 4708, 4864, 4865, 4866, 4867, 4868, 4869, 4870 and 4871 (same locality).

Nagano (MI-5109), Mino-mura, Koyu-gun (Saito City), Miyazaki Prefecture
Tsuma Member (lower part) of the Koyu Formation
Miocene

***Parvamusium masudai* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 80, pl. 2, figs. 9a-11b, 13a-b
Holotype: IGUT no. 10353, Paratype: IGUT nos. 10449-3, -2
Loc. no. 15U: Cliff about 500 m SE of Shinzato, Sashiki-mura, Shimajiri-gun, Okinawa Prefecture
Shinzato Formation
Pliocene

***Parvamusium (Parvamusium) takasensis* Omori, 1955**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 12, pl. 2, fig. 1
Holotype: TKD no. 5938
River side of the Takase-gawa, Takase-mura, Higashimurayama-gun, Yamagata Prefecture
Takase Siltstone of the Yamadera Formation
Miocene
(Synonymous with *Propeamusium tateiwai* Kanehara by Masuda and Noda (1976))

***Patinopecten chichibuensis* Kanno, 1957**

Chichibu Nat. Sc. Mus., Res. Bull. No. 7, p. 102, pl. 1, figs. 1a-5, pl. 2, fig. 5, pl. 3, fig. 4
Holotype: TKD no. 5554 (pl. 1, figs. 1a-b), Paratype: TKD no. 5555 (fig. 2a-5)
River side near the fall of Nenokami, Yoshida-machi, Chichibu-gun, Saitama Prefecture; Paratype: a small cliff, about 300 m E of the fall, just cited above; and about 70 m in the lower stratum of Gohei-bashi, Obashira, Ota-mura, Chichibu-gun, Saitama Prefecture
Iwadonozawa Formation
Oligocene (early Miocene)
(*Mizuhopecten chichibuensis* (Kanno) by Masuda and Noda (1976))

***Patinopecten (Mizuhopecten) chichibuensis mitsuganoensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 63, pl. 1, figs. 14a-b, pl. 2, figs. 1a-b
Holotype: ESN no. 30006 (pl. 1, figs. 14a-b)
Loc. No. K14, Ago, Hisai-cho, Ichishi-gun (Hisai City), Mie Prefecture
Oi Formation
Miocene
(*Mizuhopecten chichibuensis mitsuganoensis* (Shibata) by Masuda and Noda (1976))

***Patinopecten (Kotorapecten) egregius* (Itoigawa) see *Chlamys egregius* Itoigawa, 1955**

***Patinopecten (Patinopecten) hashimotoi* Akiyama, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 94-95, pl. 2, figs. 1, 5
Holotype: TKD, no. 17015 (fig. 5), Paratype: TKD, no. 17016 (fig. 1, same loc.)
Nakatombetsu-machi, Esashi-gun, Hokkaido
Nakatombetsu Formation
Pliocene
(*Mizuhopecten hashimotoi* (Akiyama) by Masuda and Noda (1976))

***Patinopecten hayashii* Kanno, 1957**

Chichibu Nat. Sci. Mus., Res. Bull., no. 7, p. 105, pl. 3, figs. 1-3
Holotype: TKD no. 5559 (fig. 1), Paratype: TKD nos. 5560, 5561
A small river-side cliff, about 300 m E of Tenno, Nagawaka-mura, Chichibu-gun, Saitama Prefecture; Paratype, Kamonosawa, Nagawaka-mura, Chichibu-gun, Saitama Prefecture (TKD, no. 5560) and a small valley cliff, about 400 m NW of Kamihara, Nagawaka-mura, Chichibu-gun, Saitama Prefecture (TKD, no. 5561)
Matsuda Formation
Miocene
(*Mizuhopecten hayashii* (Kanno) by Masuda and Noda (1976))

***Patinopecten ibaragiensis* Masuda, 1953**

Short Pap. IGPS (Inst. Geol. Paleont. Tohoku Univ.), no. 5, p. 44, pl. 5, figs. 1-5, pl. 6, figs. 1-5
Holotype: DGCE no. 1031, shifted into IGPS no. 90698 (pl. 5, figs. 1, 2), Paratype: IGPS nos. 74616 (same loc.), 17269
Cliff below the Sukegawa Gas Company, Hitachi City, Ibaraki Prefecture (36°35'N, 140°40'E)
Hitachi Formation
Upper Miocene
(*Mizuhopecten ibaragiensis* (Masuda) by Masuda and Noda (1976); conspecific with *Mizuhopecten planicostulatus* (Nomura and Niino, 1932) including *Mizuhopecten pseudoyessoensis* (Akiyama and Miyajima, 1960) by Amano (1997: Bull. Nat. Sci. Mus., Tokyo, Ser. C, vol. 23 nos. 3, 4, p. 102))

***Patinopecten imanurai* Masuda, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 33, p. 7, pl. 1, figs. 7-10
Holotype: TNM no. N1 (Geol. Miner. Inst., Hiroshima Univ.)
Railroad cutting of the San-in Line at Akazaki, Nima-machi, Nima-gun, Shimane Prefecture (35°00'43"N, 132°24'04"E)
Kawai Formation
Miocene
(*Mizuhopecten imanurai* (Masuda) by Masuda and Noda (1976))

***Patinopecten (Masudapecten) iwasakiensis* (Nomura); see *Pecten iwasakiensis* Nomura, 1935 (*Masudapecten iwasakiensis* (Nomura) by Masuda and Noda (1976))**

Patinopecten kagamianus (Yokoyama) see *Pecten kagamianus* Yokoyama, 1923 (*Kotorapecten kagamianus* (Yokoyama) by Masuda and Noda (1976))

***Patinopecten kagamianus hokkaidoensis* Kanno, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 73, p. 57, pl. 1, figs. 1-6, pl. 2, figs. 1-6

Holotype: TKD no. 6122 (fig. 1), Paratype: TKD no. 6123 (figs. 2-6)
Cliffs of Meppu-River and Hidarimata-River near the Kaigara Bridge, Meppu, Imagane-machi, Setana-gun, Hiyaama Province, Hokkaido

Yakumo Formation

Miocene

(Synonymous with *Kotorapecten kagamianus kagamanus* (Yokoyama) by Masuda and Noda (1976))

***Patinopecten kagamianus moniwaensis* Masuda, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 32, p. 276, pl. 41, figs. 3-6b

Holotype: DGS no. 3506 shift to IGPS no. 90700 (fig. 3), Paratype: IGPS no. ?

Moniwa, Sendai City, Miyagi Prefecture (38°13'N, 140°47'E)

Moniwa Formation

(*Kotorapecten kagamianus moniwaensis* (Masuda) by Masuda and Noda (1976))

***Patinopecten kagamianus nimaensis* Masuda, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 32, p. 277, pl. 41, figs. 1, 2

Holotype: TNM no. 26 (fig. 1), Paratype: DGS no. 3580 shift to IGPS no. ?

Railroad cutting on the San-in Line at Akazaki, Nima-machi, Nima-gun, Shimane Prefecture (35°00'43"N, 132°24'40"E)

Kawai Formation

Miocene

(*Kotorapecten kagamianus nimaensis* (Masuda) by Masuda and Noda (1976))

Patinopecten kagamianus permirus (Yokoyama) see *Pecten permirus* Yokoyama, 1926

***Patinopecten kanbaraensis* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 1, p. 8, pl. 1, fig. 3

Holotype: GT no. 3987

(Near the house at the top of Shiroyama hill about 450 m N of the town-office at) Kanbara-machi, Ihara-gun, Shizuoka Prefecture; 35°07'11"N, 138°36'15"E)

Shiroyama Formation

Miocene

(*Mizuhopecten kanbaraensis* (Otuka))

Patinopecten kimurai (Yokoyama) see *Pecten kimurai* Yokoyama, 1925

Patinopecten kimurai murayamai (Yokoyama) see *Pecten murayamai* Yokoyama, 1926: see *Mizuhopecten kimurai murayamai* (Yokoyama)

***Patinopecten kimurai nakosoensis* Masuda, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 38, p. 256, pl. 29, figs. 2, 3

Holotype: DGS no. 1940 shift to IGPS no. 90581 (fig. 3), Paratype: IGPS no. ? (fig. 2)

Road-side cliff at Kokozuram, Nakoso City (Iwaki City), Fukushima Prefecture (36°51'18"N, 140°47'39"E)

Kokozura Formation

Miocene

(*Mizuhopecten kimurai nakosoensis* (Masuda) by Masuda and Noda (1976))

Patinopecten kimurai tiganouraensis (Nakamura) see *Pecten (Patinopecten) kimurai tiganouraensis* Nakamura, 1940 (*Mizuhopecten kimurai tiganouraensis* (Nakamura) by Masuda and Noda (1976))

Patinopecten kimurai ugoensis (Hatai and Nisiyama) see *Pecten kimurai ugoensis* Hatai and Nisiyama, 1939 (*Mizuhopecten kimurai ugoensis* (Hatai and Nisiyama) by Masuda and Noda (1976))

***Patinopecten kimurai yudaensis* Masuda, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 38, p. 256, pl. 30, figs. 1, 2

Holotype: DGS no. 1936 shift to IGPS no. 90661 (fig. 1), Paratype: DGS nos. 1935 (fig. 2), 2439 and IGPS no. 17621

Right river side of Mabechi-gawa at Yuda, Kintaichi-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°19'N, 141°19'10"E)

Shiratori Formation

Miocene

(*Mizuhopecten kimurai yudaensis* (Masuda) by Masuda and Noda (1976))

***Patinopecten kobyamamai* Kamada, 1954**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 15, p. 174, pl. 23, figs. 1a-3b

Holotype: IGPS no. 72963

Small cliff in the valley about 500 m E of Nakayama, Ono-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture (37°06'16"N, 140°54'51"E)

Kabeya Formation (=Honya Formation)

Miocene

(*Mizuhopecten kobyamamai* (Kamada) by Masuda and Noda (1976))

Patinopecten (Patinopecten) kurosawaensis (Yokoyama) see *Pecten kurosawaensis* Yokoyama, 1926 (Synonymous with *Mizuhopecten yessoensis yokoyamae* (Masuda) by Masuda and

Noda (1976))

***Patinopecten (Masudapecten) masudai* Akiyama, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 107, pl. 1, fig. 2, pl. 3, fig. 1

Holotype: TKD no. 17031 (pl. 3, fig. 1), Paratype: TKD no. 17032 (pl. 1, fig. 2)

Ukibuta, Higashiyuri-mura (-machi), Yuri-gun, Akita Prefecture Sugota Formation

Miocene

(*Masudapecten masudai* (Akiyama) by Masuda and Noda (1976))

***Patinopecten matumoriensis* (Nakamura) see *Pecten (Patinopecten) kimurai matumoriensis* Nakamura, 1940 (*Mizuhopecten matumoriensis* (Nakamura) by Masuda and Noda (1976))**

***Patinopecten (Patinopecten) murayamai bisecta* Akiyama, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 87, pl. 1, figs. 1, 3

Holotype: TKD no. 17003 (fig. 1), Paratype: TKD no. 17006 (fig. 3)

Ogura, Higashiyuri-mura (-machi), Yuri-gun, Akita Prefecture Sugota Formation

Miocene

(Synonymous with *Mizuhopecten kimurai murayamai* (Yokoyama) by Masuda and Noda (1976))

***Patinopecten (Kotorapecten) naganoensis* Masuda, 1962**

Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.), vol. 33, no. 2, p. 219, pl. 25, figs. 1a-b

Holotype: DGS no. 3888 shift to IGPS no. 90547

Floor of a small tributary of the Dojiri River, Shiroshita, Nakajo-mura, Kamiminochi-gun, Nagano Prefecture (36°37'N, 138°02'58"E)

Shigarami Formation

Miocene

(*Mizuhopecten naganoensis* (Masuda) by Masuda and Noda (1976))

***Patinopecten nakajimai* Masuda, 1954**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 15, p. 159, pl. 21, figs. 1a-5

Holotype: IGPS no. 95080 (original DGS no. 1063), Paratype: IGPS nos. ? (fig. 3)

River cliff of Natori-gawa near the Akiu Car-line Station at Kita-Akaishi, Oide-mura, Natori-gun, Miyagi Prefecture; Paratype, Ainosawa, a small valley extending northwards about 500 m northeast of Kita-Akaishi Car-line Station, Oide-mura, Natori-gun, Miyagi Prefecture (both Taihaku-ku, Sendai City)

Moniwa Formation

Miocene

(*Kotorapecten nakajimai* (Masuda) by Masuda and Noda (1976))

***Patinopecten (Patinopecten) nakatombetsuensis* Akiyama, 1962**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 100, pl. 4, figs. 2, 5

Holotype: DGS no. 3899 (shift to IGPS no. ?), Topotype: TKD no. 17024 (figs. 2, 5)

Asahidai, Nakatombetsu-machi, Esashi-gun, Kitami Province, Hokkaido (45°N, 142°18'E)

Nakatombetsu Formation

Pliocene

(*Mizuhopecten yessoensis nakatombetsuensis* (Akiyama); Lectotype by Masuda and Noda (1976))

***Patinopecten parablebejus* Nomura and Hatai (*Mizuhopecten parablebejus* (Nomura and Hatai) by Masuda and Noda (1976))**

***Patinopecten (Patinopecten) planicostulatus* (Nomura and Niino) see *Pecten planicostulatus* Nomura and Nino, 1932**

***Patinopecten (Masudapecten) plebejus* (Yokoyama) (Synonyms with *Yabepecten tokunagai* (Yokoyama) by Masuda and Noda (1976))**

***Patinopecten (Patinopecten) poculum* (Yokoyama) reported by Masuda (1962) from the Pliocene Sasaoka Formation, Akita Prefecture: see *Pecten poculum* Yokoyama, 1926**

***Patinopecten (Patinopecten) poculum kurosawaensis* (Yokoyama) (*Mizuhopecten poculum* (Yokoyama) by Masuda and Noda (1976))**

***Patinopecten poculum tsudae* Noda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Vol. 34, no. 3, p. 228, pl. 16, figs. 1-3

Holotype: IGPS no. 79062 (figs. 1, 2), Paratype: IGPS no. 78743 (fig. 3; same locality)

Loc. No. 1061-c, cliff of the Higashi River, about 250 m S of a junction with Etsudo and Higashi Rivers, Matsunoyama-machi, Higashikubiki-gun, Niigata Prefecture

Higashigawa Formation

Pliocene

(*Mizuhopecten poculum tsudae* (Noda) by Masuda and Noda (1976))

***Patinopecten pseudoyessoensis* Akiyama and Miyajima, 1960**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 7, no. 61, p. 99, pl. 5, figs. 1a-5

Holotype: TKD no. 5371 (figs. 2a-b), Paratype: TKD nos. 5372-5378

The cliff near Oyato, Totsuka-ku, Yokohama City, Kanagawa

Prefecture; 35°20'24"N, 139°33'40"E

Nojima Formation

Pliocene

(Mizuhopecten yessoensis pseudoyessoensis (Akiyama and Miyajima)) by Masuda and Noda (1976): synonymous with *Mizuhopecten planicostulatus (Nomura and Niino, 1932)* including *Mizuhopecten ibaragiensis (Masuda, 1953)* by Amano (Bull. Nat. Sci. Mus., Tokyo, Ser. C, vol. 23, nos. 3, 4, p. 102)

Patinopecten (Kotorapecten) sannohensis (Chinzei) (Mizuhopecten sannohensis (Chinzei)) by Masuda and Noda (1976))

Patinopecten shibaharensis Kanno, 1957

Chichibu Nat. Sci. Mus., Res. Boll., no. 7, p. 104, pl. 2, figs. 1a-4

Holotype: TKD no. 5556 (figs. 1a-b), Paratype: TKD no. 5557 (same loc.)

A small valley, about 700 m N of Shibahara mineral spring, Shibahara, Arakawa-mura, Chichibu-gun, Saitama Prefecture

Matsuida Formation

Miocene

(Mizuhopecten shibaharensis (Kanno)) by Masuda and Noda (1976))

Patinopecten taiwanus Nomura (in parts; synonymous with *Mizuhopecten tokyoensis hokurikuensis (Akiyama)* by Masuda and Noda (1976))

Patinopecten (Patinopecten) togeshitensis Akiyama, 1962

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 103, pl. 3, figs. 2, 5

Holotype: TKD no. 17027 (figs. 2, 5), Paratype: TKD no. 17028 Owada, Rumoi City, Hokkaido

Togeshita Formation

Pliocene (Miocene)

(Mizuhopecten togeshitensis (Akiyama)) by Masuda and Noda (1976))

Patinopecten tokunagai (Yokoyama) see *Pecten tokunagai Yokoyama, 1911*; see *Yabepecten tokunagai (Yokoyama)*

Patinopecten tokyoensis (Tokunaga) see *Pecten tokyoensis Tokunaga, 1906*; see *Mizuhopecten tokyoensis (Tokunaga)*

Patinopecten (Patinopecten) tokyoensis hokurikuensis Akiyama, 1962

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 94, pl. 7, figs. 1-3, 5

Holotype: UT no. ? (figs. 1, 3, 5)

Omma, Sakiura-mura, Ishikawa-gun (Kanazawa City), Ishikawa Prefecture

Himi Group (Omma Formation)

Pliocene (early Pleistocene)

(Mizuhopecten tokyoensis hokurikuensis (Akiyama)) by Masuda and Noda (1976))

Patinopecten (Patinopecten) tokyoensis hokurikuensis Masuda, 1962

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 33, no. 2, p. 211, pl. 25, fig. 6, pl. 27, figs. 6, 7

Holotype: IGPS no. 13430 (pl. 25, fig. 6)

Road-side cliff near the Sai River, about 400 m SE of the contact point of the two roads at Onma-machi, Kanazawa City, Ishikawa Prefecture (36°31'24"N, 136°41'10"E)

Omma Formation

Pliocene (early Pleistocene)

(Mizuhopecten tokyoensis hokurikuensis (Akiyama)) by Masuda and Noda (1976))

Patinopecten triblium (Yokoyama) miss spell and see *Pecten tryblium Yokoyama, 1925*; see *Mizuhopecten tryblium (Yokoyama)*

Patinopecten (Patinopecten) tryblium tryblium (Yokoyama); see *Pecten tryblium Yokoyama, 1925 (Mizuhopecten tryblium (Yokoyama))* by Masuda and Noda (1987))

Patinopecten tryblium shinshuensis Akiyama, 1962

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 8, no. 74, p. 98, pl. 5, figs. 1, 4

Holotype: TKD no. 17021 (fig. 1)

Cliff at the west of Kawashita, Togakushi-mura, Kamiminouchi-gun, Nagano Prefecture

Ogikubo Formation

Pliocene

(Synonymous with *Mizuhopecten tryblium (Yokoyama)* by Masuda and Noda (1976))

Patinopecten yamasakii (Yokoyama) see *Pecten yamasakii Yokoyama, 1925*; *(Mizuhopecten yamasakii (Yokoyama))* by Masuda and Noda (1986))

Patinopecten yamasakii iwasakiensis (Nomura) see *Pecten (Pecten) iwasakiensis Nomura, 1935*

Patinopecten yamasakii kintaichiensis Masuda, 1958

Saito Ho-on Kai Mus., Res. Bull., no. 27, p. 47, pl. 4, figs. 3a-4

Holotype: DGS no. 3609 shifted to IGPS no. 90715 (figs. 3a-b),

Paratype: DGS no. 3610 shifted to IGPS no. ?

Entrance to the eastern valley running parallel with the Kamiyama-zawa, Kintaichi-mura, Ninoge-gun (Ninohe City), Iwate Prefecture (40°17'45"N, 141°17'23"E)

Suenomatsuyama Formation

Miocene

(Masudapecten kintaichiensis (Masuda)) by Masuda and Noda (1976))

***Patinopecten yamasakii nihonensis* Masuda, 1954**

Saito Ho-on Kai Mus., Res. Bull., no. 23, p. 13, figs. 1a-3

Holotype: IGPS no. 90683 (figs. 1a-b)

Shiratorizawa in Fukuoka-machi, Ninohe-gun (Ninohe City),

Iwate Prefecture

Suenomatsuyama Formation

Miocene

(*Mizuhopecten ninohensis* (Masuda) by Masuda and Noda (1987))***Patinopecten* (*Patinopecten*) *yamasakii yamasakii* (Yokoyama) see *Pecten yamasakii* Yokoyama, 1925*****Patinopecten yessoensis* (Jay) see *Pecten yessoensis* Jay, 1857 (*Mizuhopecten yessoensis* (Jay) by Masuda and Noda (1976))*****Patinopecten* (*Patinopecten*) *yessoensis naktonbetsuensis* Masuda, 1962**Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.), vol. 33, no. 2, p. 214, pl. 24, fig. 4

Holotype: DGS no. 3899 shifted to IGPS no. 90662

Asahidai, Nakatonbetsu-machi, Esashi-gun, Kitami Province, Hokkaido (45°N, 142°18'E)

Nakatonbetsu Formation

Late Miocene

(*Mizuhopecten nakatonbetsuensis* (Akiyama) by Masuda and Noda (1976))***Patinopecten yessoensis yokoyamae* Masuda, 1962**Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.), vol. 33, no. 2, p. 215, pl. 25, figs. 2, 3, pl. 26, fig. 7, pl. 27, fig. 12

Holotype: DGS no. 3836 shifted to IGPS no. 90543 (pl. 25, fig. 2)

Left cliff of the Chikagawa River, about 200 m from the sea shore at Chikagawa, Mutsu City, Aomori Prefecture (41°11'01"N, 141°16'36"E)

Hamada Formation

Pliocene (early Pleistocene)

(*Mizuhopecten yessoensis yokoyamae* (Masuda) by Masuda and Noda (1976))***Pecten agnatus* Yokoyama, 1930**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. II, vol. 2, part 10, p. 417, pl. 80, figs. 1

Holotype: UT no. ?

Isos, Higashi-Sakutan, Motodomari-gun, Sakhalin, Russia

Maruyama Formation

Pliocene

(Synonymous with *Fortipecten takahashii* (Yokoyama) by Masuda (1962))***Pecten (Pseudamusium) akihoensis* Saga (MS) in Matsumoto, 1930**Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 106, pl.

40, figs. 7, 7a

Syntype: unknown

Northern foot of the Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38°12'N, 140°51'E)

Moriwa Formation

Miocene

***Pecten akitanus* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 388, pl. 44, figs. 15-17

Holotype: GT no. ?

Kurosawa (Road cliff near Kurosawa, Taihei-mura, Minamiakita-gun (Akita City), Akita Prefecture (39°44'03"N, 140°13'07"E)

Wakimoto Formation (Sugota Formation)

Pliocene (Miocene)

(*Chlamys akitana* (Yokoyama) and miss description of type locality and formation; Sugota Formation by Masuda (1962))***Pecten (Notovola) albicans* (Schroter) reported by Omori and Utashiro (1953; Seibutsu Kagaku (Biol. Sci.), Spec. Vol., "Evolution", pl. figs. 8, 9) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture*****Pecten (Pecten) arakawai* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 40, pl. 4, figs. 1, 2

Holotype: SM no. 2484

In the railway tunnel of Tanosawa, Odose-mura (Fukaura-machi), Nishitsugaru-gun, Aomori Prefecture (40°45'07"N, 140°02'03"E)

Tanosawa Formation

Miocene

(*Chlamys arakawai* (Nomura) by Hatai and Nisiyama (1952))***Pecten (Chlamys) ashियाensis* Nagao, 1928**Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 39, pl. 9, figs. 2, 2a

Holotype: GS no. 36448, Paratype: GS nos. 36448, 36450 (other loc., 36440, 36449)

(Sea cliff facing the mouth of Onga-gawa, about 400 m NE of Yamaga, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33°53'56"N, 130°39'54"E)

Yamaga Formation

Oligocene

(*Chlamys ashियाensis* (Nagao) by Hatai and Nisiyama (1952))***Pecten (Chlamys) ashियाensis* var. *denselineatus* Nagao, 1928**Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 40, pl. 8, fig. 9

Holotype: GS no. 36437.

The third Mine (about 200 m SE of the post-office) at Fukuura, Kaminoura-shima, Sakito-mura, Nishisonogi-gun, Nagasaki Prefecture (33°01'N, 129°34'37"E)

Itanoura Formation
Oligocene

***Pecten bifrons* Hachiya, 1904** (miss print in author; not of Lamarck)

***Pecten (Vola) byoritsuensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 16, no. 1, p. 57, pl. 1, figs. 4a-5b

Holotype: IGPS no. 45001, Paratype: IGPS no. 45001

The upper course of Sairyokyo, Sanchin-sho, Tainan-shu, Taiwan

Bryoritsu Formation

Pliocene

(*Pecten (Pecten) byoritsuensis* Nomura reported from the Pliocene Omma Formation, Ishikawa Prefecture by Amano and Ohno (1988: Venus, vol. 47, no. 1, p. 37-49))

***Pecten clancularius* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 358, pl. 41, figs. 7-11

Holotype: GT no. ?

Tombe (Precise locality doubtful, Tonbe, Hirayama-mura, Ogasa-gun (Kakegawa City), Shizuoka Prefecture; 34 °46'07"N, 137 °58'02"E)

Hijitaka Formation

Pliocene

(*Propeamusium clancularius* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten cosibensis* Yokoyama, 1911**

Jour. Geol. Soc. Tokyo, vol. 18, no. 208, p. 4, pl. 1, figs. 3, 4

Holotype: GT no. ?

Koshiha (Sea cliff of Shiba, Kanazawa-machi, Kanazawa-ku, Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 °38'06"E)

Koshiha Formation

Neogene (early Pleistocene)

(*Chlamys cosibensis* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten crassicostatus* Hachiya, 1904** (not Sowerby: Rep. Imp. Earthq. Invest. Comm., no. 48) reported from the Miocene Tanosawa Formation, Aomori Prefecture (Synonymous with *Patinopecten kudoii* Nomura by Hatai and Nisiyama (1952))

***Pecten (Chlamys) crassivenius* Yokoyama, 1929**

Imp. Geol. Surv. Japan, Rep., no. 104, p. 6, pl. 6, fig. 1

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Near Nanao, Noto (Cliff at Iwaya, about 500 m SW of JR Nanao Station, Nanao City, Ishikawa Prefecture; 37 °01'03"N, 136 °57'04"E)

Nanao Formation

Pliocene (Miocene)

(*Gloripallium crassivenium* (Yokoyama) by Masuda (1962))

***Pecten foedus* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 305, pl. 37, fig. 1

Holotype: GT no. ?

(Valley cliff, a short distance N of the path and about 150 m SW of the temple at N of Tanaka, Sawane-machi, Sado-gun, Niigata Prefecture; 38 °01'N, 138 °16'53"E)

Sawane Formation

Pliocene

(*Chlamys foeda* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten (Aequipecten) gabusogaensis* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 236 (8), pl. 11 (1), figs. 3a-4b

Holotype: IGPS no. 51321 (figs. 3a-b), Paratype (figs. 4a-b)

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

***Pecten (Chlamys) hastatus* Sowerby var. *ingeniosa* Yokoyama, 1929**

Imp. Geol. Surv. Japan, Rep., no. 104, p. 5, pl. 6, fig. 2

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Near Nanao, Noto (Cliff at Iwaya, about 500 m SW of JR Nanao Station, Nanao City, Ishikawa Prefecture; 37 °01'03"N, 136 °57'04"E)

Nanao Formation

Pliocene (Miocene)

(*Chlamys ingeniosa* (Yokoyama) by Masuda (1962))

***Pecten (Patinopecten) healeyi yamasakii* Yokoyama** reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture: see *Mizuhopecten yamasakii* (Yokoyama)

***Pecten halimensis* Makiyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 2, p. 23-24, pl. 4, fig. 1

Holotype: GK no. ?

Beneth of the Maiko Hotel, Maiko, near Kobe (Kobe City), Hyogo Prefecture (34 °37'06"N, 135 °20'E)

Pliocene (Pleistocene)

(*Chlamys halimensis* (Makiyama) by Masuda (1962, p. 165))

***Pecten heteroglyptus* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 304, pl. 1, fig. 1

Holotype: GT no. ? (designated fig. 1 by Hatai and Nisiyama (1952))

Sawane (Valley cliff a short distance N of the path and about

150 m SW of the temple at N of Tanaka, Sawane-machi, Sado-gun, Niigata Prefecture; 38 °01'N, 138 °15'53"E)
Sawane Formation
Pliocene

(*Chlamys heteroglyptus* (Yokoyama) and synonymys with *Chlamys cosibensis* (Yokoyama) by Masuda (1962))

***Pecten itomiensis* Otuka, 1934**

Jour. Geol. Soc. Tokyo, vol. 41, no. 492, p. 566, text-fig. 1 on right

Holotype: GT no. 1879, Paratype: GT no. 1880 (text-fig. 1 of left valve, designated by Hatai and Nisiyama (1952))

West of Iitomi, Minamikoma, Yamanashi (River-side exposure immediately W of Hayakawa suspension bridge, Minobu-cho, Minamikoma-gun, Yamanashi Prefecture; 35 °26'01"N, 138 °25'24"E)

Shizukawa Formation

Miocene

(*Amusiopecten itomiensis* (Otuka) by Masuda (1962))

***Pecten insolitus* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 18, pl. 5, figs. 3a-b

Holotype: GT no. ?

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture (36 °40'N, 138 °04'E)

Shigarami Formation

Pliocene

(*Chlamys insolitus* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten intuscostatus* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 156, pl. 13, figs. 9, 10

Holotype: GT no. ?

Kamimiyata, Miura City, Kanagawa Prefecture (35 °11'10"N, 139 °39'34"E)

Miyata Formation

Pleistocene

(*Polynemamussium intuscostatum* (Yokoyama) by Masuda (1962))

***Pecten (Pseudamussium) intuscostatus* Yokoyama** reported by Nomura and Hatai (1935) from the Pliocene (early Pleistocene) Daishaka Formation, Aomori Prefecture (*Polynemamussium intuscostatum* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten islandicus* Müller** reported by Matsumoto (1930) from the Miocene Moniwa Formation, Miyagi Prefecture (*Chlamys ingeniosa* (Yokoyama) by Hatai and Nisiyama (1952)): see *Chlamys islandica* Müller

***Pecten iwakianus* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 19, pl. 3, fig.

13

Holotype: GT no. ?

Between Tateishi and Shiogu (Road cutting bewenn Tateishi and Shiogu, Naraha-machi, Futaba-gun, Fukushima Prefecture; 37 °17'03"N, 140 °58'E)

Shirado (Kokozura) Formation

Pliocene (Miocene)

(*Chlamys iwakianus* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten (Pecten) iwasakiensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 38, pl. 3, figs. 1-4

Holotype: SM no. 6026

Hotatezawa (about 3 km NE off Shinyu hotspring, a tributary of the Sasanai-gawa) Iwasaki-mura, Nishitsugaru-gun, Aomori Prefecture (40 °35'N, 140 °01'E)

Tanosawa Formation

Miocene

(*Masudapecten iwasakiensis* (Nomura) by Masuda (1962))

***Pecten izuensis* Nomura and Niino, 1932**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol), vol. 15, no. 3, p. 179, pl. 11, figs. 9-13

Syntype: GS no. 44583

(Road-side rocks at) Nagata (about 200 m NE of the village office Shirahama-mura, Kamo-gun) (Shimoda City), Shizuoka Prefecture (34 °42'N, 138 °58.5'E)

Shirahama Formation

Miocene

(*Decatopecten izuensis* (Nomura and Niino) by Hatai and Nisiyama (1952))

***Pecten kagamianus* Yokoyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 1, p. 8, pl. 1, figs. 1a-b

Holotype: GT no. ?

(Lake coast about 200 m W of the contact point of the two roads at N of) Kagami, Shinji-cho, Yatsuka-gun, Shimane Prefecture (35 °25'N, 132 °58'E)

Fujina Formation

Pliocene (Miocene)

(*Kotorapecten kagamianus* (Yokoyama) by Masuda (1962))

***Pecten kagamianus miyagiensis* Nakamura, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 1-2, p. 10, pl. 2, fig. 4

Holotype: GS no. ?

South cliff of lake at Otsutsumi, Miyatoko-mura (Tomiya-machi), Kurokawa-gun, Miyagi Prefecture (38 °22'05"N, 140 °46'E)

Otsutsumi Formation

Miocene

(Synonymous with *Nanaochlamys notoensis otutumiensis* (Nomura and Hatai) by Masuda (1962))

***Pecten kakisakiensis* Nomura and Niino, 1932**

Sci. Rep. Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 15, no. 3, p. 177, pl. 12, figs. 3, 4

Syntype: GS no. 44582

(Beach rocks at Kakizakinohama, about 400 m NW of the village-office at Kakizaki, Shimoda City, Shizuoka Prefecture (34°40'N, 138°58'E)

Shirahama Formation

Miocene

(*Chlamys (Mimachlamys) kakisakiensis* (Nomura and Niino) by Hatai and Nisiyama (1952))

***Pecten kaneharai* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 4, p. 135, pl. 19, fig. 1

Holotype: GT no. ? , Paratype: GT no. (p. 135, pl. 18, fig. 1, pl. 19, figs. 2, 5-7; designated by Hatai and Nisiyama, 1952)

Zone III (Northern slope of the Masugata-yama, near the head of the valley (a branch of the Fudosawa) about 900 m N of the summit and about 1.4 km SE of the Shionoyu hot spring, Shiobara-machi, Shioya-gun, Tochigi Prefecture

(Kanomatanzawa Formation)

Pliocene (Miocene)

(*Chlamys kaneharai* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten (Fortipecten) kenyoshiensis* Chinzei, 1960**

Japan Jour. Geol. Geogr., vol. 31, no. 1, p. 64, pl. 7, figs. 1-7, text-figs. 1, 2

Holotype: CM no. 8594 (figs. 1-3), Paratype: CM nos. 8595, 8596 (fig. 5), 8602 (figs. 6, 7), 8614, 8604 (fig. 4), 8608 (text-fig. 1), 8603 (text-fig. 2)

Road-side cutting, about 500 m W of Kenyoshi, Nagawa-machi, Sannoge-gun, Aomori Prefecture (40°26'43"N, 141°20'20"E)

Togawa Formation

Pliocene

(*Fortipecten kenyoshiensis* (Chinzei) by Masuda and Noda (1976))

***Pecten (Aequipecten) kikaiensis* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 153 (45), pl. 5 (1), figs. 9a-b

Holotype: IGPS no. 50357

Kamikatsutsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Cryptopecten kikaiensis* (Nomura and Zinbo) by Habe (1977))

***Pecten kimurai* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 27, pl. 4, fig. 4

Holotype: GT no. ? , Paratype: pl. 4, figs. 1-3, 5-6 (designated

by Hatai and Nisiyama (1952))

Tamaye, Kobisa, Obisa-mura, Futaba-gun (Izura, Otsu-machi, Kitaibaraki City, Fukushima Prefecture)

Shirodo (Kokozura) Formation

Pliocene (Miocene)

(*Mizuhopecten kimurai* (Yokoyama) by Masuda and Noda (1976))

***Pecten (Patinopecten) kimurai* Yokoyama *matsumoriensis* Nakamura, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 1-2, p. 13, pl. 1, figs. 1, 2, pl. 2, figs. 1-3

Holotype: GS no. ?

Exposure on road at Matsumori, Nanakita-mura, Miyagi-gun (Izumi-ku, Sendai City), Miyagi Prefecture (38°19'N, 140°55'E)

Nanakita Formation

Miocene

(*Mizuhopecten matsumoriensis* (Nakamura) by Masuda and Noda (1976))

***Pecten (Patinopecten) kimurai* Yokoyama *tiganouraensis* Nakamura, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 1-2, p. 13, pl. 2, fig. 5

Holotype: SM no. 2555.

Cliff of hill immediately NE of the Shiogama Fisheries Market, Shiogama City, Miyagi Prefecture (38°18'N, 140°03'E)

Chiganoura Formation

Miocene

(*Mizuhopecten kimurai tiganouraensis* (Nakamura) by Masuda and Noda (1976))

***Pecten kimurai ugoensis* Hatai and Nisiyama, 1939**

Jour. Geol. Soc. Japan, vol. 46, no. 544, p. 39, text-fig. 2

Holotype: SM no. 7166

Stream-side of brook at the northern foot of hill, about 100 m SW of the Ukibuta railway station, Shimago-mura (Higashiyuri-machi, Yuri-gun), Akita Prefecture

Yazawagi (Sugota) Formation

Miocene

(*Mizuhopecten kimurai ugoensis* (Hatai and Nisiyama) by Masuda and Noda (1976))

***Pecten (Patinopecten) kudoii* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 46, pl. 7, fig. 5

Holotype: SM no. 2478

Hotatezawa (about 3 km NE of Shinyu hot spring, a tributary of the Sasanai-gawa) Iwasaki-mura, Nishitsugaru-gun, Aomori Prefecture (40°35'N, 140°01'E)

Tanosawa Formation

Miocene

(*Mizuhopecten kudoii* (Nomura))

***Pecten kurosawaensis* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 388, p. 45, fig. 3

Holotype: GT no. ?

Kurosawa (Road cliff near Kurosawa, Taihei-mura, Minamiakita-gun (Akita City), Akita Prefecture (39°44'03"N, 140°13'07"E))

((Wakimoto) Sasaoka Formation)

Pliocene

(Synonymous with *Mizuhopecten poculum* (Yokoyama) by Masuda (1962), and Masud and Noda (1976))

***Pecten kyushuensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 37, pl. 8, figs. 1, 1a

Holotype: GS no. 36450

(Beach rocks W of of the Hachiman-zaki, about 300 m N of) Wakita, Wakamatsu-ku, Kitakyushu City Fukuoka Prefecture; 33°55'52"N, 130°43'38"E)

Wakita Formation

Oligocene

(*Auquiptecten kyushuensis* (Nagao) by Masuda (1962); *Cryptopecten kyushuensis* (Nagao))

***Pecten (Chlamys) meisensis* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 156-157, pl. 13, fig. 4

Holotype: Geol. Surv. Chosen, no. ? Paratype: KUGM., no. ?

Kinshodo, North Korea

Mankodo Formation

Miocene

(*Chlmays meisensis* (Makiyama))

***Pecten miurensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 157, pl. 12, figs. 2-6

Holotype: GT no. ?

Zushi (Sea cliff at Abuzuri, SE of Zushi-machi, Miura-gun, Kanagawa Prefecture; 35°16'08"N, 139°34'02"E)

Zushi Formation

"Lower Musashino" (Pliocene)

(*Chlamys miurensis* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten (Chlamys) miyatokoensis* Nomura and Hatai, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 127, pl. 19, fig. 3

Holotype: SM no. 4518

(Southern cliff of lake at the junction of two tributaries of upper course of the Miyatoko-gawa, about 1.1 km NW of the) Dobayama, Miyatoko-mura (Tomiya-machi), Kurokawa-gun, Miyagi Prefecture (38°22'44"N, 140°49'08"E)

Otsutsumi Formation

Miocene

(*Chlamys miyatokoensis* (Nomura and Hatai) by Hatai and

Nisiyama (1952))

***Pecten (Chlamys) miyatokoensis matumori* Nomura and Hatai, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 129, pl. 20, fig. 11

Holotype: SM no. 2637

(Southern cliff of a large pond, immediately E of the contact point of the two paths, about 1.3 km NE of the shrine at) Matsumori, Nanakita-mura, Miyagi-gun (Izumi-ku, Sendai City), Miyagi Prefecture (38°19'07"N, 140°55'47"E)

Nanakita Formation

Miocene

(*Chlamys miyatokoensis matumori* (Nomura and Hatai) by Hatai and Nisiyama (1952))

***Pecten murayamai* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 1, part 9, p. 387, pl. 44, figs. 18-20

Syntype: IUT no. ?

Kinonezaka, Yasawagi, Omori-machi, Hiraga-gun, Akita Prefecture (39°22'08"N, 140°21'08"E)

Beds F or Greenish Tuffite (Sugota Formation)

Miocene

(*Mizuhopecten kimurai murayamai* (Yokoyama) by Masuda and Noda (1976))

***Pecten naganumanus* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 160, pl. 13, figs. 4, 6

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Totsuka-ku, Yokohama City, Kanagawa Prefecture; 35°22'03"N, 130°32'05"E)

Naganuma Formation

Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

(*Pecten (Notovola) naganumanus* Yokoyama by Hatai and Nisiyama (1952))

***Pecten (Chlamys) namigataensis* Ozaki, 1956**

Bull. Nat. Sci. Mus., vol. 3, no. 1 (no. 38), p. 7, pl. 2, fig. 4

Holotype: NSM no. 4379

Namigata, Nogami Tyo (-cho), Ibara City, Okayama Prefecture

Namigata Formation

Tertiary

(*Chlamys (Mimachlamys) namigataensis* (Ozaki) by Masuda and Noda (1976))

***Pecten natoriensis* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 104, pl. 40, figs. 10, 11

Holotype: unknown

Northern slope of Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38°12'N, 140°51'E)

Moniwa Formation

Miocene

(Synonymous with *Nanaochlamys notoensis* (Yokoyama) by Hatai and Nisiyama (1952) and Masuda and Noda (1976))

***Pecten natoriensis* var. *inequilateralis* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 105, pl. 40, figs. 13, 14

Holotype: unknown

Northern foot of the Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38 °12'N, 140 °51'E)

Moniwa Formation

Miocene

(Synonymus with *Nanaochlamys notoensis* (Yokoyama) by Masuda and Noda (1976))

***Pecten natoriensis* var. *subovalis* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 105, pl. 40, fig. 12

Holotype: unknown

Northern foot of the Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38 °12'N, 140 °51'E)

Moniwa Formation

Miocene

(Synonymus with *Nanaochlamys notoensis* (Yokoyama) by Masuda and Noda (1976))

***Pecten (Chlamys) nisataiensis* (Otuka)** reported by Nomura (1940) from the Miocene Moniwa Formation, Miyagi Prefecture; see ***Chlamys islandicus nisataiensis* Otuka, 1935** (*Chlamys nisataiensis* Otuka by Masuda (1962))

***Pecten notoensis* Yokoyama, 1929**

Imp. Geol. Surv. Jaoan, Rep., no. 104, p. 4, pl. 3, figs. 1-4, pl. 4, figs. 1, 2, pl. 5, figs. 1, 2

Holotype: GSJ no. ? destroyed, described by Hatai and Nisiyama (1952)

Near Nanao, Noto (Cliff behind Hosoguchi, about 100 m NW of the southern bridge, Nanao City, Ishikawa Prefecture; 37 °00'05"N, 136 °56'06"E)

Nanao Formation

Pliocene (Miocene)

(*Nanaochlamys notoensis* (Yokoyama) by Hatai and Masuda (1956))

***Pecten (Placopecten) osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 72, pl. 1, fig. 10

Holotype: JC no. 1400010

Tsuzara (Loc. No. 22), Osawano-machi, Kaminiikawa-gun, Toyama Prefecture

Kashio Aalternation of the Kurosedani Formation

Miocene

(*Placopecten osawanoensis* (Tsuda) by Masuda and Noda (1976))

***Pecten (Swiftopecten) otutumiensis* Nomura and Hatai, 1937**

Saito Ho-on Kai Mus., Res. Bull., no. 13, p. 130, pl. 18, fig. 7

Holotype: SM no. 5997

(Southern cliff of a lake at the junction of the two tributaries of the upper course of the Miyatoko-gawa, about 1.1 km NW of the) Dobayama, Miyatoko-mura (Tomiya-cho), Kurokawa-gun, Miyagi Prefecture (38 °22'44"N, 140 °49'08"E)

Otsutsumi Formation

Miocene

(*Chlamys otutumiensis* (Nomura and Hatai) by Hatai and Nisiyama (1952))

***Pecten (Patinopecten) paraplebejus* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 119, pl. 13, figs. 1, 2, pl. 16, figs. 6, 7

Holotype: SM no. 2649 (designated by Hatai and Nisiyama (1952))

Okada (Cliff bordering stream immediately NW of Okada, Yamaoka-mura, Higashishirakawa-gun, Fukushima Prefecture; 37 °01'N, 140 °26'30"E)

Tanagura Formation (Kubota Formation)

Miocene see *Mizuhopecten paraplebejus* (Nomura and Hatai))

***Pecten permirus* Yokoyama, 1926**

Jour. Geol. Soc. Tokyo, vol. 33, no. 391, p. 10, pl. 2, fig. 1

Holotype: GT no. ?

Iwaya near Nanao (Cliff at Iwaya, about 800 m W of JR Nanao Station, Nanao City, Ishikawa Prefecture; 37 °01'03"N, 136 °57'04"E)

Nanao Formation

Pliocene (Miocene)

(*Kotorapecten kagamianus permirus* (Yokoyama) by Masuda and Noda (1976))

***Pecten permirus* var. *paucicosta* Yokoyama, 1926**

Jour. Geol. Soc. Tokyo, vol. 33, no. 391, p. 10, pl. 2, fig. 2

Holotype: GT no. ?

Iwaya near Nanao (Cliff at Iwaya, about 800 m W of JR Nanao Station, Nanao City, Ishikawa Prefecture; 37 °01'03"N, 136 °57'04"E)

Nanao Formation

Pliocene (Miocene)

(*Kotorapecten kagamianus* (Yokoyama) by Masuda and Noda (1976))

***Pecten planicostulatus* Nomura and Niino, 1932**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 15, no. 3, p. 177, pl. 11, figs. 2-5

Syntype: GS no. 44584

(Bank of the pond about 250 m E of the shrine at) Ichiyama,

Amagi-yugashima-cho, Togata-gun, Shizuoka Prefecture; 34 ° 44'N, 138 ° 56'E)
Shirahama Formation
Miocene

(*Mizuhopecten planicostulatus* (Nomura and Niino))

***Pecten plebejus* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 305, pl. 36, fig. 1

Holotype: GT no. ?

Sawane (Valley cliff a short distance N of the path and about 150 m SW of the temple at N of Tanaka, Sawane-machi, Sado-gun, Niigata Prefecture; 38 ° 01'N, 138 ° 16'53"E)

Sawane Formation

Pliocene

(Synonymous with *Yabepecten tokunagai* (Yokoyama) by Masuda and Noda (1976))

***Pecten plicicostulatus* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 105, pl. 40, fig. 15

Holotype: unknown

Northern foot of the Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38 ° 12'N, 140 ° 51'E)

Moniwa Formation

Miocene

(*Kotorapecten kagamianus* (Yokoyama) by Masuda (1958), and Masuda and Noda (1976))

***Pecten poculum* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 245, pl. 32, fig. 1

Holotype: GT no. ?

Kayazawa, Yamamoto-gori, Ugo (East cliff of the Kasuge-gawa, immediately W of the shrine at E of Kayusawa, Kasuge-mura (Fujisato-machi), Yamamoto-gun, Akita Prefecture; 40 ° 17'41"N, 140 ° 14'34"E)

Wakimoto (Sasaoka) Formation

Pliocene

(*Mizuhopecten poculum* (Yokoyama) by Masuda and Noda (1976))

***Pecten praesignis* Yokoyama, 1922**

Jour. Geol. Soc. Tokyo, vol. 29, no. 350, p. 1, pl. 5, figs. 1-3

Holotype: GT no. ?

Locality and horizon unknown (Probably from the Pliocene of Shizuoka Prefecture)

Unknown: Probably Kakegawa Group

Pliocene

(*Amussiopecten praesignis* (Yokoyama) by Hatai and Nisiyama (1952))

***Pecten protomollitus* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 41, pl. 6, fig. 3

Holotype: SM no. 6086

Hotatebuchi Hitotsumori, Akaishi-mura (Ajigasawa-machi), Nishitsugaru-gun, Aomori Prefecture (40 ° 40'N, 140 ° 08'08"E)

Tanosawa Formation

Miocene

(*Placopecten protomollitus* (Nomura) by Hatai and Nisiyama (1952))

***Pecten pulchellimus* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 67, pl. 4, fig. 4

Holotype: UT no. ?

Cutting along the railway at Oji, environs of Tokyo (Kita-ku, Tokyo Prefecture)

Oji Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(*Chlamys* sp.)

Pecten (Notovola) punctuculatus Dunker reported by Kaseno and Matsuura (1965) from the Pleistocene Omma Formation, Ishikawa Prefecture

***Pecten (Chlamys) sakitoensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 37, pl. 17, fig. 38

Holotype: GS no. 3638, Paratype: GS no. 36438 (pl. 8, figs. 10-13, pl. 10, fig. 19, pl. 17, fig. 37)

(Beach rocks facing the Matsushima Channel, a short distance S of) Itanoura, Seto-mura, Nishisonogi-gun, Nagasaki Prefecture (32 ° 56'16"N, 129 ° 38'28"E)

Itanoura Formation

Oligocene

(*Chlamys sakitoensis* (Nagao) by Hatai and Nisiyama (1952))

***Pecten (Patinopecten) sannohensis* Chinzei, 1961**

Jour. Fac. Sci., Univ. Tokyo, Sec. 2, vol. 13, pt. 1, p. 107, pl. 1, figs. 1-5

Holotype: CM no. 8645 (fig. 3), Paratype: CM nos. 8646 (fig. 4), 8647 (fig. 1), 8648 (fig. 2), 8649 (fig. 5), 8650-8652

Loc. No. 9; about 1.2 km W of Dogamae, Nozawa-mura (Gonohe-machi, Sannohe-gun), Aomori Prefecture

Togawa Formation

Pliocene

(*Mizuhopecten sannohensis* (Chinzei) by Masuda and Noda (1976))

***Pecten (Chlamys) satoi* Yokoyama, 1928**

Rep., Imp. Geol. Surv. Japan, no. 101, p. 94, pl. 13, figs. 13, 14, pl. 14, fig. 2

Holotype: GT no. ?

Hoyosak, Rinko-sho, Taihoku, Formosa (Taiwan)

Upper Byoritsu Formation

Pliocene (early Pleistocene)

***Pecten (Placopecten) setanaensis* Kubota, 1950**

Miner. And Geol., vol. 3, no. 5, p. 134, pl. 7, figs. 1-4

Holotype: UH no. 13549 (figs. 1, 2)

Left cliff at Kaigara-bashi, upper course of the Meppu River, Imagane-machi, Setana-gun, Shiribeshi Province, Hokkaido (42°26'35"N, 140°04'20"E)

Imagane Formation

Miocene

(*Placopecten setanaensis* (Kubota) by Masuda and Noda (1976))

***Pecten (Lyropecten ?) s-hataii* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 44, pl. 6, fig. 7

Holotype: SM no. 6025

Hotatezawa (about 3 km NE of Shinyu hot spring, a tributary of the Sasanai-gawa, Iwasaki-mura, Nishitsugaru-gun, Aomori Prefecture; 40°34'N, 140°01'E)

Tanosawa Formation

Miocene

(Synonymous with *Masudapecten iwasakiensis* (Nomura) by Masuda (1958))

***Pecten shirahamaensis* Nomura and Niino, 1932**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 15, no. 3, p. 175, pl. 12, figs. 5, 5a

Holotype: GS no. 44587

(Road-side rocks at Nagata, about 200 m NE of the village-office), Shirahama-mura, Kamo-gun (Shimoda City), Shizuoka Prefecture (34°42'N, 138°58.5'E)

Shirahama Formation

Miocene

(*Chlamys shirahamaensis* (Nomura and Niino) by Hatai and Nisiyama (1952))

Pecten similis Lasky reported by Yokoyama (1911; Jour. Geol. Soc. Tokyo, vol. 18, no. 208) from the Pliocene (Pleistocene) Koshiba Formation, Kanagawa Prefecture (*Polynemamussium alaskensis* (Dall) by Hatai and Nisiyama (1952))

Pecten squamatus (Gmelin, 1791) reported by Yokoyama (1920; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 151, pl. 41, figs. 3, 4) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture (*Chlamys (Mirapecten) squamatus* (Gmelin) by Hatai and Nisiyama (1952); *Chlamys (Azumapecten) squamata* (Gmelin) by Habe (1977)); see *Ostrea squamata* Gmelin, 1791

***Pecten (Pecten) subsquamatus* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 53, pl. 1, figs. 11a-b

Holotype: IGPS no. 44702

Five hundreds and fifty meters E of Jo-tsusho-wan Station no.

57, Tsusho-sho, Byoritsu-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene

(*Chlamys subsquamatus* (Nomura))

***Pecten subyessoensis* Yokoyama, 1930**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. II, vol. 2, part 10, p. 416, pl. 80, figs. 3, 4

Syntype: UT no. ?

Haushigawa (fig. 3), Sakikawa (fig. 4), both of Tomarigeshi-mura, Shiska-gun, Sakhalin, Russia

Naikawa Beds

Tertiary

(*Mizuhopecten subyessoensis* (Yokoyama))

Pecten swiftii Bernard reported by Kochibe (1882; Rika Kai-shi, no. 4, Tokyo Univ. Press, pl. 5, fig. 2) from the Miocene Hatsuzaki (Kokozura) Formation, Ibaraki Prefecture

(*Swiftopecten swiftii* (Bernard) by Masuda (1960), and Masuda and Noda (1976))

***Pecten tairanus* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 8, pl. 1, figs. 8, 9

Holotype: GT no. ?

Kubo street in the town of Taira (Tairashimotaira-kubo, about 2km NW of JR Taira Station, Iwaki City, Fukushima Prefecture; 37°03'05"N, 140°53'E)

Kamenoo Formation

Miocene

(Synonymous with *Delectopecten peckhami* (Gabb) by Masuda (1962))

***Pecten (Patinopecten) taiwanus* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 56, pl. 2, figs. 5a-b

Holotype: IGPS no. 45007

Wangwa Station 35, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(Synonymous with *Mizuhopecten tokyoensis hokurikuensis* (Akiyama))

***Pecten takahashii* Yokoyama, 1930**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 2, no. 10, p. 416, pl. 78, figs. 1, 2, pl. 79, figs. 1, 2

Holotype: GT no. ?

Isousi, Hihashisakutan, Motodomari-gun, South Sakhalin, Russia

Maruyama Formation

Pliocene

(*Fortipecten takahashii* (Yokoyama) by Masuda (1962))

***Pecten tayamai* Nomura and Niino, 1932**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 15, no. 3, p. 178, pl. 11, figs. 6-8

Syntype: GS no. 44581

(Road-side rocks at Nagata, about 200 m NE of the village-office) Shirahama-mura, Kamo-gun (Shimoda City), Shizuoka Prefecture (34°42'N, 138°58.5'E)

Shirahama Formation

Miocene

(*Comptopallium tayamai* (Nomura and Niino) by Masuda (1962))

***Pecten tigerrinus* Muller** reported by Yokoyama (1911; Jour. Geol. Soc. Tokyo, vol. 18, no. 208, p. 3, pl. 1, figs. 11, 12) from the Pliocene (Pleistocene) Koshiha Formation, Kanagawa Prefecture (*Swiftopecten swiftii* (Bernard) by Masuda (1960), and Masuda and Noda (1976))

***Pecten tokunagai* Yokoyama, 1911**

Jour. Geol. Soc. Tokyo, vol. 18, no. 208, p. 4, pl. 1, fig. 2

Holotype: GT no. ?

Koshiha (Sea cliff of Shiba, Kanazawa-machi, Yokohama City, Kanagawa Prefecture (32°20'05"N, 139°38'06"E)

Koshiha Formation

Neogene (Pleistocene)

(*Yabepecten tokunagai* (Yokoyama) by Masuda (1962))

***Pecten tokyoensis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 65-66, pl. 5, figs. 1-10

Syntype: UT no. ?

Cutting along the railway at Oji, environs of Tokyo (Kita-ku, Tokyo Prefecture)

Oji Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

(*Mizuhopecten tokyoensis* (Tokunaga) by Masuda and Noda (1976))

***Pecten (Patinopecten) tokyoensis* var. *kimurai* Yokoyama** reported by Kubota (1950; Cenozoic Res., no. 6) (*Mizuhopecten kimurai murayamai* (Yokoyama) by Masuda and Noda (1976))

***Pecten tryblium* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 17, pl. 6, fig. 1

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952))

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture; 36°40'N, 138°04'E)

(Shigarami Formation)

Pliocene

(*Mizuhopecten tryblium* (Yokoyama) by Masuda and Noda (1976))

***Pecten turpiculus* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 18, pl. 2, fig. 4

Holotype: GT no. ?

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture; 36°40'N, 138°04'E)

(Shigarami Formation)

Pliocene

(*Chlamys cosibensis turpiculus* (Yokoyama) by Masuda (1962) and synonymous with *Chlamys cosibensis* (Yokoyama) by Masuda and Noda (1976))

***Pecten vesiculosus* Dunker, 1877** reported by Yokoyama (1911; Jour. Geol. Soc. Tokyo, vol. 18, no. 208, p. 1, pl. 1, figs. 8-10) from the Pliocene (Pleistocene) Koshiha Formation, Kanagawa Prefecture (*Auquipecten vesiculosus* (Dunker) by Hatai and Nisiyama (1952) and *Cryptopecten vesiculosus* (Dunker) by Masuda and Noda)

***Pecten watanabei* Yokoyama, 1929**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 2, part 9, p. 393, pl. 76, fig. 4

Holotype: UT no. ?

"Grey shale" (Nampi Beds) of the river Tcharnikka, Sakhalin, Russia

Beds III (Nampi Beds)

Uncertain (may be Middle Miocene)

(Synonymous with *Delectopecten peckhami* (Gabb) by Masuda (1962; Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 33, no. 2, p. 158))

***Pecten (? Amussiopecten) yabei* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 59, pl. 2, figs. 3, 4

Holotype: IGPS no. 25265, Paratype: IGPS no. ?

Near Rahau, Banchi, Kagi-gun, Tainan-shu, Taiwan

Kaizan Beds

Miocene

(*Amussiopecten yabei* (Nomura))

***Pecten Yagurai* Makiyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 2, p. 23, pl. 4, figs. 4, 5

Holotype: Maiko Concol. Cabinet and GK no. ?

Beneth of the Maiko Hotel, near Kobe (Tarumi-ku, Kobe City) Hyogo Prefecture

Pliocene (Pleistocene)

(*Chlamys (Mimachlamys) nobilis* (Reeve, 1852))

***Pecten yamasakii* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 17, pl. 5, fig. 1

Holotype: GT no, Paratype (pl. 5, figs. 2, 4, 5) (designated by Hatai and Nisiyama (1952))

A short distance N of Shimmosoyama, Shigarami-mura, Kamminochi-gun, Nagano Prefecture; 36 °40'N, 138 °04'E)
Shigarami Formation
Pliocene
(*Mizuhopecten yamasakii* (Yokoyama) by Masuda and Noda (1976))

***Pecten (Aequipecten) yanagawaensis* Nomura and Zinbo, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 337, pl. 20, figs. 2a-b

Holotype: SM no. 8355

Yanagawa-machi (River cliff of Hirosegawa, at the SE end of Yanagawa Park, a tributary of the Abukuma-gawa, Yanagawa-machi, Date-gun, Fukushima Prefecture; 37 ° 51'05"N, 140 °36'05"E)

Yanagawa Formation

Miocene

(*Cryptopecten yanagawaensis* (Nomura and Zinbo))

***Pecten (Patinopecten) yessoensis* Jay, 1857** reported by Kuroda (1931; Geology of Central Shinano, part 4, p. 34, pl. 2, fig. 6) from the Miocene Ogawa Formation, Nagano Prefecture (*Mizuhopecten yessoensis* (Jay) by Masuda and Noda (1976))

***Pectunculus derelictus* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 11, Part 7, p. 361, pl. 69, fig. 1

Holotype: GT no. ?

Kaigasawa, Higashiyama, Echigo (Valley W of Tochio-machi, Koshi-gun, Niigata Prefecture; 37 °28'30"N, 139 °59'E)

(Shiraiwa Formation)

Pliocene

(*Glycymeris derelictus* (Yokoyama) by Hatai and Nisiyama (1952))

***Pectunculus formosanus* Yokoyama, 1928**

Rep. Imp. Geol. Surv. Japan, no. 101, p. 106, pl. 18, figs. 1-3

Syntype: GSJ no. ? (originally not described)

Zenpobi, Kao Hsiung; Tenshi amd Kodenko, Shiko-go, Miaoli; Suijuntou, Sankyaku, right bank off the Taan Chi; Sanko, Injurin and Chokokan, Taikei-go, Miaoli; Kwanshirei, Paishatun, Miaoli, Taiwan

Tokushan Formation

Plio-Pleistocene (Pleistocene)

(*Glycymeris formosana* (Yokoyama) by Matsukuma, 1979; Venus, vol. 38, no. 2, p. 106)

***Pectunculus nipponicus* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 168, pl. 18, figs. 3-6, 7 (?)

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952)), Paratype: GT no. ? (fig. 4)

Koshiha (Sea cliff of Shiba, Kanazawa-machi, Kanazawaku-ku,

Yokohama City, Kanagawa Prefecture; 35 °20'05"N, 139 ° 38'06"E)

Koshiha Formation

"Lower Musashino" (Pleistocene)

(*Glycymeris nipponica* (Yokoyama) by Hatai and Nisiyama (1952))

***Pectunculus rotundus* Dunker, 1882** reported by Yokoyama (1920; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 167, pl. 17, fig. 10, 11) from the Pliocene (Pleistocene) Naganuma Fgformation, Kanagawa Prefecture (*Glycymeris rotunda* (Dunker) by Hatai and Nisiyama (1952))

***Pectunculus yamakawai* Yokoyama, 1922**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 190, pl. 16, figs. 4, 5

Lectotype: UMUT no. CM21631 (fig. 4); Paralectotype, UMUT no. CM21632 (fig. 5) (designated by Taki and Oyama, 1954 as Holotype; Lectotype by Oyama (1973))

An outcrop at Ochi-shimoshinden, Ichihara City, Chiba Prefecture

Semata Shell-bed (Semata Formation)

Pleistocene

***Pectunculus yamasakii* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 20, pl. 5, figs. 6a-b

Holotype: GT no. ?

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture; 36 ° 40'N, 138 °04'E)

(Shigarami Formation)

Pliocene

(*Glycymeris yamasakii* (Yokoyama) by Hatai and Nisiyama (1952))

***Pectunculina ichishiensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 61, pl. 1, figs. 9a-11

Holotype: ESN no. 30004 (figs. 9a-b)

Loc. No. K73, Nakanomura, Hakusan-machi, Ichishi-gun, Mie Prefecture

Oi Formation

Miocene

(*Limopsis (Pectunculina) ichishiensis* (Shibata) by Masuda and Noda (1976))

***Pedalion tomiyasui* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 103, pl. 20, figs. 5, 5a

Holotype: Lectotype, GS no. 35686 (designated by Hatai and Nisiyama (1952)), Paratype: GS no. 35686

(Sea cliff W of hill (48 m), about 250 m N of) Takesaki, Koyagi-jima, Koyagi-mura, Nishisonogi-gun, Nagasaki

Prefecture (32°40'34"N, 129°48'16"E)
Futagojima Formation
Lower Eocene
(*Isognomon tomiyasui* (Nagao))

***Pedalion tugaruense* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 34, pl. 2, figs. 1a-b
Holotype: SM no. 5966
(Path on the southern side of the Wakinosawa valley, about 2 km W of) Hitotsumori, Akaishi-mura (Ajigasawa-machi), Nishitsugaru-gun, Aomori Prefecture (40°41'N, 140°08'05"E)
Tanosawa Formation
Miocene
(*Isognomon tugaruense* (Nomura))

***Penicillus (Warnea) kanazawensis* Omura, 1969**

Ann. Sci. Coll. Lib. Art., Kanazawa Univ., vol. 6, p. 30, pl. 3, figs. 1, 2, 5-9, pl. 4, figs. 1-12, pl. 5, figs. 4-6
Holotype: GDLAKZ no. 250032 (figs. 7, 8)
River-side cliff of the Asano River at Higashiichise, Kanazawa City, Ishikawa Prefecture
Sunakozaka Formation
Miocene
(*Humphreyia (Nipponoclava) kanazawaensis* (Omura) by Majima (1994))

***Penicillus (Warnea) yokoyamai* (Shikama) see *Bewchites yokoyamai* Shikama, 1954**

***Periglypta hayakawai* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 185, pl. 3, figs. 8a-c
Holotype: TKD no. 5802, Paratype: TKD no. 5803 (same locality)
Loc. No. 709, a small valley cliff, Minezawa, Chichibu City, Saitama Prefecture
Hiranita Formation
Miocene

***Periploma besshoensis* (Yokoyama) reported by Shikama (1943; Nippon Kaseki Zuhu, p. 225, pl. 34, figs. 6a-b: reproduced from Yokoyama, 1924) from the Asagai Formation, Fukushima Prefecture; see *Tellina besshoensis* Yokoyama, 1924 (*Periploma besshoense* (Yokoyama) by Hatai and Nisiyama (1952))**

***Periploma (Aelga) besshoensis* (Yokoyama) reported by Kamada (1962; Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 75, pl. 6, figs. 1-4) from the Asagai Formation, Fukushima Prefecture; see *Tellina besshoense* Yokoyama, 1924**

***Periploma ezoense* Mizuno and Inoue, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 10, p. 654, pl. 30, fig. 3
Holotype: GSJ no. ?

The vicinity of Mitsubishi-Oyubari Coal-mine, Yubari City, Hokkaido
Poronai Formation
Oligocene (late Eocene)

***Periploma fujikuraensis* Noda, 1962**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Vol. 34, no. 3, p. 229, pl. 16, fig. 6
Holotype: IGPS no. 79056
Loc. No. 1300, upstream of the Higashi River, about 400 m S of Fujikura, Matsunoyama-machi, Higashikubiki-gun, Niigata Prefecture.
Nitta Formation
Pliocene

***Periploma iesakai* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 604, pl. 1, fig. 13
Holotype: GSJ no. 5029
Kakinoura-jima, Sakito-machi, Nishisonogi-gun, Nagasaki Prefecture
Tokuman Formation
Oligocene

***Periploma (Halistrepta) kurodai* Habe, 1952**

Genera of Jap. Shells. No. 3, Kairui-Bunken-Kanko-kai, Kyoto, p. 265 (n. n.): Type, *Periploma cf. besshoensis*, Kuroda (1931; In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 43)
(Invalid by Masuda and Noda (1976))

***Periploma mitsuganoense* Araki, 1959**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 36, p. 163, pl. 18, figs. 2a-b
Holotype: Mie Univ. no. ? (figs. 2a-b), Paratype: Mie Univ. no. ?
Tsuzumi Pass, Mitsugano, Hakusan-cho, Ichishi-gun, Mie Prefecture; Paratype, Cliff of the southern slope of Kaisekizan, Sakakihara, Hisai-cho (Hisai City), Ichishi-gun, Mie Prefecture
Kaisekizan Formation
Miocene

***Periploma owasensis* Suzuki (MS), 1934**

Chikyū (Globe), vol. 21, no. 5, p. 348, text-fig. 4
Holotype: GT no. ?
(Road-side cutting about 700 m W of) Matsumoto, Owase-machi, Kimuro-gun, Mie Prefecture (34°03'35"N, 136°14'37"E)
Yukunoura Formation
Miocene
(*Periploma owasensis* Suzuki by Hatai and Nisiyama (1952))

***Periploma plane* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 120, pl. 18, figs. 3, 4

Syntype: NSM nos. 4485, 4486

Road-side cutting 1.5 km south of Hanawa-machi (no. 4485), and Sea cliff at Gyobu-misaki, Iioka-machi (no. 4486), Kaijo-gun, Chiba Prefecture
Iioka Formation
Pliocene

***Periploma pulchellum* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 90, pl. 23, figs. 17, 18
Holotype: GS no. 72507

A small cliff in front of the grocery store at the northern entrance to Kokozura, Nakoso-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture (36°51'03"N, 140°47'05"E)

Kokozura Formation

Miocene

(*Periploma pullcella* Hatai and Nisiyama by Masuda and Noda (1976))

***Periploma yokoyamai* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2, art. 6, p. 153; Type, *Tellina besshoensis* Yokoyama (1924; Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 45, Art. 3, p. 14, pl. 2, figs. 1-5: not Yokoyama)

Holotype: UT no. ?

Bessho, Iwasaki-mura, Iwaki-gun (Jobanfujiwara-machi, Iwaki City), Fukushima Prefecture

Asagai Formation

Miocene (Oligocene)

***Perna nishiyamai* Yokoyama, 1911**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 7, pl. 1, figs. 1a-b

Holotype: GT no. ?

In the shaft (625 ft deep) of the colliery in the Manda mine (About 150 m NE of the large pond, and about 700 m E of the contact point of the two main roads at) Manda, Arao-machi, Tamana-gun (Arao City), Kumamoto Prefecture (32°59'50"N, 130°27'04"E)

(Yotsuyama Formation?)

Upper Eocene

(*Lima (Acesta) nishiyamai* (Yokoyama) by Hatai and Nisiyama (1952))

***Perna oyamai* Taguchi, 1983**

Jour. Sci., Hiroshima Univ. Ser. C, vol. 8, no. 2, p. 98, pl. 8, figs. 1, 4, 5, pl. 9, figs. 1-6

Holotype: IGSH-ET no. 10019 (pl. 8, figs. 1a-b), Paratype: IGSH-ET nos. 10020-10027

Shinden, Tsuyama City, Okayama Prefecture, 35°03'05"N, 134°04'01"E

Yoshino Formation of the Katsuta Group

Miocene

***Peronidia elongata* Uozumi, 1966**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 13, no. 2, p. 131, pl. 10, figs. 2, 3

Holotype: UH no. 11203 (fig. 2), Paratype: UH nos. 1221, 11205, 11204

Middle stream of the Horomui-gawa, near Asahi, Iwamizawa City, Ishikari Province, Hokkaido

Asahi Formation

Miocene

(*Megangulus elongata* (Uozumi) by Matsukuma (1988))

***Peronidia lutea* (Wood) reported by Kaseno and Matsuura**

(1965) from the Pleistocene Omma Formation, Ishikawa Prefecture (*Megangulus lutea* (Wood) by Matsukuma (1988))

***Peronidia ochii* Kamada, 1962**

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 133, pl. 16, figs. 6-8

Holotype: IGPS no. 79388 (fig. 6)

Yumoto colliery, Joban Coal-mine, Yumoto-machi, Joban City (Iwaki City), Fukushima Prefecture

Iwaki Formation

Oligocene

(*Megangulus ochii* (Kamada) by Matsukuma (1988))

***Peronidia t-matsumotoi* (Otuka) reported by Kanno, Ohara and**

Kaiteya (1968) from the Miocene Horomui Formation, Hokkaido; see *Megangulus tmatsumotoi* (Otuka)

***Phacoides pullensis* (Oppenheim) reported by Nagao (1928)**

from the Eocene Takeyama Formation, Fukuoka Prefecture; see *Lucina pullensis* Oppenheim and also see *Lucinoma pullensis* (Oppenheim, 1894)

***Phallium peckhamioides* Ozaki, 1956**

Bull. Nat. Sci. Mus., vol. 3, no. 1, p. 3, pl. 1, figs. 10, 11

Holotype: NSM no. 4370 (fig. 10)

Nisiotani, Nobori, Hane Twon, Aaki-gun, Kochi Prefecture

Nomori Formation

Miocene (Pliocene)

(*Palliolium peckhamioides* (Ozaki) by Masuda and Noda (1976))

***Phaxas izumoensis* (Yokoyama) reported by Masuda (1955)**

from the Miocene Hihashiinnai Formation, Ishikawa Prefecture; see *Cultellus izumoensis* Yokoyama, 1923

***Phaxas izumoensis jobanicus* (Kanno) reported by Matsumoto,**

1964 from the Miocene Oga Formation, Wakayama Prefecture; see *Cultellus izumoensis jobanicus* Kanno, 1956

***Phlyctiderma japonica* (Pilsbry) reported by Kanno (1960)**

from the Miocene Hiranita Formation, Saitama Prefecture

Pholadidea (Penitella) kamakurensis (Yokoyama) reported by Uozumi and Fujie (1956) from the Miocene Chikubetsu Formation, Hokkaido; see ***Penitella kamakurensis (Yokoyama)*** by Habe (1977): see ***Jouannetia kamakurensis Yokoyama, 1922***

Pholadomya kawadai Omori, 1952

Venus, vol. 17, no. 1, p. 23, text-figs. 1-3

Holotype: TKD no. 7755

Tsuzukiya, Kogai-mura (Haga-machi), Haga-gun, Tochigi Prefecture

Kobana Formation of the Arakawa Group

Miocene

Pholadomya (Nipponopanacca) levicaudata Matsukuma, 1989

Venus vol. 48, no. 4, p. 211, pl. 1, figs. 7-12, pl. 2, figs. 7-8

Holotype: NSMT-Mo 66228, Paratype: NSMT-Mo 66229

Off Cape Noshap, Wakkanai, Hokkaido (50 - 60 m); Paratypes: off Cape Soya, Enshunada, off Shizuoka Prefecture and south of Oki Islands, Shimane Prefecture

Recent

Pholadidea kotakae Kanno and Matsuno, 1960

Jour. Geol. Soc. Japan, vol. 66, no. 772, p. 42, pl. 4, figs. 10a-b

Holotype: TKD no. 5513, Paratype: TKD no. 5514

Loc. No. 31, upper stream of the Haboro River, Haboro-machi, Rumoi Province, Hokkaido

Chikubetsu Formation; lower part

Miocene

(***Penitella kotakae (Kanno and Matsuno)*** by Masuda and Noda (1976))

Pholadidea (Penitella) penita (Conrad) reported by Iwai (1965) from the Pliocene (Pleistocene) Daishayka Formation, Aomori Prefecture; see ***Pholas penita Conrad, 1882 (Penitella kamakurensis (Yokoyama)*** by Habe (1977))

Pholadomya japonica Yokoyama, 1920

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 106, pl. 6, figs. 30, 31

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Totsuka-ku, Yokohama City, Kanagawa Prefecture; 35 °22'03"N, 139 °32'05"E)

Naganuma Formation

Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

(***Cyrtopleura dilatata japonica (Yokoyama)*** by Hatai and Nisiyama (1952); ***Barnea (Umitakea) dilatata (Souleyet, 1843)*** by Habe (1977))

Pholadomya kawadai Omori, 1952

Venus, vol. 17, no. 1, p. 23, text-figs. 1-3

Holotype: TKD no. 7755

Tsuzukiya, Kogai-mura (Haga-machi), Haga-gun (Karasuyama district), Tochigi Prefecture

Kobana Formation

Miocene

Pholadomya kazusensis Nagao, 1943 p. 154, pl. 12, figs. 3, 3a

Holotype: GS no. 19534, Paratype: GS no. 19534 (same locality)

(River cliff of the Minatogawa, a short distance E of the bridge at N of Seki, Sekitoya-mura, Kimitsu-gun (Kimitsu City), Chiba Prefecture; 35 °12'18"N, 139 °56'48"E)

Nokogiriyama (Amatsu) Formation

Miocene

Pholadomya "margaritacea" (Sowerby) reported by Nagao (1943) from the Eocene Iccyoda Formation, Kumamoto Prefecture; see ***Cardita margaritacea Sowerby*** (synonymous with ***Pholadomya nasuta Conrad*** by Hatai and Nisiyama (1952))

Pholadomya m-katayamai Otuka, 1943

Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 60, pl. 3, fig. 11

Holotype: GT no. ?

Northern cliff of the Takasegawa (about 200 m W of the bridge and about 250 m S of the primary school) at Ogoto, Higashiyuri-machi, Yuri-gun, Akita Prefecture (39 °17'N, 140 °14'14"E)

Sugota Formation

Miocene

(***Pholadomya mkatayamai Otuka***)

Pholadomya puschi Goldfuss reported by Yokoyama (1927) from the Eocene Tari Formation, Teshio Province, Hokkaido

Pholadomya takasimensis Nagao, 1943

Jour. Geol. Soc. Japan, vol. 50, no. 546, p. 156, pl. 13, figs. 1, 1a-b

Holotype: GS no. ?

Okinoshima, Province of Hizen (Southern coast, about 300 m S of the hill (149 m) on Okinoshima, Iojima-mura, Nishisonogi-gun, Nagasaki Prefecture; 32 °41'14"N, 129 °46'52"E)

Okinoshima Formation

Eocene

Pholadomya torunagai Tan reported by Tsukimori and Hoshimi (1973) from the Miocene Tari Formation, Tottori Prefecture (miss print of ***Pholadomya torunagai Tan*** by Masuda and Noda (1976))

Pillucina contraria (Dunker) reported by Otuka (1934) from the Miocene Shiratori Formation, Iwate Prefecture (***Wallucina striata (Tokunaga)*** by Hatai and Nisiyama (1952)); see ***Lucina contraria Dunker***

Pillucina (Wallucina) habei* Itoigawa** reported by Itoigawa (1972) from the Miocene Shukunohora Formation, Gifu Prefecture (Pillucina (Wallucina) habei* (Itoigawa)** by Masuda and Noda (1976)); see ***Wallucina habei* Itoigawa, 1955**

***Pillucina (Wallucina) lamyi* (Chavan)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

Pillucina (Wallucina) okumurai* Itoigawa** reported by Itoigawa (1974) from the Miocene Shukunohora Formation, Gifu Prefecture (Pillucina (Wallucina) okumurai* (Itoigawa)** by Masuda and Noda (1976)); see ***Wallucina okumurai* Itoigawa, 1957**

***Pillucina pisidium nisataiensis* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 615, pl. 47, figs. 33, 34

Holotype: GT no. 1415

(Stream-side of Nisatai valley, about 200 m SE of the bridge at S of) Nisatai, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°17'53"N, 141°19'24"E)

Shiratori Formation

Miocene

***Pillucina (Sydlorina) yokoyamai* (Otuka)** reported by Itoigawa (1955) from the Miocene Kubohara Formation, Gifu Prefecture; ***Lucina yokoyamai* Otuka, 1943**

***Pinctada ogawai* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 62, pl. 1, figs. 12, 13

Holotype: ESN no. 3005 (fig. 12)

Loc. No. K35, Ashisaka, Misato-mura, Age-gun, Mie Prefecture Oi Formation

Miocene

(***Pteria ? ogawai* (Shibata)** by Masuda and Noda (1976))

***Pinna asakurensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 31, pl. 8, figs. 20, 20a

Holotype: GS no. 36018, Paratype: GS no. 36018 (same locality of the Holotype)

(Northwestern slope of the Doshi-zan, about 450 m NW of the summit (465.9), and about 350 m SE of the) Nakayama Pass, Hoshuyama-mura, Asakura-gun, Fukuoka Prefecture (33°23'13"N, 130°51'41"E)

Kawamagari Formation

Middle Eocene

***Pinna cellophana* Matsukuma and Okutani, 1986**

Venus, vol. 45, no. 1, p. 2

Holotype: NSMT-Mo 63891

Tosa Bay, off Okinoshima, Kochi Prefecture

Recent

***Pitar aiutiensis* (Nomura and Hatai)** reported by Mizuno (1960) from the Miocene Isomatsu Formation, Aomori Prefecture; see ***Clementia aiutiensis* Nomura and Hatai, 1936**

***Pitar ashiyaensis* (Nagao)** reported by Hirayama (1956) from the Oligocene Ashiya Formation in Hikoshima, Yamaguchi Prefecture; ***Pitaria asiyaensis* Nagao, 1928**

***Pitar (Costellipitar) chordata* (Romer)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Pitar (Costellipitar) concentrica* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 177, pl. 2, figs. 8, 9

Holotype: TKD no. 5746 (fig. 8), Paratype: TKD no. 5747 (loc. No. 903)

Loc. No. 615, a river side cliff, about 100 m downstream of the Arakawa-bashi (Bridge), Arakawa-mura, Chichibu-gun, Saitama Prefecture: Paratype; Loc. No. 903, a river side cliff, backwards of the village office of Yokoze-mura, Nakago, Yokoze-mura, (Yokoze-machi, Chichibu-gun, Saitama Prefecture)

Nagura Formation. (Holotype), Kamiyokoze Formation (Paratype)

Miocene

***Pitar (Pitarina) dohrni* (Romer)** reported by Shuto (1960) from the Miocene Tano Formation, Miyazaki Prefecture

***Pitar hataii* Natori, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 55, p. 250, pl. 36, figs. 3a-b

Holotype: IGPS no. 85728

Motomiya, Motomiya-cho, Higashimuro-gun, Wakayama Prefecture

Ukegawa-Muro Formation

Oligocene or Miocene

***Pitar hokkadoensis* Nomura, 1935**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 1, p. 35, pl. 4, figs. 1, 2

Holotype: GS no. 56371

At the junction of the Ponrumoppe-gawa and the Rumoi-gawa, Rumoi-gun, Teshio (River cliff about 650 m NW of Owaga station at the junction of the Porurumoppe-gawa and the Rumoi-gawa, Rumoi-machi, Rumoi-gun, Teshio Province, Hokkaido; 43°54'09"N, 141°42'02"E)

Takikawa (Kawabata) Formation

Pliocene (Miocene)

Pitar itoi* (Makiyama)** reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture; see ***Pitaria itoi* Makiyama, 1926**(Neogenella itoi* (Makiyama)**)

Pitar (Aagriopoma) japonica* Kuroda and Kawamoto, 1956** reported by Hayasaka (1973) from the Pliocene Tajima Formation, Kagoshima Prefecture (Pitar (Pitarina) japonica* Kuroda and Kawamoto** by Masuda and Noda (1976))

***Pitar kaniei* Shikama, 1973**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol), p. 201, pl. 17, figs. 12, 13

Syntype: YCM-GP no. 525

Loc. No. 10; Housing area of Daimyoji-Syoei-danchi, Kinugasa, Yokosuka City, Kanagawa Prefecture (35°15'37"N, 139°39'40"E)

Zushi Formation

Miocene

***Pitar kotoi* Natori, 1964**

Trans. Proc. Palaeont. Soc. Japam, N. S., no. 55, p. 252, pl. 36, figs. 4a-b

Holotype: IGPS no. 85729

Motomiya, Motomiya-cho, Higashimuro-gun, Wakayama Prefecture

Ukegawa-Muro Group

Oligocene or Miocene

***Pitar kyushuensis* (Nagao)** reported by Natori (1964) as for ***Pitaria kyusuensis* Nagao, 1928**

***Pitar matsumotoi* (Nagao)** reported by Hirayama (1956) from the Oligocene strata in the Hikoshima, Yamaguchi Prefecture: see ***Pitarina matsumotoi* Nagao, 1928**

***Pitar (Pitarina) matsumotoi* (Nagao)** reported by Kanno (1961) from the Oligocene Asagai Formation, Fukushima Prefecture: see ***Pitarina matsumotoi* Nagao, 1928**

***Pitar matsuraensis* (Nagao)** reported by Matsumoto (1971) from the Oligocene (Miocene) Wappazawa Formation, Saitama Prefecture; see ***Macrocallista matsuraensis* Nagao, 1928**

***Pitar okadana* (Yokoyama)** reported by Uozumi (1953) from the Miocene Poroshin Formation, Hokkaido; see ***Venus okadana* Yokoyama, 1932**

***Pitar (Pitarina) pellucida* (Lamarck)** reported by Shuto (1960) from the Miocene Kawabaru Formation, Miyazaki Prefecture; ***Cytherea pellucida* Lamarck, 1818**

***Pitar (Pitarina) semeliformis* Shuto, 1960**

Mem. Coll. Sci., Kyushu Univ., Ser. D, vol. 9, no. 3, p. 135, pl. 14, figs. 1, 3

Holotype: GKL no. 4469 (fig. 3), Paratype: GKL no. 4468 and 4470 (same locality)

Akatani (MI-770), Takaoka-machi, Higashimorokata-gun, Miyazaki Prefecture

Tano Member of the Koyu Formation
Miocene

***Pitar sendaica* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 258, pl. 35, figs. 1-3, 10a-b

Holotype: SM no. 4017, Paratype: SM no. 16130
Goroku cliff along the right bank of the Hirose-gawa Aoba-ku, Sendai City, Miyagi Prefecture (38°16'N, 140°49'E)

Tatsunokuchi Formation

Pliocene

(***Pseudaminatis sendaica* (Nomura)** by Masuda and Noda (1976); ***Gigantocallista sendaica* (Nomura)** by Takagi, 1990 (Trans. Proc. Palaeont. Soc. Japan, N. S., no. 159))

“*Pitar*” *shiobarensis* Akutsu, 1964

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 284, pl. 59, fig. 13

Holotype: IGPS no. 85505

Along the Hoki River, opposite the Electric Power Station at Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatazawa Formation

Miocene

***Pitar sorachiensis* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 603, pl. 4, figs. 1a-4

Holotype: GSJ no. 5021 (figs. 1a-b)

In the vicinity of Manji, Kurisawa-machi, Yubari-gun, Sorachi Province, Hokkaido

Wakkanabe Formation

Oligocene

***Pitar (Pitarina) sulfurea* Pilsbry, 1904** reported by Shuto (1960) from the Miocene Tano Formation, Miyazaki Prefecture

***Pitar yabei* Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 617, pl. 48, figs. 49, 50

Syntype: GT no. 1456

(Stream-side of Nisatai valley, about 200 m SE of the bridge S of) Nisatai, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°17'53"N, 141°19'24"E)

Shiratori Formation

Miocene

***Pitar sunakozakaensis* Ogasawara, 1976**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 46, no. 2, p. 50, pl. 12, figs. 17, 18, 22

Holotype: IGCP no. 95028 (pl. 12, fig. 22), Paratype: IGPS nos. 95029-1, -3 (pl. 12, figs. 17, 18)

Loc. no. Su-01: River side cliff of Asano-gawa at Higashi-Ichise, Kanazawa City, Ishikawa Prefecture

Sunakozaka Formation

Miocene (early middle Miocene)

***Pitaria ? altoumbonata* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 75, pl. 11, fig. 15

Holotype: GS no. 36445, Paratype: GS no. 36441 (pl. 11, fig. 19)

(Southern slope bordering the creek a short distance W of the pond at) Shinyama, Omachi-cho, Kishima-gun, Saga Prefecture (33 °13'18"N, 130 °07'10"E)

Kishima Formation

Oligocene

(*Pitar altoumbonata* (Nagao) by Hatai and Nisiyama (1952))

***Pitaria ashiyaensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 72, pl. 13, figs. 1a-b

Holotype: GS no. 36434, Paratype: GS no. 36419 (pl. 9, figs. 12, 12a)

(Beach rocks on the Tomono-hana (Myoken-zaki), about 400 m NW of the contact point of the two roads at) Iwaya, Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture (33 °56'N, 130 °41'E)

Yamaga Formation

Oligocene

(*Pitar ashiyaensis* (Nagao) by Hatai and Nisiyama (1952))

***Pitaria Itoi* Makiyama, 1926**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 2, no. 3, art. 8, p. 159, pl. 13, fig. 7

Syntype: Geol. Inst., Kyoto Imp. Univ. no. ?

Kanchindo, North Korea

Mankodo and Kanchindo Formations

Miocene

(*Neogenella itoi* (Makiyama))

***Pitaria kyushuensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 70, pl. 12, figs. 1, 1a

Holotype: GS no. 36238, Paratype: GS nos. 36246 (pl. 12, figs. 2-5), 36256 (pl. 12, figs. 6, 10), 26301 (pl. 12, fig. 8), 36225 (pl. 12, fig. 7)

(Southern coast about 300 m S of the hill (149 m) on) Okinoshima, Iojima-mura, Nishisonogi-gun, Nagasaki Prefecture (32 °41'14"N, 129 °46'52"E)

Okinoshima

Upper Eocene

(*Pitar kyushuensis* (Nagao) by Hatai and Nisiyama (1952))

***Pitaria matsumotoi* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 73, pl. 13, figs. 4, 4a

Holotype: GS no. 36241, Paratype: GS no. 36251 (pl. 11, figs. 17)

(Sea cliff facing the mouth of Ongagawa, about 400 m NW of) Yamaga, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33 °

53'56"N, 130 °39'54"E)

Yamaga Formation

Oligocene

(*Pitar matsumotoi* (Nagao) by Hatai and Nisiyama (1952))

***Pitaria takashimaensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 72, pl. 12, figs. 11, 11a-b

Holotype: GS no. 36300

(Near the top of the hill (92m), about 300 m W of) Aabo, Koyagi-jima, Koyagi-mura, Nishisonogi-gun, Nagasaki Prefecture (32 °40'54"N, 129 °48'E)

Okinoshima Formation

Upper Eocene

(*Pitar takashimaensis* (Nagao) by Hatai and Nisiyama (1952))

***Pitaria yokoyamai* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 74, pl. 11, figs. 10, 10a

Holotype: GS no. 36443

(Sea cliff at a point about 300 m SE of the contact point of the two roads at Tokuman, east of) Oshima, Oshima-cho, Nishisonogi-gun, Nagasaki Prefecture (33 °01'44"N, 129 °36'45"E)

Kakinoura Formation

Oligocene

(*Pitar yokoyamai* (Nagao) by Hatai and Nisiyama (1952))

Placamen tiara (Dillwyn, 1817) reported by Shuto (1960) from the Pliocene Takanabe Formation, Miyazaki Prefecture

Placopecten akihoensis (Matsumoto) reported by Masuda (1952) from the Miocene Moniwa Formation, Miyagi Prefecture (*Nipponopecten akihoensis* (Matsumoto) by Masuda and Noda (1976))

***Placopecten mai* Masuda and Huang, 1993**

Jour. Geol. Soc. China, vol. 36, no. 3, p. 266, pl. 3, figs. 1-6

Syntype: NTUM no. 93-067

Loc. no. KS 180, Chunghukeng Formation in the Peikangchi section

Chunghukeng Formation

Miocene

***Placopecten nomurai* Masuda, 1953**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 12, p. 83, pl. 8, figs. 1a-7

Holotype: DGS no. 1041 shifted to IGPS no. 90553 (figs. 1a-c) Stream floor of small tributary of the Natori River at Moniwa, Oide-mura, Natori-gun (Moinwa, Taihaku-ku, Sendai City), Miyagi Prefecture (38 °13'N, 140 °47'E)

Moniwa Formation

Miocene

***Placopecten osawanoensis* (Tsuda)** reported by Masuda (1962) from the Miocene Kurosedani Formation, Toyama Prefecture; see ***Pecten (Placopecten) osawanoensis* Tsuda, 1959**

***Placopecten protomollitus* (Nomura)** reported by Masuda (1953) from the Miocene Tanosawa Formation, Aomori Prefecture; see ***Pecten (Pecten) protomollitus* Nomura, 1935**

***Placopecten setanaensis* (Kubota)** reported by Masuda (1962) from the Miocene Imagane Formation, Hokkaido; see ***Pecten (Placopecten) setanaensis* Kubota, 1950**

***Placopecten taiwanensis* Masuda and Huang, 1993**

Jour. Geol. Soc. China, vol. 36, no. 3, p. 265, pl. 3, figs. 7-14

Holotype: NTUM no. 93-075

Loc. no. KS 601, Shihmen Formation in the Wuchi section, Taiwan

Shihmen Formation

Miocene

***Placopecten todaniensis* Itoigawa and Nishikawa, 1976**

Bull. Mizunami Fossil Mus., no. 3, p. 145, pl. 33, figs. 5, 6

Holotype: MFM no. 20001, Paratype: MFM no. 20002

Todani, Osa-cho, Atetsu-gun, Okayama Prefecture (Loc. no. U9)

Bihoku Group; lowermost part of the upper member of the group

Miocene

***Placopecten wakuyaensis* Masuda, 1956**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 23, pl. 3, figs. 1a-4

Holotype: DGS no. 3003 shifted to IGPS no. 90596 (figs. 1a-b),

Paratype: DGS no. 3004 shifted to IGPS no. ?

Oido, Wakuya-machi, Toda-gun, Miyagi Prefecture (38 ° 32'01"N, 141 °08'04"E)

Oido Formation

Miocene

(***Nipponopecten wakuyaensis* (Masuda)** by Masuda and Noda (1976))

***Placunanomia ingens* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 1, p. 16, pl. 4, figs. 1a-b

Holotype: GT no. ?

Shigarami (A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun, Nagano Prefecture; 36 ° 40'N, 138 °04'E)

(Shigarami Formation)

Pliocene

(Synonymous with ***Monia macroschisma* (Deshayes)** by Hatai and Nisiyama (1952))

***Platyodon nipponica* Uozumi and Fujie, 1956**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 3, p. 361, pl.

4, figs. 1-6, pl. 5, figs. 4-6

Holotype: UH no. 12146 (pl. 4, figs. 4, 5), Paratype: UH nos. 12147 (pl. 4, fig. 6), 12148 (pl. 5, figs. 4-6)

Right outcrop about 12 km upstream of the Haboro-gawa, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido Chikubetsu Formation

Miocene

***Plectodon (Plectodon) ligula* (Yokoyama)** reported by Sawada (1962) from the Pliocene Soibetsugawa Formation, Hokkaido; see ***Cuspidaria ligula* Yokoyama, 1922**

***Pleuromeris minoensis* Itoigawa 1974** reported by Itoigawa

(1974); miss print; see ***Venericardai minoensis* Itoigawa, 1960**

(***Venericardia (Pleuromeris) minoensis* (Itoigawa)** by Masuda and Noda (1976))

***Plicatula tuberculosa* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 62, pl. 1, figs. 2

Holotype: IGPS no. 45030

Mud-volcanoes at Konsuihei, Kyoshito, Okayama-gun, Takao-shu, Taiwan

Unknown

***Pododesmus macroschismus* (Deshayes)** reported by Yokoyama (1926) from the Pliocene Sawane Formation, Niigata Prefecture;

***Anomia macroschismus* Deshayes, 1839**

***Pododesmus (Monia) macroschisma* (Deshayes) var. *ezoanus* Kanehara, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, P. 136, pl. 15, fig. 1

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Yunosawa, Kuromatsunai-cho, Suttu-gun, Shiribeshi Province, Hokkaido (42 °37'05"N, 140 °17'02"E)

Setana Formation

Plio-Pleistocene (Pleistocene)

***Pododesmus (Monia) noharai* Noda, 1971**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 81, p. 39, pl. 7, fig. 17

Holotype: IGPS no. 86762

Loc. No. 109, west of Kogachi, Haneji-son (Nago City), Okinawa-jima, Okinawa Prefecture

Haneji Formation

Pliocene (early Pleistocene)

(***Monia noharai* (Noda)** by Masuda and Noda (1976))

***Polymesoda (Geloina) bibaiensis* Nagao and Otatsume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 4, pl. 1 (1), fig. 5

Holotype: UH no. 5923

Mitsubishi-Bibai colliery, Bibai City, Hokkaido

Wakkanae Formation
Oligocene (Eocene)

***Polymesoda (Geloina) hokkidoensis* Nagao and Otatsume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 2, pl. 1 (1), figs. 1, 1a, 2-4; pl. 2 (2), figs. 1-7

Holotype: UH no. 5912

Futamata, Kamisunagawa colliery, Sunagawa-machi, Sorachi-gun (Sunagawa City), Hokkaido

Wakkanabe Formation

Oligocene (Eocene)

***Polymesoda (Geloina) takaai* Nagao and Otatsume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 5, pl. 2 (2), figs. 8, 8a, pl. 3 (3), figs. 1-3

Holotype: UH no. 9296

Akamanosawa, Akabira City, Hokkaido

Wakkanabe Formation

Oligocene (Eocene)

***Polynemamussium alaskense* (Dall)** reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture; ***Pecten (Pseudoamussium ?) alaskense* Dall, 1872**

***Polynemamussium intuscostatum* (Yokoyama)** reported by Sakagami et al. (1966) from the Pliocene (Pleistocene) Tomikawa Formation, Hokkaido; see ***Pecten intuscostatus* Yokoyama, 1920**

***Polynemamussium masagoi* Kotaka and Noda, 1967**

Saito Ho-on Kai Mus., Res. Bull., no. 36, p. 39, pl. 1, figs. 1-6, 8, 11

Holotype: IGPS no. 90755 (figs. 1-3)

Upstream of the Moriai-zawa, about 800 m from the junction with the Nakano-gawa, Ogawara, Kuroishi City, Aomori Prefecture

Ogawara Formation

Miocene

***Polynemamussium yasudae* Masuda, 1962**

Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.), vol. 33, no. 2, p. 156, pl. 18, figs. 9a-11

Holotype: DGS no. 3299 shifted to IGPS no. 90602 (figs. 9a-b)

Road-side cutting, about 500 m N of the Kogane shrine, N of Koganebasama, Motowakuya, Wakuya-machi, Toda-gun, Miyagi Prefecture (38°33'40"N, 141°08'23"E)

Oido Formation

Miocene

***Poromya okinawana* Noda, 1988**

Sci. Re. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 79, pl. 19, figs. 7a-b

Holotype: IGUT no. 11306

Loc. no. 87-33-3, cliff, about 500 m SW of Kanehisa,

Sashiki-cho, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

(Locality was not described in original paper; author first noted herein)

***Poromya osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 73, pl. 2, figs. 1a-b

Holotype: JC no. 1400011

Kashio (Loc. No. 48), Yatsuo-machi, Nei-gun, Toyama Prefecture

Kashio Alternation of the Kurosedani Formation

Miocene

***Poromya yamaokana* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 122, pl. 15, fig. 2

Holotype: SM no. 6901

Okada (Cliff bordering stream immediately NW of Okada, Yamaoka-mura, Higashishirakawa-gun, Fukushima Prefecture; 37°01'N, 140°26'03"E)

Tanagura (Kubota) Formation

Miocene

***Portlandia (Megayoldia) aokii* (Nomura and Zinbo)** reported by Uozumi (1957) from the Miocene Furukuchi Formation, Yamagata Prefecture; see ***Yoldia aokii* Nomura and Zinbo, 1935** (synonymous with ***Portlandia (Portlandella) hurukutiensis* (Nomura and Zinbo)** by Oyama (1961: Bull. Geol. Surv., vol. 12, no. 5)

***Portlandia (Megayoldia) breviscapa* (Yokoyama)** reported by Uozumi (1957) from the Eocene Shiraki Formation, Hokkaido; see ***Yoldia breviscapa* Yokoyama, 1932**

***Portlandia (Portlandella) chehalisensis* (Arnold)** reported by Kanno (1960) from the Oligocene (Miocene) Ushikubitoge Formation, Saitama Prefecture; ***Malletia chehalisensis* Arnold, 1908** (Proc. U. S. National Mus., vol. 34, p. 365, pl. 33, figs. 9, 9a) described from the Oligocene strata at Porter, Chehalis County, Washington, USA

***Portlandia (Portlandella) enaensis* Kamada, 1962**

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 51, pl. 1, figs. 28a-30

Holotype: IGPS no. 79377 (figs. 28a-29)

Hieda, Shimokajiro, Ena-machi, Iwaki City, Fukushima Prefecture

Honya Formation

Miocene

***Portlandia (Megayoldia) gratiosa* (Yokoyama)** reported by Uozumi (1957) from the Miocene Fujina Formation, Shimane Prefecture; see ***Yoldia gratiosa* Yokoyama, 1923**

***Portlandia (Hataiyoldia) hayasakai* Uozumi** reported by Uozumi (1966) from the Miocene Asahi Formation, Hokkaido; see ***Portlandia (Portlandella) tokunagai var hayasakai* Uozumi, 1957**

***Portlandia (Portlandella) hurukutiensis* (Nomura and Zinbo)** reported by Uozumi (1957) from the Miocene Furukuchi Formation, Yamagata Prefecture; ***Yoldia hurukutiensis* Nomura and Zinbo, 1935**

***Portlandia (Portlandella) japonica* (Adams and Reeve)** reported by Ozaki (1958) from the Pliocene Iioka Formation, Chiba Prefecture; ***Nuculana japonica* Adams et Reeve, 1850**

***Portlandia (Portlandella) kakimii* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 569, pl. 2, figs. 1, 1a-b, text-fig. 3

Holotype: UH no. 12252 (figs. 1, 1a-b), Paratype: UH no. 12251 The junction of the Nakayama-zawa and Tobetsu-gawa, Tobetsu-machi, Ishikari-gun, Ishikari Province, Hokkaido Morai Formation
Miocene

***Portlandia kattoi* Ozaki, 1965**

Bull. Nat. Sci. Mus., vol. 3, no. 1, p. 3, pl. 1, fig. 9

Holotype: NSM no. 4369

Nisinotani, Nobori, Hane Town (machi), Aki-gun, Kochi Prefecture

Nobori Formation

Miocene (Pliocene)

***Portlanida (Portlandella) lischkei* (Smith)** reported by Oyama (1951) from the Pliocene Sawane Formation, Niigata Prefecture; ***Yoldia lischkei* Smith, 1885**

***Portlandia (Portlandella) lucidaeformis* (Nomura and Zinbo)** reported by Uozumi (1957) from the Miocene Furukuchi Formation, Yamagata Prefecture; see ***Yoldia lucidaeformis* Nomura and Zinbo, 1935**

***Portlandia (Portlandella) mitsuganoensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 60, pl. 1, figs. 8a-b

Holotype: ESN no. 30003

Loc. No. K73, Nakanomura, Hakusan-machi, Ichishi-gun, Mie Prefecture

Oi Formation

Miocene

***Portlandia (Portlandella) ovata* (Takeda)** reported by Uozumi (1957) from the Oligocene Onbetsu and Poronai Formations, Hokkaido; see ***Yoldia ovata* Takeda, 1953**

***Portlandia scapha* (Yokoyama)** reported by Iwai (1961) from the Miocene Ainaigawa Formation, Aomori Prefecture; ***Yoldia scapha* Yokoyama, 1926**

***Portlandia scapha hirosakiensis* Iwai, 1959**

Bull. Educ. Fac., Hirosaki Univ., no. 5, p. 53, pl. 2, figs. 10-12
Holotype: Hirosaki Univ. no. ? (fig. 10), Paratype: Hirosaki Univ. no. ? (figs. 11, 12)

Cliff of the Iwaki River near the bridge at Yonegafukuro, Hirosaki City, Aomori Prefecture

Higashimeya Formation

Pliocene (early Pleistocene)

(***Portlandia (Portlandella) hirosakiensis* Iwai** by Masuda and Noda (1976))

***Portlandia (Megayoldia) scaphoides* (Nagao)** reported by Uozumi (1957) from the Oligocene Yamaga Formation, Fukuoka Prefecture; ***Yoldia scaphoides* Nagao, 1928**

***Portlandia (Megayoldia) thraciaeformis* (Storer)** reported by Uozumi (1955) from the Pliocene Takikawa Formation, Hokkaido; ***Yoldia thraciaeformis* Storer, 1838**

***Portlandia (Portlandella) tokunagai* (Yokoyama)** reported by Uozumi (1957) from the Miocene Kamenoo Formation, Fukushima Prefecture; see ***Yoldia tokunagai* Yokoyama, 1925**

***Portlandia (Portlandella) tokunagai var. hayasakai* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 570, pl. 2, fig. 6-9, 15, 15a

Holotype: UH no. 11207 (figs. 7, 7a), Paratype: UH no. 12257, 12250, 11207, 12234

Upper stream of the Horonai-gawa, Asashi Coal-Mine, Iwamizawa City, Ishikari Province, Hokkaido

Takinoue Formation

Miocene

(***Portlandia (Hataiyoldia) hayasakai* Uozumi** by Masuda and Noda (1976))

***Portlandia (Megayoldia) tsuruensis* Sugita, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 47, p. 286, pl. 44, figs. 2-6

Holotype: UT no. ? (figs. 4, 5)

Loc. 3, Yasawa, Uenohara-machi, Kitatsuru-gun, Yamanashi Prefecture

Shimada Formation

Miocene

***Portlandia (Portlandella) tsushimaensis* Masuda, 1970**

Mem. Nat. Sci. Mus., no. 3, p. 30, pl. 5, figs. 2, 3

Holotype: NSM no. P1-7299 (fig. 2), Paratype: NSM no. P1-7323 (fig. 3).

Roadside cutting at Shinzaka, Mitsushima-cho, Shimoagata-gun,

Nagasaki Prefecture
Taishu Group
Oligocene

Portlandia (Portlandella) watasei (Kanehara) reported by Mizuno (1954) from the Oligocene (Eocene) Poronai Formation, Hokkaido; see ***Yoldia watasei Kanehara, 1937***

Portlandia (Portlandella) watasei ogasawarai Uozumi, 1957
Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 567, pl. 1, figs. 9-11
Holotype: UH no. 122703 (fig. 11), Paratypes: UH nos. 122704 (fig. 9), 122705 (fig. 10), 122706
The boring-well of the Sumitomo Coal Mining Company in the Sankonosawa, Akabira City, Ishikari Province, Hokkaido; Paratype, upper stream of the Ichino-sawa, Utashinai-machi, Sorachi-gun, Ishikari Province, Hokkaido
Upper *Corbicula* (Akabira) Formation
Oligocene (Eocene)

Portlandia (Portlandella) watasei semiovata Uozumi, 1857
Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 566, pl. 3, figs. 5, 9
Holotype: UH no. 12294 (fig. 9), Paratype: UH no. 12290 (fig. 5)
Upper stream of the Teshibetsu-gawa, Yubetsu Coal Mine, Akan-mura (-cho), Akan-gun, Kushiro Province, Hokkaido; Paratype, cliff of the Ikushunbetsu-gawa, near Tomatsu, Mikasa-machi, Sorachi-gun (Mikasa City), Ishikari Province, Hokkaido
Onbetsu Formation; Poronai Formation (paratype)
Oligocene (late Eocene)
(***Portlandia wataei semiovata Uozumi*** by Masuda and Noda (1976))

Portlandia (Megayoldia) yokouchii Tanaka, 1959
Bull. Fac. Educ., Shinshu Univ., no. 10, p. 74, pl. 1, fig. 13
Holotype: Shinshu Univ., no. 148
Road side cliff of Kamabuta, Akashina-machi, Higashichikura-gun, Nagano Prefecture (36°20'30"N, 137°57'41"E)
Aoki Formation
Miocene

Portlandia (Megayoldia) yotsukurensis Uozumi, 1957
Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 579, pl. 1, figs. 3, 4, pl. 7, fig. 13 (reproduction from Makiyama's original figure of *Yoldia laudabilis*, 1934)
Holotype: UH no. 931 (pl. 1, fig. 3), Paratype: UH no. 12256 (pl. 1, fig. 4)
Sea-cliff of Takura-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture; Paratype, near the Yasaka-Shrine, Tuzura, Uchigo-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture
Asagai Formation
Oligocene

Promentellum orientale (Adams and Reeve) reported by Hayasaka (1969) from the Miocene Kawachi Formation, Kagoshima Prefecture (***Limaria basilianica orientalis (Adams and Reeve)*** by Hatai and Masuda (1976))

Propeamussium (Propeamussium) circularis Omori, 1955
Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 4, no. 27, p. 16, pl. 1, figs. 10-12
Holotype: TKD no. 5940 (fig. 11)
Komagome, Uchiyama-mura, Minamisaku-gun, Nagano Prefecture
Komagome Formation
Oligocene (early Miocene?)

Propeamussium (Propeamussium) tateiwai Kanehara, 1936
Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 33, pl. 10, figs. 5, 6
Holotype: GT no. ? (fig. 5), Paratype: GT no. ? (fig. 6)
Ennichi-men, Masho-do, Keizan, South Korea
Ennichi Formation
Miocene
(***Propeamussium tateiwai Kanehara*** by Masuda (1962))

Propeamussium transnipponica (Mochizuki, MS), Otuka, 1935
Bull. Earthq. Res. Inst., vol. 13, pt. 4, p. 55, fig. 145
Holotype: unknown
Formation and locality not stated (Probably from the Miocene shale formation developed in Toyama and Ishikawa Prefectures, where this species was reported to occur)
(Invalid because of no description by Hatai and Nisiyama (1952))

Protothaca (Callithaca) adamsi (Reeve) reported by Chinzei (1961) from the Pliocene Togawa Formation, Aomori Prefecture; ***Venus adamsi Reeve, 1863***

Protothaca hanzawai Ozaki, 1958
Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 130, pl. 9, figs. 5, 6
Holotype: NSM no. 4425
Cape Inuwaka, Choshi City, Chiba Prefecture
Naarai Formation
Pliocene

Protothaca nodai Amano, 1983
Sci. Rep., Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 4, p. 52, pl. 3, figs. 5, 9, 13
Holotype: IGUT no. 15371, Paratype: IGUT no. 15372-1
Stream-side cliff at about 350 m upstream of Shimoyudoro-sawa, Rumoi City, Hokkaido
Togeshita Formation
Late Miocene

***Protothaca sakaensis* Makiyama, 1927**

Chikyū (Globe), vol. 8, np. 2, p. 187, pl. 3, figs. 5, 5a

Holotype: GK no. ?

(Small valley between Hisato-mura and about 500 m M of) Shiroshita, Sakae-mura, Kamiminouchi-gun, Nagano Prefecture (36°36.5'N, 138°03'E)

Ogawa Formation

Miocene

Protothaca tateiwai* (Makiyama)** reported by Mizuno (1964) from the Miocene Isomatsu Formation, Aomori Prefecture; seeChione tateiwai* Makiyama, 1926*****Protothaca yanagawana* Nomura and Zinbo, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 338, pl. 20, figs. 10a-b

Holotype: SM no. 7950

Yanagawa-machi (River cliff of the Hirosegawa, at southeastern end of Yanagawa Park, a tributary of the Abukuma River, Yanagawa-machi, Date-gun, Fukushima Prefecture; 37°51'05"N, 140°36'05"E)

Yanagawa Formation

Miocene

***Psammobia commoda* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 1, part 1, p. 12, pl. 3, fig. 2

Holotype: UT no. ?

Togakushi, Kamminouchi-gun, Nagano Prefecture

Togakushi Bed (Shigarami Formation)

Pliocene

***Psammocola sekiaensis* Akutsu, 1964**Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 287, pl. 60, fig. 6

Holotype: IGPS no. 85511

Sekiya along the Hoki River, Shiobara-machi, Shioya-gun, Tochigi Prefecture

Kanomatatazawa Formation

Miocene (late Miocene)

(*Gari* (*Gobraeus*) *sekiaensis* (Akutsu) by Masuda and Noda (1976))***Psammotreta* (*Tellinimactra*) *tsukubaensis* Aoki and Baba, 1987**

Ann. Re., Inst. Geosci., Univ. Tsukuba, no. 13, p. 77, figs. 1-2

Holotype: IGUT no. ?

Exposure 1.5 km N of Kowatari, Takasai, Shimotsuma City, Ibaraki Prefecture

Narita Formation

Pleistocene

***Pseudamiantis pinguis* Iwasaki, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 51, p. 96, pl. 15,

figs. 1-3

Holotype: CM no. 8776 (figs. 1, 2), Paratype: CM nos. 8777 (fig. 3, Loc. Hattomak), 8778 (fig. 1, loc. Nishigoto), 8781

Nishigoto (Type locality) and Hattomaki (Paratype),

Hanawa-machi, Higashishirakawa-gun, Fukushima Prefecture

Kubota Formation

Miocene

Pseudamiantis tauyensis* (Yokoyama)** reported by Iwasaki (1963) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture and Pliocene (Pleistocene) Hanaishi Formation, Hokkaido, and designated lectotype Kf no. 4334a-b and syntype Kf no. 82a; see ***Meretrix tauyensis* Yokoyama, 1927**Pseudamysium* (*Hyalopecten*) *besshoense* Kuroda, 1931**

In Honma F. ed., Shinshū Chūbu Chisitsushi (Geology of central Shinano), p. 39, pl. 12, fig. 99

Holotype: GK no. ?

(200 m S of Tazawa Hotspring, Aoki-mura, Chiisagata-gun, Nagano Prefecture; 36°22'N, 138°06'E)

Bessho Formation

Miocene

(Synonymous with ***Delectopecten peckhami* (Gabb)** by Masuda (1962))***Pseudogrammatodon dalli* (Smith)** reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture (***Porterius dalli* (Smith)** by Masuda and Noda (1976)); ***Arca* (*Macrodon*) *dalli* Smith, 1885*****Pseudogrammatodon dalli obliquata* (Yokoyama)** reported by Kanehara (1942) from the Plio-Pleistocene (Pleistocene) Shibikawa Formation, Akita Prefecture (***Porterius dalli obliqueata* (Yokoyama)** by Masuda and Noda (1976)); see ***Parallelodon obliquataus* Yokoyama, 1920*****Pseudogrammatodon pacificus* Nomura and Zinbo, 1934**Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 1523(45), pl. 5 (1), figs. 6a-7b

Holotype: IGPS no. 50341 (fig. 6), Paratype: IGPS no. ? (fig. 7)

Kamikatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryūkyū Limestone

Pleistocene

(*Samacar strabo pacifica* (Nomura and Zinbo) by Habe (1977))***Pseudopythina minoensis* Itoigawa, 1960**Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 270, pl. 2, fig. 3a-b

Holotype: ESN no. 20020

Shukunobora (S41), Hiyoshi-machi, Mizunami City, Gifu Prefecture

Shunonohora Sandstone of the Oidawara Formation

Miocene

(*Squillaconcha minoensis* (Itoigawa) by Masuda and Noda (1976))

Pteria coturnix (Dunker) reported by Noda (1971) from the Pliocene (Pleistocene) Haneji Formation, Okinawa Prefecture; *Avicula conturnix* Dunker, 1880

Pteria (Austropteria) loveni (Dunker) reported by Shibata (1974) from the Miocene Shukunohora Formation, Gifu Prefecture; *Avicula loveni* Dunker, 1872

Pteria sunakozakaensis Ogasawara, 1976

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 46, no. 2, p. 40, pl. 11, figs. 15, 16

Holotype: IGCP no. 95008 (fig. 16), Paratype: IGPS no. 95009-1 (fig. 16)

Loc. no. Su-01: River side cliff of Asano-gawa at Higashi-Ichise, Kanazawa City, Ishikawa Prefecture

Sunakozaka Formation

Miocene (early middle Miocene)

Raeta pulchella (Adams and Reeve) reported by Ozaki (1958) from the Pliocene Iioka Formation, Chiba Prefecture; *Poromya pulchella* Adams and Reeve, 1850

Ribriarca n. gen. Noda, 1980, Type species: *Ribriarca okinawaensis* Noda, 1980 n. sp. (Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 75, pl. 12, figs. 10a-c) described from the Pliocene Shinzato Formation, Okinawa Prefecture

Rexithaerus shiratoriensis Matsubara, 1994

Saito Ho-on Kai Mus. Res. Bull., no. 62, p. 24, pl. 1, figs. 1, 2, 3a-5b, pl. 2, figs. 1a-4

Holotype: IGPS no. 102562, Paratype: IGPS nos. 102563-1, -10 A small tributary of the Shiratorigawa River, south of Shiratori, Ninohe City, Iwate Prefecture

Kadonosaw Formation

Latest early Miocene

Ribriarca okinawaensis Noda, 1980

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 75, pl. 12, figs. 10a-c

Holotype: IGUT no. 10315

Loc. no. 034: Southern cliff of Shure Golf Links, about 1 km NW of Kuteken, Chinen-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

Robaia robai (Kuroda) identified by Habe and Ito (1965) and reported by Amano (1992: Venus, Vol. 50, no. 4, p. 289, fig. 2) from the Middle Miocene Ishiizawa Formation, Hokkaido

Rochefortia obsoleteoradiata Nomura and Zinbo, 1936

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 242 (14), pl. 11 (1), figs. 12a-b

Holotype: IGPS no. 51351

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

Rochefortia yokoyamai Makiyama, 1927

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 42, pl. 2, fig. 7

Holotype: GK no. 10

(Valley about 350 m NW of) Dainichi, Ugari-mura, Suchi-gun (Fukuroi City), Shizuoka Prefecture (34°38'07"N, 137°56'E)

Dainichi Formation

Pliocene

Ruditapes miyamurensis (Itoigawa) reported by Itoigawa (1974) from the Miocene Hida and Yamanouchi Formations, Gifu Prefecture (*Tapes (Ruditapes) miyamurensis* Itoigawa by Masud and Noda (1976))

Ryukyuleda Noda, n. gen., 1992: Type species *Ryukyuleda japonica* Noda, 1992 (Venus, vol. 51, nos. 1 & 2, p. 49, pl. 1, figs. 1a-4.) described from the Pliocene Shinzato Formation, Okinawa Prefecture

Ryukyuleda japonica Noda, 1992

Venus, vol. 51, nos. 1 & 2, p. 49, pl. 1, figs. 1a-4

Holotype: IGUT no. 11613

Loc. no. 83-11-3; Small road-side cliff, about 500 m SE of Teruma, Yonagusuku-son, Nakagami-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

Saccella confusa (Hanley) reported by Tanaka (1959) from the Miocene Moriya Formation, Nagano Prefecture; *Leda cofusa* Hanley, 1860

Saccella confusa kongiensis Otuka reported by Tanaka (1959) (miss print of (Otuka) by Masuda and Noda (1976)); see *Nuculana confusa kongiensis* Otuka, 1934

Saccella confusa toyomaensis Kamada, 1962

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 50, pl. 2, figs. 1-5

Holotype: IGPS no. 79376 (figs. 1, 2)

Numanouchi Harbor, Toyoma-machi, Taira City (Iwaki City), Fukushima Prefecture

Numanouchi Formation

Miocene

Saccella gordonis (Yokoyama) reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma

Formation, Ishikawa Prefecture; see *Leda gordonis* Yokoyama, 1920

***Saccella hokkaidoensis* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 595: Type; *Nuculana* sp. form *hokkaidoensis* Takeda (1953; Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 66, pl. 6, figs. 10, 12; *Nuculana hokkaidoensis* Takeda (MS), Ogasawara, 1955, p. 28, text-fig. 2) Holotype: UH no. 11176

In the boring core at the upper stream of Ichinosawa, west of Mt. Kamui, Utashinai-machi, Sorachi-gun, Hokkaido

Hiragishi Formation

Oligocene

***Saccella konnoi* Hatai and Masuda, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 259, pl. 40, figs. 3-5

Holotype: DGS, no. 4235 shifted to IGPS, no. 90427 (fig. 3)

Loc. No. 4, river cliff, about 600 m W of Godo, Higashimatsuyama City, Saitama Prefecture (36°04'56"N, 139°19'16"E)

Tokigawa Formation

Miocene

Saccella miensis (Araki) reported by Shibata (1970) from the Miocene Oi Formation, Mie Prefecture; see *Nuculana* (*Saccella*) *confusa miensis* Araki, 1960

***Saccella miensis attenuata* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 17, pl. 6, figs. 4a-6

Holotype: MFM no. 10004, Paratype: MFM nos. 10005, 10006

West of Sakurada, Toki-cho, Mizunami City, Gifu Prefecture

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

***Saccella minoensis* Itoigawa, 1960**

Jour. Earth Sci., Nagoya Univ., vol. 8, no. 2, p. 263, pl. 1, fig. 1

Holotype: JC no. 20001, Paratype: ESN no. 20002 (same locality)

Hazama (S31-4), (Akeyo-machi, Togari), Mizunami City, Gifu Prefecture

Yamanouchi facies of the Akeyo Formation

Miocene (late early Miocene)

Saccella nagaoui (Takeda) reported by Tanaka (1961) from the Miocene Moriya Formation, Nagano Prefecture; see *Nuculana nagaoui* Takeda, 1953

***Saccella omorii* Tanaka, 1959**

Bull. Fac. Educ., Shinshu Univ., no. 10, p. 70, pl. 1, figs. 27-34

Holotype: Shinshu Univ. no. 126 (figs. 27, 28)

Cliff along the stream of Komatsu-zawa, Tazawa-ku, Toyoshima-machi, Minamiazumi-gun, Nagano Prefecture (36°08'48"N, 137°57'50"E)

Aoki Formation

Miocene

***Saccella saikaiensis* Masuda, 1966**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 64, p. 322, pl. 35, figs. 1a-3

Holotype: IGPS no. 90088 (figs. 1a-b)

Loc. No. 23, river cliff, about 1 km SES of Mukaiyama, Suzu City, Ishikawa Prefecture; 37°28'05"N, 137°06'39"E.

Higashi-Innai Formation

Miocene

Saccella sematensis (Suzuki and Ishizuka) reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture; *Nuculana sematensis* Suzuki and Ishizuka, 1943 (Venus, vol. 13, nos. 1-4, p. 38-64, pls. 1-2)

Sanguinolaria (*Nuttallia*) *commoda* (Yokoyama) reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture: see *Psammobia commoda* Yokoyama, 1925 (p. 12, pl. 3, fig. 2) (*Soletelina commoda* Yokoyama by Hatai and Nisiyama (1952))

Sanguinolaria (*Soletellina*) *minoensis* (Yokoyama) reported by Otuka (1938) from the Miocene Shobara Formation, Hyogo Prefecture; see *Soletellina minoensis* Yokoyama, 1926

Sanguinolaria (*Nuttallia*) *olivacea* (Jay) reported by Nomura (1938) from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture (*Nuttallia olivacea* (Jay)); *Psammobia olivacea* Jay, 1857

***Sanguinolaria uwadokoi* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 58, pl. 3, fig. 7

Holotype: GT no. ?

(Eastern slope of the hill, about 900 m NE of) Kurosawa railway station on the Okoku line, Sannai-mura, Hiraga-gun, Akita Prefecture (39°16'50"N, 140°42'31"E)

Kurosawa Formation

Miocene

(*Gobraes uwadokoi* (Otuka) by Ogasawara et al (1986))

***Sarepta fujiyamae* Masuda, 1970**

Mem. Nat. Sci. Mus., no. 3, p. 29, pl. 5, fig. 1

Holotype: NSM no. P1-7309

Road side cutting at Kusagahama, Mitsushima-cho, Shimoagata-gun, Nagasaki Prefecture

Taishu Group

Oligocene

***Sarepta shimokawarae* Kanno and Ogawa, 1964**

Sci. Rep., Tokyo Kyoiku Daidaku, Sec. C, vol. 8, no. 81, p. 284, pl. 1, figs. 5, 6

Holotype: TKD no. 6588 (fig. 5), Paratype: TKD no. 6589 (fig.

6)
 Loc. no. 49 (about 1500 m SW of Momijiyama, Yubari City, Hokkaido)
 Takinoue Formation; upper part
 Miocene

***Saxidomus ezoensis* Kanno, 1962**

Sci. Rep., Tokyo Kyoiku Daidaku, Sec. C, vol. 8, no. 73, p. 60, pl. 5, figs. 7a-c

Holotype: TKD no. 6125

Cliff of the Tshibetsu-River, about 200 m down stream of the bridge of the Setana Line near the Hanaishi Station, Imagane-machi, Setana-gun, Hiyama Province, Hokkaido
 Setana Formation

Pliocene (early Pleistocene)

(*Pseudamiantis tauyensis* (Yokoyama))

***Saxidomus giganteus* (Deshayes) reported by Nomura (1935) from the Miocene Tanosawa Formation, Aomori Prefecture; *Venerupis gigantea* Deshayes, 1839**

***Saxidomus nomurai* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 133, Type; *Saxidomus nuttalli*, Nomura and Hatai (1936; Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 127, pl. 4, fig. 9)

Holotype: SM no. 2668

Okada, (Cliff bordering stream immediately NW of Okada), Yamaoka-mura, Higashishirakawa-gun, Fukushima Prefecture (37°01'N, 140°26'03"E)

Tanagura Formation

Miocene

***Saxidomus purpuratus* (Sowerby) reported by Sawada (1962) from the Pliocene (Pleistocene) Nakanokawa Formation, Hokkaido; *Tapes purpurata* Sowerby, 1852**

***Saxolucina* (*Megaximus*) *k-hataii* (Otuka) reported by Itoigawa (1957) from the Miocene Tsukiyoshi Formation, Gifu Prefecture; see *Lucina k-hataii* Otuka, 1934**

***Saxolucina* (*Megaxinus*) *matsushitai* Matsumoto, 1971**

Bull. Nat. Sci. Mus. Tokyo, vol. 14, no. 4, p. 663, pl. 1, fig. 1, pl. 2, figs. 1-3

Holotype: NSM no. PM-6916 (pl. 1, fig. 1), Paratype: NSM-PM no. 6917 (pl. 2, fig. 1)

Loc. No. 14, on the road 1000 m W of Kurishima, Goka-mura (Kanaya-cho), Haibara-gun Shizuoka Prefecture

Wappazawa Formation

Oligocene

***Scapharca kakehataensis* (Hatai and Nisiyama) reported by Uozumi and Fujie (1966) from the Miocene Tsurikake Formation, Hokkaido (*Anadara* (*Hataiarca*) *kurosedaniensis* Hatai and Nisiyama by Masud and Noda (1976))**

***Securella carmanahensis* (Clark) reported by Kanno (1960) from the Oligocene (Miocene) Nenokami Formation, Saitama Prefecture; *Chione carmanahensis* Clark, 1925**

***Securella cryptolineata* (Clark) reported by Kanno (1960) from the Oligocene (Miocene) Nenokami Formation, Saitama Prefecture; *Chione cryptolineata* Clark, 1932**

***Securella postostriata* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 182, pl. 3, figs. 2a-4

Holotype: TKD no. 5767 (figs. 2a-b), Paratype: TKD no. 5768 (loc. No. 219)

Loc. No. 218, large erratic boulders, about 50 m E of a pass leading from Kakkaku to Chigaya, Yoshida-machi, Chichibu-gun, Saitama Prefecture: Paratype; loc. No. 219, a small valley cliff, about 300 m south of Kakkaku, Ogano-machi, Chichibu-gun, Saitama Prefecture

Nenokami Sandstone of the Hikokubo Group

Oligocene (early Miocene)

***Semele nisigotoensis* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 131, pl. 16, figs. 8, 9

Holotype: SM no. 2700.

Nisigoto (Road cliff about 2 km NW of Nisigoto on road leading to Kubota, Tsunetoyo-mura, Higashishirakawa-gun, Fukushima Prefecture; 36°59'03"N, 140°22'E)

Tanagura Formation

Miocene

***Semele tokaiensis* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 28, pl. 8, figs. 13a-14b

Holotype: MFM no. 10039, Paratype: MFM no. 10040

Nakahida, Toki City, Gifu Prefecture (loc. no. 111)

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

***Septifer* (*Mytilisepta*) *agiensis* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 136, pl. 5, fig. 13

Holotype: JC no. 1300157

Loc. No. 600, Hachiyato, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone

Miocene

***Septifer kitamiensis* Morita and Titova, 1996**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 63, no. 2, p. 147, pl. 7, fig. 11

Holotype: CBM no. PS-1772, Paratype: CBM nos. PS-1773

Loc. no. MT19, cliff at Shinmogami, along the Pontatsukobu-gawa, Tsubetsu-cho, Abashiri Province, Hokkaido

Sandy Siltstone Member of the Tatsukobu Formation
Oligocene

***Septifer keeni* Nomura, 1936**

Venus vol. 6, no. 4, p. 205, text-figs. 1a-1d

Holotype: SHM no. ?

Siogama (Shiogama) Bay, Miyagi Prefecture

Recent

***Septifer nagaoui* Oyama, 1951**

Miner. and Geol., vol. 4, nos. 1-2, p. 56. Type; *Mytilus hirsutus*, Yokoyama (1927, Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, pt. 4, p. 187, pl. 50, fig. 4)

Holotype: UT no. ?

Hakojima (in a course, yellowish weathered sandstone, Hoko-jima), Kanoura-mura, Nishisonogi-gun, Nagasaki Prefecture (Precise locality unknown: 32°52'N, 129°38'E)

Nishisonogi Formation

Oligocene

***Septifer sinelinikovae* Noda, 1992**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 62, nos. 1-2, p. 62, pl. 2, figs. 4a-6

Holotype: IGPS no. 100734, Paratype: IGPS nos. 100735, 100736

Loc. no. CS7, upper stream of the Shosambetsu River, Haboro-machi, Tomamae-gun, Rumoi Province, Hokkaido

Chikubetsu Formation, basal part

Miocene

***Septifer yokoyamai* Hatai and Nisiyama, 1952**

Sci. Rep. Tohoku Univ. 2nd Ser. (Geol.). Spec. Vol. no. 3, p. 93. Type; *Mytilus hirsutus*, Yokoyama (1927; Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, pt. 4, p. 187, pl. 50, figs. 3, 4)

Holotype: UT no. ?

Hakojima (in a course, yellowish weathered sandstone, Hoko-jima), Kanoura-mura, Nishisonogi-gun, Nagasaki Prefecture (Precise locality unknown: 32°52'N, 129°38'E)

Nishisonogi Formation

Oligocene

(Invalid; preoccupied by Oyama (1951): *Septifer nagaoui* Oyama by Masuda and Noda (1976))

***Serripes expansus* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 66, pl. 4, figs. 1, 2

Holotype: TKD no. 10136 (fig. 1), Paratype: TKD no. 10137 (fig. 2; same locality)

Loc. No. 1, Nanatsuishi, Oyamada-shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture; 36°47'05"N, 140°13'40"E

Kobana Formation

Miocene

Serripes fujinensis* (Yokoyama)** reported Otuka (1937) from the Miocene Chiraibetsu Formation, Hokkaido; also reported by Kanno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture (Serripes japonica* Noda** by Masuda and Noda (1976)); see ***Maetra fujinensis* Yokoyama, 1923** (Synonymous with ***Serripes laperousii* (Deshayes, 1839)** by Habe (1977))

Serripes groenlandica* (Bruguière)** reported by Kanno and Matsuno (1960) from the Miocene Chikubetsu Formation, Hokkaido (Serripes groenlandicus* (Bruguière)** by Masud and Noda (1976)); ***Cardium groenlandicum* Bruguière, 1789: *S. groenlandicus* (Mohr, 1786)** by Kafanov et al. (2000)

***Serripes hataii* Noda, 1962**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 5 (Kon'no Memorial Vol.), p. 224, pl. 37, fig. 3

Holotype: IGPS no. 74593

Iwaigawa, Kamikurosawa, Higihana-mura, Nishiiwai-gun, Iwate Prefecture

Shimokurosawa Formation

Miocene

***Serripes japonica* Noda, 1962**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 5 (Kon'no Memorial Vol.), p. 225, pl. 39, fig. 4

Holotype: IGPS no. 78680

Mukai, Saekawa (-mura), Mogami-gun, Yamagata Prefecture

Saekawa Formation

Miocene (Pliocene)

***Serripes laperousii* (Deshayes)** reported by Nomura (1935) from the Pliocene (Miocene) Hitosao Formation, Fukushima Prefecture; ***Cardium laperousii* Deshayes, 1839**

***Serripes makiyamai* (Yokoyama)** reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture; see ***Maetra makiyamai* Yokoyama, 1928**

***Serripes makiyamai nigamiensis* Noda, 1962**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 5 (Kon'no Memorial Vol.), p. 227, pl. 39, figs. 1a-c

Holotype: IGPS no. 78684

Nigami, Ooshima-mura, Higashikubiki-gun, Niigata Prefecture

Shiia Formation

Miocene

(***Serripes nigamiensis* Noda** by Masuda and Noda (1976))

***Serripes muraii* Noda and Tada, 1968**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 69, p. 202, pl. 22, fig. 22

Holotype: IGPS no. 88058

Loc. No. 2 (2.5 km NWW from the Takinoue Spa, along the Kakkonnda River, Shizukuishi-machi, Iwate-gun, Iwate

Prefecture
Yamatsuda Formation
Miocene

***Serripes notabilis nomurai* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 593, p. 55, pl. 3, fig. 10

Holotype: GT no. ?

(Path-side cutting a short distance S of the contact point of the two roads at) Naka-Nango, Sannai-mura, Hiraga-gun, Akita Prefecture (39°14'35"N, 140°40'48"E)

Kurosawa Formation
Miocene

Serripes pauperculum* (Yokoyama)** reported by Aoki (1959) from the Miocene Takahoko Formation, Aomori Prefecture (Serripes groenlandicus* (Bruguère)** by Masuda and Noda (1976))

***Serripes shiobarensis* Noda, 1962**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 5 (Kon'no Mem. Vol.), p. 228, pl. 39, fig. 5

Holotype: IGPS no. 78687

Cliff facing the Hokigawa Electric Power station along the Hoki River, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture Kanomatazawa Formation

Miocene

***Serripes triangularis* Noda, 1962**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 5 (Kon'no Mem. Vol.), p. 229, pl. 39, figs. 2, 3

Holotype: SHM no. 8410 (fig. 2)

Itanoki-sawa, Araki-mura (Mamurogawa-machi), Mogami-gun, Yamagata Prefecture

Mistumori Formation (Furukuchi Formation)
Miocene

***Serripes yokoyamai* Otuka, 1935**

Jour. Geol. Soc. Japan, vol. 42, no. 504, p. 603, pl. 2, figs. 3-6

Holotype: GT no. 2531 (figs. 3, 4)

North river cliff east of bridge southwest of Ogino, Yamago-mura, Yama-gun, Fukushima Prefecture (37°36'N, 139°44'E)

Hitosao Formation
Miocene

***Siliqua alata* (Broderip and Sowerby)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture; ***Solen alata* Broderip and Sowerby, 1829**

***Siliqua elliptica* Uozumi, 1966**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 13, no. 2, p. 132, pl. 10, fig. 11

Holotype: UH no. 11220 (fig. 11), Paratype: UH no. 11223

Upper stream of the northern branch of the Horomui-gawa, Asashi coal mine, Iwamizawa City, Ishikari Province, Hokkaido Asahi Formatio
Miocene

***Siliqua intoshiana* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 72, pl. 6, fig. 8-10

Holotype: GSJ no. ?

Intoshi, Shinchik-shu, Taiwan

Lower Byoritz Bed
Pliocene

***Siliqua minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 272, pl. 2, figs. 11, 12

Holotype: ESN no. 20025 (fig. 11), Paratype: ESN no. 20026 (same locality).

Kujiri (S11-1), (Izumi-machi, Kujiri), Toki City, Gifu Prefecture Kujiri facies of the Akeyo Formation

Miocene

***Siliqua pulchella* (Dunker)** reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Siliqua ryokamiensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 194, pl. 4, figs. 16-18

Holotype: TKD no. 5729 (fig. 18), Paratype: TKD no. 5730 (loc. No. 144)

Loc. No. 137, a mountain-side cliff, about 150 m N of a shrine, Mitage, Ryokami-mura, Chichibu-gun, Saitama Prefecture: Paratype; loc. No. 144, a small exposure of the right river side bank, Hashizume, Minano-machi, Chichibu-gun, Saitama Prefecture

Ushikubitoge Formation

Oligocene (early Miocene)

***Sinonovacula* sp.** reported by Masuda (1970) from the Oligocene Taishu Formation, Nagasaki Prefecture

***Siratoria siratoriensis* (Otuka)** reported by Shikama (1954) from the Miocene Nukuta Formation, Nagano Prefecture; **“*Paphia*“ *siratoriensis* Otuka, 1934**

***Solamen diaphana* (Dall)** reported by Takayasu (1961) from the Pliocene Sasaoka Formation, Akita Prefecture (synonymous with ***Solamen spectabilis* (A. Adams, 1862)** by Habe (1977): ***Crenella diaphana* Dall, 1907**

***Solamen fornicatum* (Yokoyama)** reported by Shibata (1974) from the Miocene Yamanouchi Formation, Gifu Prefecture; see ***Crenella formicatum* Yokoyama, 1926**

***Solamen ehombica* Ozaki, 1958**

Bull. Nat. Sci. Mus., N. S., vol. 4, no. 1 (no. 42), p. 119, pl. 15, figs. 28, 29

Holotype: NSM no. 4476

Road-side cutting 1.5 km south of Hanawa, Iioka-machi, Chiba Prefecture

Iioka Formation

Pliocene

***Solamen peikangchiensis* Masuda and Huang, 1993**

Jour. Geol. Soc. China, vol. 36, no. 3, p. 268, pl. 4, figs. 1-5

Holotype: NTUM no. 93-089

Loc. no. KS 601, Shihmen Formation along the Wuchi section, Taiwan

Shihmen Formation

Miocene

***Solamen tochiensis* Hirayama, 1967**

Prof. H. Shibata Mem. Vol., p. 391, pl. 1, figs. 9-10

Holotype: GLR no. 1028

Nanatsuishi, Oyamada-shimogo, Bato-machi, Nasu-gun, Tochigi Prefecture

Arakawa Group

Miocene

***Solamen tomiyaensis* Nomura and Hatai** reported by Mizuno et al. (1969) from the Miocene Atsunai Formation, Hokkaido (miss print of authors ; (Hatai and Nakamura) by Masuda and Noda (1976)); ***Crenella tomiyaensis* Nomura and Hatai, 1940**

Solecurtus abbreviatus* (Gould)** reported by Yokoyama (1920) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture: ***Solen abbreviatus* Gould, 1861** (Azorinus abbreviatus* (Gould, 1861)** by Habe (1977))

***Solecurtus luzonensis* Kanno, O'Hara and Caagusan, 1982**

Geol. Palaeont. Southeast Asia, vol. 24, p. 78, pl. 16, figs. 9a-b

Holotype: JUE no. 10022, Paratype: JUE no. 10023

River floor and the river side bank of the Madlum River, near the Tartaro Bridge, San Miguel, Bulacan, Central Luzon, Philippines

Tartaro Formation

Upper Miocene

***Solecurtus miyakojimaensis* Masuda, Sato and Shuto, 1986**

Mem. Fac. Sci., Kyushu Univ. Ser. D, vol. 26, no. 1, p. 33, pl. 4, figs. 9a-b

Holotype: GK-L no. 11828

Loc. no. 2, Sea cliff, about 200 m N of Shimajiri, Hirara City, Miyako-jima, Okinawa Prefecture

Oura Formation of the Shimajiri Group

Pliocene

***Solemya (Acharax) bosoana* Hatai and Koike, 1957**

Japan. Jour. Geol. Geogr., vpl. 28, nos. 1-3, p. 86, pl. 4, fig. 1

Holotype: IGPS no. 94774

Okuzure (loc. 9), Katsuyama-machi (Kyonan-machi), Awa-gun, Chiba Prefecture

Okuzure Member of the Hota Group

Oligocene

***Solemya (Acharax) dalli* Clark** reported by Kanno (1960) from the Oligocene (Miocene) Ushikubitoge Formation, Saitama Prefecture

***Solemya (Acharax) gigas* Kanno, 1960**

Japan Soc., Promot. Sci., Ueno, Tokyo, p. 187, pl. 50, figs. 1, 2

Holotype: TKD no. 6186 (fig. 1)

Loc. No. 816, a dumping-ground, Chikado, Chichibu City, Saitama Prefecture

Hiranita Formation

Miocene

***Solemya (Adulomya) hachiyai* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 30, pl. 6, fig. 5, pl. 7, figs. 1, 2

Holotype: SM no. 5891

Kadonosawa (A valley about 1 km W of Minamikanazawa, Akaishi-mura (Ajigasawa-machi), Nishitsugaru-gun, Aomori Prefecture; 40°43'03"N, 140°10'05"E)

Akaishi Formation

Miocene

(***Adulomya hachiyai* (Nomura)** by Hatai and Nisiyama (1952))

***Solemya labeosa* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 7, p. 361, pl. 68, fig. 11

Holotype: GT no. ?

Kaigasawa, Higashiyama, Echigo (Valley W of Tochio-machi, Koshi-gun, Nagano Prefecture; 37°28'30"N, 139°59'E)

(Shiraiwa Formation)

Pliocene

(***Solemya (Petrasma) labeosa* (Yokoyama)** by Hatai and Nisiyama (1952))

***Solemya (Acharax) muroensis* Natori, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 55, p. 249, pl. 36, fig. 1

Holotype: IGPS no. 85727

Motomiya, Motomiya-cho, Higashimuro-gun, Wakayama Prefecture

Ukegawa-Muro Formation

Oligocene

***Solemya (Perasma) percernicosa* Kuroda, 1948**

Venus, vol. 15, nos. 1-4, p. 32, text-figs. 4, 5

Holotype: Chiba Coll. no. ?

Off Erimo, Hokkaido (250 fathoms in depth)
Recent
(Reported by Kamada and Hayasaka (1959) from the Pliocene Futaba-Tomioka Formation, Fukushima Prefecture)

***Solemya (Acharax) tibia* Kuroda, 1948**

Venus, vol. 15, nos. 1-4, p. 29, text-figs. 1-3
Holotype: Chiba Coll. no. ?
Off Erimo, Hokkaido (250 fathoms in depth)
Recent

***Solemya tokunagai* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 31, pl. 6, fig. 2
Holotype: GT no. ? Paratype: GT no. ? (pl. 6, figs. 1, 3) (designated by Hatai and Nisiyama (1952))
Shiogu in Tatsuta (Road cutting at Shiogu, Tatsuta-mura, Futaba-gun (Naraha-machi), Fukushima Prefecture; 37 ° 18'08"N, 140 ° 58'05"E)
Shirado (Kamenoo) Formation
Pliocene (Miocene)
(*Solemya (Acharax) tokunagai* Yokoyama by Hatai and Nisiyama (1952))

***Solemya tokunagai elongata* Aoki, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 17, p. 30, pl. 1, fig. 15
Holotype: TKD no. 5920
Loc. No. 7, cliff of small valley, Donosaku, Kamikatayose, Kabeya, Taira City (Iwaki City), Fukushima Prefecture; 37 ° 04'40"N, 140 ° 51'14"E
Kabeya Formation (Honya Formation)
Miocene
(*Solemya (Acharax) tokunagai elongata* Aoki by Masuda and Noda (1976))

***Solemya (Acharax) yessoensis* Kanehara, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 155, pl. 15, fig. 12
Holotype: GST no. ?
Near Morai, Atsuta-gun, Ishikari (Sea cliff about 800 m S of Morai, Atsuta-mura, Atsuta-gun, Ishikari Province, Hokkaido; 43 ° 18'05"N, 141 ° 24'06"E)
Oiwake Formation
Miocene

***Solen connectus* Oyama, 1951**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 56, Type; *Solen intermedius* Nagao, 1928, p. 83, pl. 4, figs. 5, 6
Holotype: GS no. 36435 IGPS, no. 36435), Paratype: GS no. 36435
(Sea cliff facing the mouth of Onga-gawa, about 400 m NW of Yamaga, Ashiya, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33 ° 53'56"N, 130 ° 39'54"E)

Yamaga Formation
Oligocene

***Solen gordonis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, Art. 6, p. 111, pl. 7, fig. 23
Holotype: UT no. ?
Miyata Zone (Shimo-Miyata), Miura Peninsula (Miura City), Kanagawa Prefecture
Pleistocene
(Reported by Hayasaka (1969) from the Miocene Osaki Formation, Kagoshima Prefecture)

***Solen gouldi* Conrad** reported by Yokoyama (1925) from the Pliocene Shirado (Miocene Kokozura) Formation, Ibaraki Prefecture

***Solen grandis* Dunker** reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture

***Solen (Eosolen) hataii* Kamada, 1973**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 238, pl. 23, figs. 3a-6
Holotype: GEN no. 1005 (figs. 4a-b), Paratype: GEN no. 1006 (figs. 3, 5, 6)
Southwestern coast of Okinoshima, Iojima-machi, Nishisonogi-gun, Nagasaki Prefecture
Okinoshima Formation
Eocene

***Solen intermedius* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 83, pl. 4, figs. 5, 6
Holotype: GS no. 36435, Paratype: GS no. 36435
(Sea cliff facing the mouth of Onga-gawa, about 400 m NW of Yamaga, Ashiya, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33 ° 53'56"N, 130 ° 39'54"E)
Yamaga Formation
Oligocene

(*Solen connectus* Oyama (1951))

***Solen krusensterni* Schrenck** reported by Chinzei (1961) from the Pliocene Togawa Formation

***Solen saitamensis* Kano, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 193, pl. 4, fig. 15
Holotype: TKD no. 5731 (fig. 15), Paratype: TKD no. 5732 (loc. No. 219b)
Loc. No. 137, about 150 m N of a shrine, Mitage, Ryokami-mura, Saitama Prefecture; Loc. No. 219b, a small valley cliff in Sakurazawa, about 600 m S of Kurao Elementary School, Hio, Ogano-machi, Saitama Prefecture
Ushikubitoge Formation

Oligocene

***Solen tanozawaensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 64, pl. 7, fig. 3

Holotype: SM no. 6044

Near the Tanosawa railway station, Odose-mura (Fukaura-machi), Nishitsugaru-gun, Aomori Prefecture (40° 45'07"N, 140°02'03"E)

Tanosawa Formation

Miocene

***Soletellina (Soletellina) kobiyamae* Kanno, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 42, p. 77, pl. 11, figs. 9-12

Holotype: TKD no. 6118 (fig. 9), Paratype: TKD no. 6119 (fig. 10)

Yokatoka Tunnel, along the JR Jyoban Line, about 500 m N of the Yotsukura Station, Iwaki City, Fukushima Prefecture

Asagai Formation

Oligocene

(*Nuttalia kobiyamai* (Kanno))

***Soletellina minoensis* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 7, p. 221, pl. 28, fig. 14

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952))

(Small cliff along the east side of the valley about 450 m W of the bench mark (197 m) at Tsukiyoshi, Akiyo-mura, Toki-gun, Gifu Prefecture (35°22'45"N, 137°13'33"E)

Tsukiyoshi Formation

Pliocene (Miocene)

***Soletellina (Nuttalia) petri* (Bartsch)** reported by Sawada (1962) from the Pliocene (Pleistocene) Nakanokawa Formation, Hokkaido (*Nuttalina petri* (Bartsch) by Masuda and Noda (1976)); ***Soletellina petri* Bartsch, 1929** (synonymys with *Nuttalia commoda* (Yokoyama, 1925) by Habe (1977))

***Solidicorbula nisataiensis* (Otuka)** reported by Itoigawa (1974) from the Miocene Shukunohora Formation, Gifu Prefecture (*Caryocorbula (Solidicorbula) nisataiensis* (Otuka) by Masuda and Noda (1976)); see *Aloides erythrodon misataiensis* Otuka, 1934

***Solidicorbula succincta* (Yokoyama)** reported by Itoigawa (1974) from the Miocene Shukunohora Formation, Gifu Prefecture (*Caryocorbula (Solidicorbula) succincta* (Yokoyama) by Masuda and Noda (1976)); *Corbula succincta* Yokoyama, 1923 (1924)

***Spisula grayana* (Schrenck)** reported by Yokoyama (1925) from the Pliocene Shirado (Miocene Tage) Formation, Ibaraki Prefecture; see *Mactra (Spisula) grayana* Schrenck, 1867 (synonymous with *Spisula (Mactromeris) polynyma* Stimpson

by Kuroda and Habe (1952) and Habe (1977))

***Spisula iwatensis* Hatai, 1940**

Bull. Biogeogr. Soc. Japan, vol. 10, no. 9, p. 130, pl. 1, fig. 7

Holotype: GS no. 61360

Valley floor just below Shiratori, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°14'N, 141°20'05"E)

Kadonosawa Formation

Miocene

***Spisula (Pseudocardium) kurikoma* (Nomura)** reported by Chinzei (1961) from the Pliocene Togawa Formation, Iwate Prefecture; see *Mactra kurikomana* Nomura, 1935

***Spisula (Mactromeris) nakayamaensis* (Kamada)** reported by Matsubara (1997, Saito Ho-on Kai Mus., Res. Bull., no. 65, p. 17): see *Mactra nakayamaensis* Kamada, 1962

***Spisula (Mactromeris) nagakoensis* Hatai and Nisiyama** reported by Kamada (1962) from the Oligocene Asagai Formation, Ibaraki Prefecture: see *Spisula polynyma nagakoensis* Hatai and Nisiyama, 1949

***Spisula onnechiuria* (Otuka)** reported by Kanno and Matsuno (1960) from the Miocene Chikubetsu Formation, Hokkaido; see *Mactra (Mactrotoma) californica onnechiuria* Otuka, 1937

***Spisula (Mactromeris) polynyma alaskana* Dall** reported by Kuroda (1931; In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano)) from the Pliocene Shigarami Formation, Nagano Prefecture (synonymys with *Spisula voyi* (Gabb) by Hatai and Nisiyama (1952), however it assigned invalid name by Habe (1973))

***Spisula (Mactromeris) polynyma nagakoensis* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 92, pl. 24, fig. 18

Holotype: GS no. 72506.

Small exposure in drainage west of Nagako, Nishiki-mura (-machi), Iwaki-gun (Iwaki City), Fukushima Prefecture (36°54'02"N, 140°45'06"E)

Asagai (Iwaki) Formation

Oligocene

***Spisula sachalinensis* (Schrenck)** reported by Kuroda (1931) from the Miocene Ogawa Formation, Nagano Prefecture; *Mactra sachalinensis* Schrenck, 1862 (*Pseudocardium sachalinensis* (Schrenck, 1862) by Habe (1977))

***Spisula shimotsukensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 287, pl. 59, fig. 11

Holotype: IGPS no. 85510

Upstream of the Shimotokurazawa valley, Sekiya,

Shiobara-machi, Shioya-gun, Tochigi Prefecture
Kanomatazawa Formation
Miocene

Spisula sorachiensis **Otatsume (MS)** reported by Uozumi (1955) from the Paleogene Wakkanabe Formation, Hokkaido (*Spisula sorachiensis* **Uozumi** by Masuda and Noda (1976))

Spisula sorachiensis **Uozumi** reported by Hirayama (1956) from the Oligocene Hikoshima Formation, Yamaguchi Prefecture

Spisula (Pseudocardium) undilifera (**Weaver**) reported by Kanno and Ogawa (1964) from the Miocene Takinoue Formation, Hokkaido

Spisula voyi (**Gabb**) see *Callista voyi* **Gabb** (*Spisula* (*Mactromeris*) **voyi** (**Gabb**)) by Masuda and Noda (1976))

***Spisula yokoyamai* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 189, pl. 4, figs. 6-10

Holotype: TKD no. 5600 (fig. 6), Paratype, TKD no. 5601 (loc. No. 720)

Loc. No. 724, both river side of cliffs, about 50 m downstream of Tebitsugauchi, Hino, Arakawa-mura, Chichibu-gun, Saitama Prefecture: Paratype; loc. No. 720, a small valley cliff at Kitsunezawa, about 500 m N of Kamihara, Ogano-machi, Chichibu-gun, Saitama Prefecture.

Saginosu Formation
Miocene

Spondylus anacanthus **Mawe** reported by Nomura and Niino (1932) from the Miocene Shirahama Formation, Shizuoka Prefecture

Spondylus cruentus **Lischke** reported by Ozaki (1958) from the Pliocene Naarai Formation, Chiba Prefecture.

***Spondylus kamitanoensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 171, pl. 1, figs. 19a-c

Holotype: TKD no. 5738, Paratype: TKD no. 5739 (loc. No. 803)

Loc. No. 814, a right river-side cliff, about 700 m NE of the Bushu-nakagawa Station, Arakawa-mura, Chichibu-gun, Saitama Prefecture: Paratype; loc. No. 803, a left river side cliff, about 100 m downstream of a bridge in Tochiya, Chichibu City, Saitama Prefecture.

Hiranita Formation
Miocene (early Miocene)

Squillaconcha minoensis (**Itoigawa**) reported by Itoigawa (1974) from the Miocene Shukunohora Formation, Gifu

Prefecture; see *Pseudopythina minoensis* **Itoigawa, 1960**

***Squillaconcha nishimotoi* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 26, pl. 8, figs. 5-9

Holotype: MFM no. 10033, Paratype: MFM nos. 10034, 10035 Yamanouchi-ST. 282, Akeyo-cho, Mizunami City, Gifu Prefecture (Loc. no. 87)

Yamanouchi Member of the Mizunami Group
Miocene

***Striarca elongata* Taguchi, Osafune and Obayashi, 1981**

Bull. Mizunami Fossil Mus., no. 8, p. 2, pl. 1, figs. 1a-5

Holotype: IGS-ET no. 10001, Paratype: IGS-ET nos. 10002-10005

Kaki, Nagi-cho, Katsuta-gun Okayama Prefecture
Yoshino Formation of the Katsuta Group
Miocene

Striarca interplicata (**Grabau and King**) reported by Noda (1966) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture

***Striarca miyakojimaensis* Masuda, Sato and Shuto, 1986**

Mem. Fac. Sci., Kyushu Univ. Ser. D, vol. 26, no. 1, p. 13, pl. 1, figs. 15-16b

Holotype: GK-L no. 11826

Loc. no. 2: Sea cliff, about 200 m N of Shimajiri, Hirara City, Miyako-jima, Okinawa Prefecture (125°23'12"E, 24°52'23"N)
Oura Formation of the Shimajiri Group

Pliocene

Striarca (Eotellacra) uetsukiensis (**Hatai and Nisiyama**) reported by Ogasawara and Tanai (1952) from the Miocene Kamigo Formation, Yamagata Prefecture (*Striarca* (*Striarca*) **uetsukiensis** (**Hatai and Nisiyama**) by Masuda and Noda (1976))

***Saccella confusoides* Ozaki, 1956**

Bull. Nat. Sci. Mus., vol. 3, no. 1, p. 3, pl. 1, fig. 8

Holotype: NSM no. 4372

Nisinotani, Nobori, Hane Town, Aki-gun (Muroto City), Kochi Prefecture

Nobori Formation

Miocene (Pliocene)

(*Saccella confusoides* (**Ozaki**)) by Masuda and Noda (1976))

Swiftopecten swiftii (**Bernardi**) reported by Masuda (1960) from the Pleistocene Shibikawa Formation, Akita Prefecture; *Pecten swiftii* **Bernardi, 1858**

Taiwancorbicula chiuwohgi **Kanno and Chong, 1975** described from the Oligocene Yonryo Sandstone in Taiwan

***Tamarindiformis akanudaensis* Kuroda, 1931**

In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 42, pl. 12, fig. 102

Holotype: GK no. ?

A short distance of N of Akanuta, Nishigori-mura, Higashichikusa-gun, Nagano Prefecture (36°19'N, 130°01'E)

Uchimura Formation; upper part

Miocene

(*Volsella akanudaensis* (Kuroda) by Hatai and Nisiyama (1952))

***Tamarindiformis modiolus* (Linne)** reported by Kuroda (1931) from the Pliocene Shigarami Formation, Nagano Prefecture; see *Mytilus modiolus* Linne

***Tapes amabilis* (Philippi)** reported by Yokoyama (1920) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture; see *Venus amabilis* Philippi (*Paphia naganumana* Otuka) by Hatai and Nisiyama (1952))

***Tapes euglyptus* (Philippi)** see *Venus euglyptus* Philippi, Yokoyama, 1923 (1924) (*Paphia amabilis kiiensis* Hatai and Nisiyama n. n., 1952, invalid by Masuda and Noda (1976))

***Tapes ezoensis* Yokoyama, 1890**

Palaeontogr., vol. 36, nos. 3-6, p. 197, pl. 25, figs. 6a-b, 7, 8

Holotype: Munich Mus. no. ?

Poronai (Probably near the Poronai coal-mine, a short distance SE of the Poronai Station, Mikasayama-mura, Sorachi-gun)

Ishikari Province, Hokkaido (43°13'19"N, 141°54'52"E)

Poronai Formation

Cretaceous (Eocene)

(*Callsita ezoensis* (Yokoyama) by Hatai and Nisiyama (1952))

***Tapes faustinoi* Kanno, O'Hara and Caagusan, 1982**

Geol. Palaeont. Southeast Asia, vol. 24, p. 87, pl. 15, fig. 16, pl. 16, figs. 2a-b

Holotype: JUE no. 10031, Paratype: JUE no. 10032

River floor and the river side bank of the Madlum River, near the Tartaro Bridge, San Miguel, Bulacan, Central Luzon, Philippines

Tartaro Formation

Upper Miocene

***Tapes (Ruditapes) hataii* Masuda and Noda, 1976**

Spec. Pub. Saito Ho-on Kai, no. 1, p. 12

Holotype: TK no. ?

Isozakii, Hiraiso-machi, Oka-gun (Hitachinaka City), Ibaraki Prefecture

Minato Formation

Miocene

(N. sp. for *Paphia isozakiensis* Hatai and Nisiyama (invalid name) which was proposed as n. n. for the *Tapes variegatus* Hanley, Yokoyama (1925; Jour. Coll. Sci., Imp. Univ. Tokyo,,

vol. 45, art. 7, p. 18, pl. 3, fig. 13))

***Tapes higuchii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 187, pl. 4, fig. 5

Holotype: TKD no. 5598

Loc. No. 216, a small valley cliff, about 300 m S of Hisakata, Yoshida-machi, Chichibu-gun, Saitama Prefecture

Nenokami Formation

Oligocene (early Miocene)

(*Paphia higuchii* (Kanno) by Masuda and Noda (1976))

***Tapes japonica* (Deshayes)** reported by Hatai et al., (1961) from the Pliocene (Pleistocene) Hamada Formation, Aomori Prefecture (*Tapes (Ruditapes) philippinarum* (Adams et Reeve) by Masuda and Noda (1976))

***Tapes (Siratoria) microsiratoria* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 186, pl. 4, figs. 1a-2

Holotype: TKD no. 5734 (figs. 1a-b), Paratype: TKD no. 5735 (same locality)

Loc. No. 142, a small exposure of the river side of Yamagata, Minano-machi, Chichibu-gun, Saitama Prefecture

Ushikubitoge Formation

Oligocene (early Miocene)

(*Siratoria microsiratoria* (Kanno) by Masuda and Noda (1976))

***Tapes (Amygdala) miyamurensis* Itoigawa, 1956**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 23, no. 2, p. 189, pl. 1, figs. 2, 3

Holotype: JC no. 1400001 (fig. 2)

Loc. No. 11-1; Kaya, Okuiyamada, Ujitawara-machi, Tsuzuki-gun, Kyoto Prefecture

Miyamura Sandstone of the Tsuzuki Group

Miocene

(*Tapes (Ruditapes) miyamurensis* Itoigawa by Masuda and Noda (1976))

***Tapes nagahamaensis* Saito, Bando and Noda, 1970**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 77, p. 282, pl. 31, figs. 1-4, 22

Holotype: IGPS no. 86743 (fig. 3)

Loc. No. 1, Nagahama, Tonosho-cho, Shodo-gun, Kagawa Prefecture

Teshima Formation

Miocene (Eocene?)

***Tapes siratoriensis* (Otuka)** reported by Otuka (1937) from the Miocene Togane Formation, Shimane Prefecture (*Siratoria siratoriensis* (Otuka) by Hatai and Nisiyama (1952)); see "*Paphia*" *siratoriensis* Otuka, 1934

***Tapes* (?) *taiwanensis* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 82, pl. 9, figs. 1-2

Holotype: GSJ no. ?

Kizan, Bunzan-gun, Taihok-syu, Taiwan and Usekikokei, Tosei-gun, Taichu-syu, Taiwan

Lower Arisan Beds

Miocene

Tapes undulatus* (Born)** reported by Yokoyama (1925) from the Pliocene Shirado Formation (Miocene Tage Formation), Fukushima Prefecture (Paphia* (*Paratapes*) *undulata* (Born)**) by Hatai and Nisiyama (1952); ***Venus undulatus* Born, 1778**

***Tapes* ? *uyemurai* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 201, pl. 51, fig. 12

Holotype: GT no. ? , Paratype: GT no. ? (designated by Hatai and Nisiyama (1952))

Exact locality unknown (probably on the upper course of the Chebotsunai, Tomamae-mura, Tomamae-gun, Teshio Province, Hokkaido; 44 °15'N, 141 °52'E)

Haboro Formation

Miocene

(***Clementia* ? *uyemurai* (Yokoyama)**) by Hatai and Nisiyama (1952); ***Serripes* ? *uyemurai* (Yokoyama)** or ***Pitar* ? *uyemurai* (Yokoyama)**)

Tapes variegatus* Hanley** reported by Yokoyama (1925) from the Pliocene (Miocene) Minato Formation, Ibaraki Prefecture (Paphia isozakiensis* Hatai and Nisiyama, n. n., 1952**; Sci. Rep., Tohoku Univ., 2nd Ser. Spec. Vol., no. 3, p. 139) (invalid and new name as ***Tapes* (*Rudtapes*) *hataii* Masuda and Noda** (1976; Saito Ho-on Kai, Mus., Spec. Pub., no. 1, p. 12))

Taras cumingi* (Hanley)** reported by Nomura (1938) from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture (Joannisiella cumingi* (Hanley)**) by Hatai and Nisiyama (1952); ***Diplodonta cumingi* Hanley, 1844**; ***Cycladicama cumingii* (Hanley, 1844)** by Habe (1977))

***Taras millepustulata* Nomura 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 75, pl. 3, figs. 16

Holotype: IGPS no. 45096

Hanpeizan, Okayama-gun, Takao-shu, Taiwan

Riukiu Limestone (Ryukyu Limestone)

Pleistocene

(***Diplodonta* ? *millepustulata* (Nomura)**)

***Taras* (*Felaniella*) *ustus* (Gould)** reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture; ***Mysia* (*Felania*) *usta* Gould, 1861**; ***Felaniella usta* (Gould, 1861)** by Habe (1977))

***Tellina* (*Pharaonella*) *akiana* Nomura, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 83, pl. 6, fig. 4

Holotype: GS no. 54691

Tonohama (Near the junction of the tributary and the small river, a short distance E of the road at Todani, N of Tonohama, Yasuda-machi, Aki-gun, Kochi Prefecture; 33 °26'43"N, 133 °58'21"E)

(Konomine or Anani Formation)

Pliocene

***Tellina alternata* Say, var. *Chibana* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 13, pl. 2, fig. 20

Syntype: GT no. ?

Wariyama, Akai (Wariyama, Akai-mura, Iwaki-gun (Tairaakai, Iwaki City), Fukushima Prefecture; 37 °36'N, 140 °52'E)

Asagai Formation

Miocene (Oligocene)

(Synonymous with ***Peronidia lutea* (Wood)**) by Hatai and Nisiyama (1952); ***Megangulus lutea* (Wood)**)

***Tellina besshoensis* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 14, pl. 2, figs. 1-5

Holotype: UT no. ?

Bessho, Iwaki (Valley 150 m NW of bridge of Bessho, Iwasaki-mura, Iwaki-gun (Jobanfujiwara-machi, Iwaki City), Fukushima Prefecture; 36 °59'07"N, 140 °49'05"E)

Asagai Formation

Miocene (Oligocene)

(***Periploma besshoense* (Yokoyama)**) by Hatai and Nisiyama (1952))

***Tellina* (*Scissulina*) *dispar* Conrad** reported by Ogasawara and Tanai (1952) from the Miocene Kamigo Formation, Yamagata Prefecture

***Tellina equideclivis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 79, pl. 4, fig. 29

Holotype: GS no. 36457, Paratype: GT no. 36457 (pl.4, figs. 30, 31)

(Near the top of the hill (92 m), about 300 m W of) Abo, Koyagi-jima, Koyagi-mura, Nishisonogi-gun, Nagasaki Prefecture (32 °40'54"N, 129 °48'E)

Okinoshima Formation

Upper Eocene

***Tellina hamadai* Masuda, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 20, p. 122, pl. 19, figs. 10, 11

Holotype: DGS no. 1657 sifted to IGPS no. 90415 (fig. 10)

Tokunari, Machino-machi, Fugeshi-gun (Wajima City), Ishikawa Prefecture

Higashi-Innai Formation

Miocene

***Tellina izurensis* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 19, pl. 2, fig. 12

Izura (Sea cliff at Izura, Otsu-machi, Taga-gun, Ibaraki Prefecture; 36°49'06"N, 140°48'02"E)

Shirado (Kokozura Formation)

Pliocene (Miocene)

(*Macoma izurensis* (Yokoyama) by Hatai and Nisiyama (1952): synonymous with *Macoma calcarea* (Gmelin) by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Tellina kakumana* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 177, pl. 47, fig. 14

Holotype: GT no. ?

Kakuma (Road-side cliff on the contact point of the road and the small road, about 100 m S of the junction of the two small rivers, Kakuma, Asakawa-mura, Kahoku-gun (Kanazawa City), Ishikawa Prefecture (36°32'44"N, 136°42'28"E)

Onma Formation

Pliocene (early Pleistocene)

(*Thracia kakumana* (Yokoyama) by Hatai and Nisiyama (1952))

***Tellina kikaizimana* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 157 (49), pl. 5 (1), figs. 19a-b

Holotype: IGPS no. 50398

Kamikatsutsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyuu Limestone

Pleistocene

(? *Abrina kikaizimana* (Nomura and Zinbo))

***Tellina kuntsuipinensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 99, pl. 4, figs. 10a-b

Holotype: IGPS no. 48595

Ejecta of mud-volcanoes at Konsuihei, Kyoshito, Okayama-gun, Takao-shu, Taiwan

Horizon unknown

***Tellina kurodai* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 1, no. 1, art. 1, p. 49, pl. 2, figs. 10-13

Syntype: GK no. 14

Dainichi (Valley about 350 m NW of Dainichi, Ugari-mura, Suchi-gun (Fukuroi City), Shizuoka Prefecture; 34°48'07"N, 137°56'E)

Dainichi Formation

Pliocene

(*Tellina* (*Moerella*) *kurodai* (Yokoyama) by Hatai and Nisiyama (1952))

***Tellina* (*Peronidia*) *lutea t-matsumotoi* Otuka, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 1-2, p. 96, pl. 11, figs. 7, 8

Syntype: GT no. 4282.

River floor of the Wakkauenbetsu-gawa (about 600 m below the branching point of the Hannoki-zawa) Nakagawa-gun, Teshio Province, Hokkaido (43°58'01"N, 142°02'32"E)

Wakkauenbetsu Formation

Miocene

(*Megangulus tmatsumotoi* (Otuka))

***Tellina matsumotoensis* Araki, 1958**

Bull. Fac. Agr., Mie Univ., no. 16, p. 197, text-figs. 2, 4

Holotype: Mie Univ. no. ?

Cliff behind the school at Yukunoura, Owase City, Mie Prefecture

Yukunoura Formation

Miocene

***Tellina maxima* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 80, pl. 4, fig. 9

Holotype: GS no. 36412, Paratype: GS no. 36412, 36452 (pl. 4, figs. 8, 11)

(Southern slope bordering the creek, a short distance W of the pond at) Shinyama, Omachi-mura (-cho), Kishima-gun, Saga Prefecture (33°13'18"N, 130°07'10"E)

Kishima Formation

Oligocene

(*Angulus maxima* (Nagao) by Hatai and Nisiyama (1952))

Tellina minuta Lischke reported by Nomura (1935) from the Miocene Chiganoura Formation, Miyagi Prefecture (*Angulus* (*Angulus*) *minuta* (Lischke) by Hatai and Nisiyama (1952):

Fabulina (*Fabulina*) *minuta* (Lischke) by Oyama (1973))

***Tellina miyatensis* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 115, pl. 7, fig. 18

Holotype: UT no. ?

Kami-Miyata, Miura Peninsula (Miura City), Kanagawa Prefecture

Miyata Zone (Miyata Formation)

Pleistocene

(Reported by Nomura and Hatai (1936) from the Miocene Tanagura Formation, Fukushima Prefecture: *Semelangulus miyataensis* (Yokoyama) by Oyama (1973))

***Tellina nipponica* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 44-45, pl. 2, figs. 36a-a'

Holotype: UT no. ?

Cutting along the railway at Oji, environs of Tokyo (Kita-ku, Tokyo Prefecture)

Oji Bed (Tokyo Formation)
Pleistocene (ca. 120-70 Ka)
(*Macoma nipponica* (Tokunaga))

***Tellina notoensis* Masuda, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 20, p. 122, pl. 19, fig. 12

Holotype: DGS no. 2502 shifted into IGPS no. 90451

Tokunari, Machino-machi, Fugeshi-gun (Wajima City), Ishikawa Prefecture

Higashi-Innai Formation

Miocene

***Tellina ojiensis* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 44, pl. 2, figs. 34a, a', b

Holotype: TU no. ?

Cutting along the railway at Oji, (Kita-ku) Tokyo Prefecture

Oji Bed (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

***Tellina okadaensis* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 129, pl. 15, figs. 6, 7

Holotype: SM no. 6903

Okada (Cliff bordering stream immediately NW of Okada, Yamaoka-mura (Tanagura-machi), Higashishirakawa-gun, Fukushima Prefecture; 37°01'N, 140°24'05"E)

Tanagura Formation

Miocene

***Tellina optiva* Yokoyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 1, p. 6, pl. 2, figs. 3a-b, 4

Holotype and Paratype: GT no. ?

(Lake cliff about 300 m NWW of Jyakusan, N of Fujina, Tamayu-mura (-cho), Yatsuka-gun, Shimane Prefecture (35°26'N, 133°02'E)

(Fujina Formation)

Miocene

(*Macoma optiva* (Yokoyama) by Hatai and Nisiyama (1952))

***Tellina osafunei* Taguchi, 1983**

Bull. Mizunami Fossil Mus., no. 10, p. 27, pl. 7, figs. 12a-14b

Holotype: IGSH-ET no. 10039, Paratype: IGSH-ET nos. 10040-10041

Shinden, Tsuyama City, Okayama Prefecture

Yoshino Formation of the Katsuta Group

Middle Miocene

***Tellina prototenuilirata* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 100, pl. 4, figs. 7a-9b

Holotype: IGPS no. 48192 (?)

Futoko (?), Boshiho, Shiko-sho, Byoritsu-gun, Shinchiku-shu,

Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

***Tellina (Peronidia) protovenulosa* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 87, pl. 3, fig. 11, pl. 4, figs. 7-9

Holotype: SM no. 5575

A road-side about 1 km S of the Narusawa hot spring, Genbi-mura, Nishiiwai-gun (Ichinoseki City), Iwate Prefecture (39°10'N, 140°52'05"E)

(Narusawa Formation)

Miocene

(*Megangulus protovenulosa* (Nomura))

***Tellina (Moerela) salmonea* (Carpenter)** reported by Kanehara

(1942) from the Plio-Pleistocene Setana Formation, Hokkaido (synonymous with *Cadella lubricata* (Gould) by Hatai and Nisiyama (1952); *Cadella lubrica* (Gould, 1861) by Habe

(1977))

***Tellina scabricostulata* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 246 (18), pl. 11 (1), figs. 16a-17b

Holotype: IGPS no. 51333 (figs. 16a-b), Paratype: IGPS no. ? (figs. 17a-b)

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture)

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

***Tellina sejugata* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 14, pl. 2, figs. 9-11

Holotype: GT no. ?

Bessho, Iwasaki (Valley 150 m NW of bridge of Bessho, Iwasaki-mura, Iwaki-gun (Jobanfujiwara-machi, Iwaki City), Fukushima Prefecture; 36°59'07"N, 140°49'05"E)

Asagai Formation

Miocene (Oligocene)

(*Macoma sejugata* (Yokoyama) by Hatai and Nisiyama (1952))

***Tellina sendaica* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 19, no. 2, p. 263, pl. 34, figs. 1a-b

Holotype: SM no. 2446

Goroku cliff along the right bank of the Hirosegawa, Aoba-ku, Sendai City, Miyagi Prefecture (38°16'N, 140°49'E)

Tatsunokuchi Formation

Pliocene

***Tellina serricostata* Tokunaga, 1906**

Jour. Coll. Sci., Imp. Univ. Tokyo, Vol. 21, art. 2, p. 43, pl. 2, figs. 32a, a', b

Holotype: UT no. ?

Cutting along the railway at Shinagawa (Minato-ku) and Tabata (Kita-ku), environs of Tokyo (Tokyo Prefecture)

Shinagawa and Tabata beds (Tokyo Formation)

Pleistocene (ca. 120-70 Ka)

***Tellina taiwanica* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 73, pl. 7, figs. 1-2

Holotype: GSJ no. ?

Tenshi, Shiko-sho, Bryoritz-gun, Shinchiku-syu, Taiwan

Upper Bryoritz Bed

Pleistocene

***Tellina tricarinata* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 78, pl. 3, fig. 17

Holotype: GS no. ? , Paratype: GS no. ? (pl. 3, fig. 18; same formation however different locality)

(Southern cliff of the isolated hill, about 250 m W of the bridge at) Chogiri, Ochi-mura (-cho), Higashimatsuura-gun, Saga Prefecture (33 °19'14"N, 130 °02'06"E)

Kiuragi Formation

Upper Eocene

***Tellina umedairensis* Shikama, 1951**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 1, p. 15, text-figs. 1, 2

Holotype: GIYU no. ?

Umedaira, Yaegochi-mura (Anan-cho), Shimoina-gun, Nagano Prefecture

Wada Formation

Oligocene (Miocene)

(*Megangulus umedairensis* (Shikama))

***Tellina vancouverensis* Clark and Arnold** reported by Kanno (1960) from the Oligocene (early Miocene) Nenokami Formation, Saitama Prefecture

Tellina venulosa* Schrenck** reported by Nomura (1935) from the Pliocene (Miocene) Hitosao Formation, Fukushima Prefecture (Megangulus venulosus* (Schrenck)**)

***Tellina vestaloides* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 114, pl. 7, fig. 25

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Tostuka-ku, Yokohama City, Kanagawa Prefecture; 35 °22'03"N, 139 °32'05"E)

Naganuma Formation

Lower Musashino (Pleistocene, ca. 0.5 Ma)

(*Angulus vestaloides* (Yokoyama) by Hatai and Nisiyama (1952))

***Tellina ? wagaensis* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 592, p. 58, pl. 3, fig. 15

Holotype: GT no. ?

Side cliff of the Asahi-gawa, near the foot of the bridge at Shimonagano, Sannai-mura, Hiraga-gun, Akita Prefecture (39 °14'57"N, 140 °40'58"E)

Kurosawa Formation

Miocene

***Thracia ashimensis* Uozumi, 1966**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 13, no. 2, p. 133, pl. 9, figs. 1, 5-7

Holotype: UH no. 11205 (fig. 1), Paratype: UH nos. 11206 (fig. 5), 11200 (fig. 6), 11201 (fig. 7), 11202.

Upper stream of the northern branch of the Horomui-gawa, Asahi coal-mine, Iwamizawa City, Ishikari Province, Hokkaido Asahi Formation

Miocene

***Thracia beringi* Dall** reported by Nomura and Onisi (1940) from the Miocene strata of Murata-machi, Miyagi Prefecture

***Thracia chigayensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 197, pl. 5, fig. 2

Holotype: TKD no. 5645

Loc. No. 215, a road side cutting about 600 m E of the Chigaya mineral spring, Chigaya, Yoshida-machi, Chichibu-gun, Saitama Prefecture

Nenokami Formation

Oligocene (early Miocene)

***Thracia (?) genbiana* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 75, pl. 4, fig. 5

Holotype: SM no. 5579

A road-side cliff about 1 km S of the Narusawa hot spring, Genbi-mura, Nishiiwai-gun (Ichinoseki City), Iwate Prefecture (39 °10'N, 140 °52'05"E)

(Narusawa Formation)

Miocene

***Thracia hataii* Kamada, 1955**

Sci. Rep., Fac. Arts and Liter., Nagasaki Univ., no. 4, p. 10, pl. 1, figs. 5, 6

Holotype: IGPS no. 72960 (fig. 5), Paratype: IGPS no. 72961 (fig. 6)

About 600 m N of Ena-machi water reservoir, Iagamesaku, Nagasaki, Ena-machi (Iwaki City), Fukushima Prefecture: Paratype; Kamori-saku, Kamitakaku, Iino-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture

Nakayama Formation

Miocene

***Thracia higashinodonoensis* Oinomikado, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 539, p. 674, pl. 20, figs. 11, 12

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)

Bank of the small river, about 200 m S of Higashinodono, Iwanoya-mura, Usui-gun (Annaka City), Gunma Prefecture (36° 19'N, 138° 56'E)

Itahana Formation

Miocene

***Thracia hitosaoensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 107, pl. 7, fig. 7

Holotype: SM no. 2153

Hitosao, SE of Ogino, along the Agano-River, Yamago-mura (Takasato-mura), Yama-gun, Fukushima Prefecture (37° 36'N, 139° 44'E)

Hitosao Formation (Urushikubo Formation)

Pliocene (Miocene)

Thracia kakumana* (Yokoyama); see *Tellina kakumana* Yokoyama, 1927**Thracia kamayashikiensis* Hatai, 1940**

Bull. Geogr. Soc. Japan, vol. 10, no. 9, p. 123, pl. 1, fig. 2

Holotype: GS no. 61349

Road cutting about 300 m W of Kamayashiki, Tomai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40° 17'05"N, 141° 16"E)

Suenomatsuyama Formation

Pliocene (middle Miocene)

***Thracia kidoensis* Kamada, 1955**

Sci. Rep., Fac. Arts and Liter., Nagasaki Univ., no. 4, p. 11, pl. 1, figs. 1-2b

Holotype: IGPS no. 72958 (figs. 2a-b), Paratype: IGPS no. 72959 (fig. 1)

In the tunnel, W of the Iriumi mineral spring, Kobansaku, Kido-mura (Naraha-machi), Futaba-gun, Fukushima Prefecture; Paratype: Tadano-saku, Shimokitaba, Hirono-machi, Futaba-gun, Fukushima Prefecture

Asagai Formation

Oligocene

***Thracia kurosawaensis* Hayasaka, 1957**

Saito Ho-on Kai Mus., Res. Bull., no. 26, p. 28, text-figs. 1a-c

Holotype: IGPS no. 77497 (fig. 1a), Paratype: IGPS nos. 77498, 77499

Loc. No. 4, River iside cliff at the western entrance of the railway tunnel between the Iwateyuda and Kawajiri Stations, Yuda-mura (-machi), Waga-gun, Iwate Prefecture

Kurosawa Formation

Miocene

***Thracia pertrapezoidea* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 50, pl. 7, fig. 4

Holotype: SM no. 6047.

Near the railway station of Tanosawa, Odose-mura (Fukaura-machi), Nishitsugaru-gun, Aomori Prefecture (44° 40'45'07"N, 140° 02'03"E)

Tanosawa Formation

Miocene

Thracia pubescens* (Pulteney)** reported by Yokoyama (1925) from the Pliocene Shigarami Formation, Nagano Prefecture (Thracia kamayasikiensis* Hatai** by Hatai and Nisiyama (1952); ***Mya pubescens* Pulteney, 1799**)

***Thracia watanabei* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 31, pl. 8, figs. 21-24

Holotype: MFM no. 10047, Paratype: MFM nos. 10048, 10049

Togari-ST. KA-1 (Loc. no. 78), Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Mizunami Group

Miocene

***Thracia yokoyamai* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 144. Type; *Thracia pubescens*, Yokoyama (1925; Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 25, pl. 1, fig. 11)

Holotype: UT no. ?

Gomasawa, Taira-machi (Taira City) (Iwaki City), Fukushima Prefecture

Misawa Formation

Miocene

(***Periploma pulchella* Hatai and Nisiyama** by Masuda and Noda (1976))

***Thracidora gigantea* Shikama, 1968**

Sci. Re., Yokohama Nat. Univ., Sec. 2, no. 14, p. 14, pl. 2, figs. 1-3, text-fig. 1

Syntype: GIYU no. ?

Cliff north of a tunnel of the road between Hayami and Ikegami, Yokosuka City, Kanagawa Prefecture

Morito (Shale) Formation

Miocene (lower Miocene)

***Thracidora nishizawaensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 283, pl. 59, fig. 4

Holotype: IGPS no. 85504

Nishizawa, Uzuno, Shiobara-machi, Shiota-gun, Tochigi Prefecture

Kanomatazawa Formation

Miocene

Thyasira bisecta* (Conrad)** see ***Venus bisecta* Conrad, 1846** (Conchocele bisecta* (Conrad)** by Masuda and Noda (1976))

***Thyasira bisecta* Conrad var. *nipponica* Yabe and Nomura, 1925**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 7, no. 4, p. 84, pl. 23, fig. 3

Holotype: GS no. 7485

Sea cliff S of Morai, Atsuta-mura, Asuta-gun, Ishikari Province, Hokkaido (43°18'05"N, 141°24'06"E)

Kawabata Formation

Miocene

***Thyasira (Conchocele) bisecta omarui* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 602, pl. 3, figs. 4a-7

Holotype: GSJ no. 5011 (figs. 4a-b)

Ashibetsu City Sorachi Province, Hokkaido (exactly unknown)

Akabira Formation

Oligocene

(*Conchocele bisecta omarui* (Oyama and Mizuno) by Masuda and Noda (1976))

***Thyasira (Conchocele) bisectoides* Kuroda, 1931**

In Honma F. ed., Shinshu Chubu Chisitsushi (Geology of central Shinano), p. 50, pl.12, figs. 95, 96

Holotype and Paratype: GK no. ?

Small valley at foot of Daimyojin-dake, 800 m SW of the summit, Nishiuchi-mura, Chiisagata-gun, Nagano Prefecture (36°19'N, 138°07'E)

Uchimura Formation; upper part

Miocene

***Thyasira compacta* Ishizaki, 1942**

Trans. Nat. Sci. Hist. Soc. Formosa, vol. 32, no. 230, p. 349, figs. 1a-f, 2

Holotype: ?

About 3500 m WNW of Kosyun, Kosyun-gun, Takao Prefecture, Taiwan

Lower part of the Siko Formation

Pliocene or Pleistocene (may be Pleistocene)

(Reported by Hirayama (1954) from the Miocene Kobana Formation, Tochigi Prefecture (*Conchocele compacta* (Ishizaki) by Masuda and Noda (1976))

***Thyasira crassiuscula* Yokoyama, 1927**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 4, p. 179, p. 47, fig. 12.

Holotype: GT, no. ?

Onma (West side cliff Kaigara-buchi) of the Saigawa, near the large sand-bank, about 400 m SW of the contact point of the two roads at Onma, Sakiura-mura, Ishikawa-gun (Kanazawa City), Ishikawa Prefecture (36°31'24"N, 136°41'10"E)

Onma Formation

Pliocene (early Pleistocene)

***Thyasira inflata* Yabe and Nomura, 1925**

Sci. Rep. Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 7, no. 4, p. 93, pl. 23, figs. 5a-b

Holotype: GS no. 17251

Sea cliff south of Tsurushizaki, Hitachi-machi, Taga-gun (Hitachi City), Ibaraki Prefecture (36°35'05"N, 140°40'03"E)

Taga Formation

Miocene

(*Conchocele inflata* (Yabe and Nomura) by Hatai and Nisiyama (1952))

***Thyasira (Thyasira) minoensis* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 268, pl. 2, fig. 1

Holotype: ESN no. 20015

Tsukiyoshi (L7), (Akeyo-machi, Tsukiyoshi), Mizunami City, Gifu Prefecture

Shukunohora Sandstone of the Oidawara Formation

Miocene

***Thyasira nakazawai* Matsumoto, 1971**

Bull. Nat. Sci. Mus. Tokyo, vol. 14, no. 4, p.665, pl. 3, figs. 15-18

Holotype: NSM-PM no. 6922 (fi. 15), Paratype: NSM-PM nos. 6923 (fig. 16), 6924 (fig. 17), 6925 (fig. 18)

Loc. No. 18, a branch of River Hakko, 1600 m W of Matsushita, Kawane-cho, Haibara-gun, Shizuoka Prefecture

Wappazawa Formation

Oligocene

(*Conchocele nakazawai* (Matsumoto) by Masuda and Noda (1976))

Thyasira nipponica* Yabe and Nomura; see *Thyasira bisecta* var. *nipponica* Yabe and Nomura, 1925**Thyasira ozawai* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 8, p. 295, pl. 36, fig. 4

Sawane (Sea cliff facing Mano Bay, about 250 m SE of the contact point of two main roads near the primary school, Sawane-machi, Sado-gun, Niigata Prefecture; 37°49'47"N, 139°16'43"E)

(Sawane Formation)

Pliocene

***Thyasira quadrata* Yabe and Nomura, 1925**

Sci. Rep. Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 7, no. 4, p. 92, pl. 23, figs. 1a-b

Holotype: GS no. 8188

Locality unknown

Tertiary

(*Conchocele quadrata* (Yabe and Nomura) by Hatai and Nisiyama (1952))

***Thyasira rotundata* Yokoyama, 1925**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 1, part 9, p. 386, pl. 44, figs. 9, 13

Holotype: GT no. ?

Anden (Sea cliff near Anden, Iriai-mura, Minamiakita-gun (Oga City), Akita Prefecture; 39°58'05"N, 139°51'05"E)

Beds A (Shibikawa Formation)

Pliocene (Pleistocene)

(*Leptaxinus rotundata* (Yokoyama) by Hatai and Nisiyama (1952))

***Thyasira subexcavata* Yabe and Endo in Yabe and Nomura, 1925**

Sci. Rep. Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 7, no. 4, p. 93, pl. 24, figs. 1a-b

Holotype: GS no. 6973

Near Takai, Sekimoto-mura, Taga-gun (Kitamachi, Sekimoto-machi, Kitaibaraki City), Ibaraki Prefecture (36°50'03"N, 140°47'03"E)

Tokiwa Series (Taga Formation)

(Miocene)

Thyasira tokunagai Kuroda and Habe, 1951 reported by Takayasu (1962) from the Miocene (Pliocene) Kitaura Formation, Akita Prefecture

***Timocle nipponica* Mizuno, 1953**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 9, p. 16, figs. 4a-c

Holotype: CM no. ? (fig. 4a)

Komugi, Mitsuno-mura, Hongu-cho, Higashimuro-gun, Wakayama Prefecture

Mitsuno Formation

Miocene

***Tobarum* n. subgen, Noda, 1988**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 9, p. 74:

Type species, *Frigidcardium* (*Tobarum*) *tobaruensis* Noda described from the Pliocene Shinzato Formation, Okinawa Prefecture; see *Frigidcardium* (*Tobarum*) *tobaruensis* Noda

***Tosarca* Noda, n. subgen. 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 104:

Type-species, *Anadara* (*Tosarca*) *tosaensis* Noda, 1965 described from the Pliocene Ananai Formation, Kochi Prefecture

Trachycardium shiobarensis (Yokoyama) reported by Mizuno (1965) from the Pliocene (Miocene) Oinosawa Formation, Akita Prefecture (*Vasticardium shiobarensis* (Yokoyama) by Masuda and Noda (1976))

***Trapezium* (*Neotrapezium*) *ichinohense* Matsubara, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 328, figs. 4-1, -7a-8c

Holotype: IGPS no. 102605, Paratype: IGPS no. 102606

Loc. no. 18; upper reaches of the Nesori River about 3 km east of Nosokei, Ichinohe-machi, Ninohe-gun, Iwate Prefecture

***Trapezium* (*Neotrapezium*) *isoharensis* Kamada, 1962**

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 91, pl. 8, figs. 4-6

Holotype: IGPS no. 79382 (fig. 4)

Small river side cliff, 100 m upstream from the Futatsujima mineral-spring, Isohara-machi, Kitaibaraki City, Ibaraki Prefecture

Kunugidaira Formation

Miocene (early Miocene)

***Trapezium isomatsuense* Kotaka, 1955**

Saito Ho-on Kai Mus., Res. Bull., no. 25, p. 28, pl. 2, fig. 1

Holotype: IGPS no. 74006

Upper course of the Isomatsu-gawa, Wakimoto-mura (Shiura-mura), Kitatsyugaru-gun, Aomori Prefecture

Isomatsu Formation

Oligocene (early Miocene)

Trapezium japonicum Pilsbry reported by Kuroda (1931) from the Miocene Ogawa Formation, Nagano Prefecture (*Trapezium* (*Neotrapezium*) *japonicum* Pilsbry by Hatai and Nisiyama (1952))

***Trapezium jobanicum* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 90, pl. 24, figs. 8, 9

Holotype: GS no. 72506

A small cliff in front of the dormitory of Nippon Coal Mining Company, Nakoso-machi, Iwaki-gun (Iwaki City), Fukushima Prefecture (36°53'N, 140°44'07"E)

Iwaki Formation

Oligocene

Trapezium modilaeformis Oyama and Saka reported by Itoigawa (1974) from the Miocene Tsukiyoshi Formation, Gifu Prefecture

Tresus keenae (Kuroda and Habe) reported by Iwai (1965) from the Pliocene (Pleistocene) Daishaka Formation, Aomori Prefecture

***Trisidos yatsuoensis* Fujii, 1961**

Venus, vol. 21, no. 2, p. 218, text-figs. 1-4

Syntype: NSM no. 4700

Kamisasahara, Yatsuo-machi, Nei-gun, Toyama Prefecture

Kurosedani Formation; Kubusugawa Alternation Member

Miocene

***Tucetona chichibuensis* Hirayama, 1973**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 172, pl. 15, figs. 8-10

Holotype: GLR no. 1618 (fig. 8), Paratype: GLR no. 1619 (fig.

9)

Locality B, a left cliff of the Arakawa River at Hiranita, about 1 km N of the Bushu-Nakagawa Station, Chichibu City, Saitama Prefecture
Hiranita Formation
Miocene

***Tucetona hanzawai* (Nomura and Zinbo) see *Glycymeris* (*Tucetona*) *hanzawai* Nomura and Zinbo, 1934**

***Tucetona hanzawai granulicostata* Matsukuma, 1986**

Mem. Nat. Sci. Mus., no. 19, p. 97, figs. 3B-C
Holotype: NSMT-Mo59967, Paratype: NSMT-Mo59967, 59969, 59970-59972

About 500 m N of Gushikami Junior Highschool, Gushichan, Shimajiri-gun, Okinawa Prefecture. Paratype: A small cliff at Yakena horbor, Yonagusuku-son, Nakagami-gun, Okinawa Prefecture; A small cliff at Kochinda, north of Kochinda Primary School, Shimajiri-gun, Okinawa Prefecture; A quarry at Gushichan, north of Gushikami Junior Highschool, Shimajiri-gun, Okinawa Prefecture
Shinzato Formation
Pliocene

***Tucetona nozokiensis* (Hatai and Nisiyama) reported by Itoigawa (1974) from the Miocene Nataki Formation, Gifu Prefecture; see *Glycymeris nozokiensis* Hatai and Nisiyama, 1951**

***Tucetona taiwanensis* Masuda and Huang, 1990**

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 144, pl. 2, figs. 18-20, pl. 3, figs. 1-4
Holotype: UMNS no. 003257 (Loc. no. KS 152A), Paratype: UMNS no. 0003258 (Loc. no. KS 60)
Kuanynshan Sandstone, Peikangchi Section, central Taiwan, Paratype (loc. no. KS680): Shihmen Formation at Wuchi section, Taiwan
Kuanynshan Sandstone and Shihmen Formation (Paratype)
Early Miocene

***Unio moraiensis* Suzuki, 1941**

Japan. Jour. Geol. Geogr., vol.18, nos.1-2, p. 55-56, pl. 4, figs. 2-5
Holotype: UMUT CM15246
Oil-well no. 2, Syunbetsu, Ishikarimati, Atuta-gun, Ishikari Province, Hokkaido
Morai "hard shale" Formation (?) (Morai Formation)
Pliocene
(*Tapes* ? sp. by Yokoyama (1931))

***Unio uryuensis* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 6, pt. 2, p. 25, pl. 1, figs. 11a-c
Holotype; UMUT no. ?

Tomizawa, a branch of the Nasu-zawa tributary of the Urashimagawa River, Numata-cho, Uryu-gun, Sorachi Province, Hokkaido
Tachibetsu Formation (Uryu Group)
Oligocene (Eocene)

***Unio* (*Unio*) *uryuensis* Suzuki reported by Noda (1970) from the Eocene Owada Formation, Hokkaido**

***Varicorbula danensis* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 30, pl. 8, figs. 18a-20
Holotype: MFM no. 10044, Paratype: MFM nos. 10045, 10046
Dan (Loc. no. 26), Mizunami City, Gifu Prefecture
Nataki Conglomerate of the Oidawara Formation, Mizunami Group
Miocene

***Vasticardium arenicoloides* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 284, pl. 59, figs. 6, 7
Syntype: IGPS nos. 85504
Upstream of the Shimotokurazawa valley, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture
Kanomatazawa Formation
Miocene
(*Clinocardium arenicoloides* (Akutsu) by Masuda and Noda (1976))

***Vasticardium hyuganum* Shuto, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 37, p. 212, pl. 25, fig. 17
Holotype: GKL no. 4747
Waritsuke (MI-671), Aya-machi, Higashimorogara-gun, Miyazaki Prefecture
Tano Member of the Koyu Formation
Miocene

***Vasticardium kantoense* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 176, pl. 2, figs. 4a-b
Holotype: TKD no. 5569
Loc. No. 613, about 500 m N of Shibahara mineral spring, Shibahara, Arakawa-mura, Chichibu-gun, Saitama Prefecture
Nagura Formation
Miocene

***Vasticardium nipponicum* Noda, 1991**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 12, p. 27, figs. 12-10a-11b
Holotype: IGUT no. 11612 (fig. 10a-b), Paratype: IGUT no. 11498 (fig. 11a-b)
Loc. no. 42; Exposure at Nesabe, Tomigusuku-son, Shimajiri-gun, Okinawa Prefecture
Yonabaru Formation

Pliocene

***Vasticardium ogurai* (Otuka)** reported by Shuto (1960) from the Miocene Boroishi Formation, Miyazaki Prefecture; see ***Cardium ogurai* Otuka, 1938**

***Vasticardium otukai* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 35: Type, *Cardium burchardi*, Yokoyama (1925, Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 1, part 3, p. 120, pl. 14, fig. 9) Obashira, Chichibu Basin (Chichibu City), Saitama Prefecture Ogano Formation
Oligocene (early Miocene)
(***Vasticardium* sp.** by Masuda and Noda (1976))

***Vasticardium shimotokuraensis* Akutsu, 1964**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), vol. 35, no. 3, p. 283, pl. 59, figs. 9, 10
Syntype: IGPS no. 85503
Shimotokurazawa, Sekiya, Shiobara-machi, Shioya-gun, Tochigi Prefecture
Kanomatazawa Formation
Miocene
(***Clinocardium shimotokuaeense* (Akutsu)** by Masuda and Noda (1976))

***Vasticardium teshimaense* Saito, Bando and Noda, 1970**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 77, p. 283, pl. 31, figs. 5-7
Holotype: IGPS no. 86745 (fig. 7)
Loc. No. 1; (about 500 m SW of Abuzaki, Teshima Island, Tonosho-cho, Shodo-gun, Kagawa Prefecture
Teshima Formation
Miocene (Eocene)

***Vasticardium tochiensis* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 64, pl. 3, figs. 13-15
Holotype: TKD no. 10126 (figs. 13, 14)
Loc. No. 2, Michinosawa, Oyamada-shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture; 36°46'50"N, 140°13'10"E: Paratype, Loc. No. 1, Nanatsuishi, Oyamada-shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture, 36°47'05"N, 140°13'40"E
Kobana Formation
Miocene

***Velopecten survivans* Matsumoto, 1930**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), no. 3, p. 106, pl. 40, figs. 16-18
Holotype: depository unknown
Northern foot of Takadate hill, a short distance W of the Kumanodo shrine, Kumanodo, Takadate-mura, Natori-gun (Natori City), Miyagi Prefecture (38°12'N, 140°51'E)

Moniwa Formation

Miocene

(Synonyms with ***Nanaochlamys notoensis* (Yokoyama)** by Hatai and Nisiyama (1952))

***Venatomya yamauchii* Itoigawa, 1960**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 272, pl. 2, figs. 13a-14
Holotype: ESN no. 20027 (figs. 13a-b), Paratype: ESN no. 20028 (same locality)
Tsukiyoshi (S23), (Akeyo-machi, Tsukiyoshi), Mizunami City, Gifu Prefecture
Tsukiyoshi facies of the Akeyo Formation
Miocene

***Venericardia (Cyclocardia) abesinaensis* Otuka, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 1-2, p. 94, pl. 11, fig. 10
Holotype: GT no. 4281
Valley floor of a tributary of the Aabeshinai-gawa, about 2.5 km W of the Shibunnai pass, Nakagawa-mura (-cho), Teshio Province, Hokkaido (44°40'06"N, 142°01'10"E)
Wakkauenbetsu Formation
Miocene
(***Cyclocardia abesinaensis* (Otuka)** by Hatai and Nisiyama (1952))

***Venericardia (Cyclocardia) akagii* Kanehara, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 3-4, p. 159, pl. 15, fig. 13
Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952)
Shihorokabetsu, Yubari-gun (Side cliff of Shihorokabetsu-gawa, a short distance S of Shikanotani Station, Yubari-machi, Yubari-gun (Yubari City), Ishikari Province, Hokkaido; 43°01'54"N, 141°58'07"E)
Poronai Formation
Oligocene
(***Cyclocardia akagii* (Kanehara)** by Hatai and Nisiyama (1952))

***Venericardia (Cyclocardia) aomoriensis* Chinzei, 1961**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 13, pt. 1, p. 110, pl. 1, figs. 9-11
Holotype: CM no. 8655
About 500 m W of Kenyoshi, Nagawa-machi (Loc. 4), Sannohe-gun, Aomori Prefecture
Togawa Formation
Pliocene

***Venericardia (Cyclocardia) araii* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 173, pl. 3, fig. 9
Holotype: TKD no. 5695, Paratype; TKD no. 5604 (loc. No. 112)

Loc. No. 126, a small valley cliff, about 600 m S of the Kurao Elementary School, Hio, Ogano-machi, Chichibu-gun, Saitama Prefecture: Paratype; Loc. No. 112, a left river side cliff, Tomita, Chichibu City, Saitama Prefecture
Ushikubitoge Formation
Oligocene (early Miocene)

***Venericardia (Cyclocardia) chichibuensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 172, pl. 2, figs. 13a-b

Holotype: TKD no. 5603

Loc. No. 220, a large cliff of NW side of Mt. Kannon-yama, Hio, Ogano-machi, Chichibu-gun, Saitama Prefecture

Nenokami Formation

Oligocene (early Miocene)

***Venericardia cipangoana* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 137, pl. 11, fig. 2

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Tostuka-ku, Yokohama City, Kanagawa Prefecture; 35°22'03"N, 139°32'05"E)

Naganuma Formation

Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

(*Megacardita cipangoana* (Yokoyama))

***Venericardia compressa* Yokoyama, 1890**

Palaeontogr., vol. 36, nos. 3-6, p. 196, pl. 25, figs. 4a-b

Holotype: Munich Mus. not numbered

Poronai, Sorachi-gun, Ishikari (Probably near the Poronai coal-mine, a short distance SE of the Poronai Station, Mikasayama-mura, Sorachi-gun, Ishikari Province, Hokkaido; 43°13'19"N, 141°54'52"E)

Poronai Formation

Cretaceous (Eocene)

(*Cyclocardia laxata* Yokoyama by Hatai and Nisiyama (1952))

***Venericardia crebricostata* (Krause)** reported by Otuka (1939) from the Pliocene (Pleistocene) Tanabu (Hamada) Formation, Aomori Prefecture

***Venericardia crenulicostata* Nomura 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 69, pl. 2, figs. 12a-16b

Holotype: IGPS no. 46221, Paratype, IGPS nos. 46224

650 m SE of Jo-tsusho-wan, Station no. 18, Tsusho-sho, Bryoritsu-gun, Shinchiku-shu:

Paratype: 800 m NE of Hakushaton, Station no. 12, Koryu-sho, Chikunan-gun, Shinchiku-shu, Taiwan

Bryoritsu Beds

Pliocene (Pleistocene)

(*Megacardita crenulicostata* (Nomura))

***Venericardia dodairensis* (Hatai and Nisiyama)** reported by Mizuno (1956) from the Oligocene Iwaki Formation (*Cyclocardia subnipponica* (Nagao) by Masuda and Noda (1976)); see *Cyclocardia dodairensis* Hatai and Nisiyama, 1952

***Venericardia elliptica* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 80, pl. 8, figs. 13, 18, pl. 11, figs. 7-12, 14-23, pl. 12, figs. 6, 20, 24

Holotype: UH no. 11185 (pl. 11, figs. 8-12, 14-19, pl. 12, figs. 20, 24), Paratype: UH nos. 385 (pl. 8, figs. 13, 18; Loc. T3-I), 11187 (pl. 11, figs. 20-23; loc. No. U6), 11192 and 11169 (pl. 11, fig. 7; loc. No. T15-K).

Loc. No. U5, 2630 m upstream U2 (U2: 2700 m N from the mouth of Penkemaya creek, middle tributary of Yubari River, Ishikari Province, Hokkaido; N42°59'30"N, 142°03'10"E; Paratype loc. no. T3-I, 300 m S from the railroad bridge on Ikusyunbetsu River, near Yayoi coal-mine, and southern cliff of Ikusyunbetsu River, Ishikari Province, Hokkaido; loc. No. U6, 2000 m upstream from U8, cliff of the older terrace of Yubari River near Kawamukai, and 1370 m SE of Shimizusawa Station, Ishikari Province, Hokkaido, loc. No. T15-K, upper course of Sikerebe creek, upper tributary of Syoro River, Kushiro Province, Hokkaido

Poronai Formation

Oligocene (late Eocene)

(*Cyclocardia elliptica* (Takeda): n. n. for the present species as *Venericardia (Cyclocardia) takedai* Honda, 1980 (Trans. Proc. Palaeont. Soc. Japan, N. S., no. 120, p. 466) because the species name is homonym (*V. elliptica* Douville, 1928 described from the Paleocene in India)

***Venericardia (Cyclocardia) enaensis* Kamada, 1962**

Palaeont. Soc. Japan, Spec. Pap., no. 8, p. 87, pl. 7, figs. 7, 8

Holotype: IGPS no. 79381 (fig. 7)

Igamesaku, Nagasaki, Ena-machi (Iwaki City), Fukushima Prefecture

Honya Formation

Miocene

***Venericardia expansa* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 77, pl. 8, figs. 15-17, 19-21, pl. 11, fig. 12, pl. 12, figs. 1, 2, 4, 5, 7, 8, 10-12, 14-16, 18, 19, 22, 23, 25

Holotype: UH no. 11186 (pl. 12, figs. 18-19, 22-23; loc. No. U5), Paratype: UH nos. 922 (pl. 12, figs. 10, 11, 14, 15; loc. No. T6-I), 11191 (pl. 12, fig. 8; loc. No. T2-I), 11193 (pl. 12, fig. 25; loc. No. T2-I), 338c (pl. 8, figs. 15-17, 19-21; Loc. No. T4-I), 11190 (pl. 12, fig. 7; Loc. No. H355) and 11168 (pl. 11, fig. 13; loc. No. T56-K)

Loc. No. U5, 2630 m upstream U2 (2700 m N from the mouth of Penkemaya creek, middle tributary of Yubari River, Ishikari Province, Hokkaido; 42°59'30"N, 142°03'19"E); Paratype, Loc. No. T6-I, southern cliff of Ikusyunbetsu river. 1800 m W from

the junction with Ponbetsu creek, Ishikari Province, Hokkaido; Loc. No. T2-I, 600 m downstream from the railroad bridge on Ikusyunbetsu River, near Yayoi coal-mine, Ishikari Province, Hokkaido; Loc. No. T4-I, 200 m N of T3-1 (300 m S from railroad bridge of T2-1 and southern cliff of Ikusyunbetsu river, Ishikari Province, Hokkaido), Loc. No. T56-K, 106 point creek, a tributary of Tyaro river (exact point unknown), Kushiro Province, Hokkaido; Loc. No. H355, 700 m downstream from the junction of Takutakupeobetsu and Rukushicharo creek, upper tributaries of Charo river, Kushiro Province, Hokkaido Poronai Formation
Oligocene (late Eocene)

(*Cyclocardia expansa* (Takeda))

***Venericardia ezoensis* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 81, pl. 11, figs. 2, 3, 5, 6, pl. 12, fig. 3

Holotype: UH no. 338b (pl. 11, figs. 3, 5), Paratype: UH nos. 11172 (pl. 11, fig. 2; loc.: Sekiyu creek), and 11194 (pl. 11, fig. 6; loc. No. T2-I)

Loc. No. T4-I, 200 m N of T3-1 (300 m S from railroad bridge of T2-1 and southern cliff of Ikusyunbetsu river, Ishikari Province, Hokkaido); Paratype, Loc. No. T2-I, 600 m downstream from the railroad bridge on Ikusyunbetsu River, near Yayoi coal-mine, Ishikari Province, Hokkaido
Poronai Formation
Oligocene (late Eocene)

***Venericardia (Cyclocardia) ferruginea* (Clessin)** reported by Nomura and Hatai (1935) from the Pliocene (Pleistocene) Daishaka Formation, Aomori Prefecture; ***Cardita ferruginea* Clessin, 1888**

***Venericardia (Cyclocardia) ferruginea complexa* Ogasawara, 1977**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol), vol. 47, no. 2, p. 107, pl. 11, figs. 3a-b, pl. 12, fig. 4

Holotype: IGPS no. 95127 (pl. 12, fig. 2), Paratype: IGPS no. 95128-1, -14

Loc. no. KO-22; cliff, distant from the road, 300 m W of Kaminaka-machi, Kanazawa City, Ishikawa Prefecture (136 ° 42'25"N, 136 ° 40'57"E)

Omama Formation
Pliocene (early Pleistocene)

(*Cyclocardia ferruginea complexa* (Ogasawara))

Venericardia ferruginosa* Adams and Reeve** reported by Uozumi (1953) from the Pliocene (Pleistocene) Setana Formation, Hokkaido (Megacardita ferruginosa* (Adams and Reeve, 1850)** by Habe (1977))

***Venericardia funayamaensis* Araki, 1959**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 36, p. 163, pl. 18, fig. 3

Holotype: Mie Univ. no. ?

Road cutting on road leading from Funayama to Kozahara, Misato-mura, Age-gun, Mie Prefecture
Kaisekizan Formation
Miocene

***Venericardia granulicostata* Nomura 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 70, pl. 2, figs. 7a-d

Holotype: IGPS no. 46136

Exposure, 1450 m W of Hokko, Oboko Station no. 14, Shiko-sho, Byoritsu-gun, Shinchiku-shu, Taiwan

Bryoritsu Beds
Pliocene (Pleistocene)

(*Megacardita granulicostata* (Nomura))

Venericardia (Megacardita) granulicostata* (Nomura)** reported by Shuto (1957) from the Pliocene Takanabe Formation, Miyazaki Prefecture (Megacardita granulicostata* (Nomura)**)

Venericardia (Cyclocardia) hannibali* Clark** reported by Kanno (1960) from the Oligocene (early Miocene) Nenokami Formation, Saitama Prefecture (Cyclocardia hannibali* (Clark)**)

***Venericardia (Cyclocardia) harukii* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 600, pl. 3, figs. 3a-b
Holotype: GSJ no. 5010

Nakado, Oshima-machi, Nishisonogi-gun, Nagasaki Prefecture
Higire Formation
Oligocene

***Venericardia (Megacardita) hataii* Hirayama, 1973**

Sci. Rep. Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol.), p. 173, pl. 15, figs. 15-17

Holotype: GLR no. 1625 (fig. 15), Paratype: GLR no. 1626 (fig. 16, loc. No. B)

Loc. No. C, a right river cliff near the junction of the Arakawa and Urayama Rivers, about 500 m N of the Urayamaguchi Station, Kuna, Chichibu City, Saitama Prefecture: Paratype, Loc. No. B, a left cliff of the Arakawa River at Hiranita, about 1 km N of the Bushu-Nakagawa Station, Chichibu City, Saitama Prefecture

Hiranita Formation
Miocene

***Venericardia (Megacardita) hirayamai* Masuda and Noda, 1976**

Spec. Pub. Saito Ho-on Kai, no. 1, p. 10

Holotype: GLR no. 1628

River side cliff at Kuna, about 500 m north of the Urayamaguchi Station, Chichibu City, Saitama Prefecture

Hiranita Formation
Miocene

(N. n. for ***Venericardia (Megacardita) araii* Hirayama** (1973);

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol. no. 6, p. 174, pl. 15, fig. 23) as preoccupied by Kanno (1960))

***Venericardia (Cyclocardia) hobetsuensis* Hayasaka and Uozumi, 1954**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 8, no. 4, p. 399, pl. 25, figs. 1a-b

Holotype: UH no. 11262

Pankeopiraruka-sawa, a branch of the Hobetsu-gawa, Hobetsu-mura, Iburi-gun, Ishikari Province, Hokkaido

“Momijiyama” Formation

Oligocene

***Venericardia (Cyclocardia) inflata* Mizuno, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 5, p. 191, pl. 17, figs. 8a-b

Holotype: CM no. ?

Takamine and Yokoura, Sakito-machi, Nishisonogi-gun, Nagasaki Prefecture

Fukuura Tuff of the Oshima Formation

Paleogene

***Venericardia (Cyclocardia) inflata* Hayasaka and Uozumi, 1954**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 8, no. 4, p. 400, pl. 25, figs. 5a-b

Holotype: UH no. 11275

Momijiyama, Yubari City, Ishikari Province, Hokkaido

Momijiyama Formation

Oligocene

***Venericardia (Megacardita) japonica* Mizuno, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 5, , p. 191, pl. 17, figs. 10a-b

Holotype: CM no. ?

Takamine and Yokoura, Sakito-machi, Nishisonogi-gun, Nagasaki Prefecture

Fukuura Tuff of the Oshima Formation

Paleogene

***Venericardia (Megacardita) kiiensis* (Sowerby) reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture (*Megacardita kiiensis* (Yokoyama))**

***Venericardia (Megacardita) kiiensis cipangoana* Yokoyama reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture (*Magardidita kiiensis cipangoana* (Yokoyama))**

***Venericardia laxata* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 19, pl. 3, figs. 16-18

Holotype: GT no. ?

Yotsukura coast (Sea cliff of Yotsukura, Yotsukura-machi,

Iwaki-gun (Iwaki City), Fukushima Prefecture; 37 °07'N, 141 ° E)

Asagai Formation

Miocene (Oligocene)

(*Cyclocardia laxata* (Yokoyama) by Hatai and Nisiyama (1952))

***Venericardia (Venericardia) mandaica* (Yokoyama) see *Cardita mandaica* Yokoyama**

***Venericardia (Megacardita) megacostata* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 83, pl. 22, figs. 19a-c

Holotype: GKL no. 4482, Paratype: GKL no. 4661

Yamaji, Mino-mura, Koyu-gun, Miyazaki Prefecture

Kawabaru and Tano Members of the Koyu Formation, Miyazaki Group

Miocene

***Venericardia millegrana* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 154 (46), pl. 5 (1), figs. 13a-14b

Holotype: IGPS no. 50375 (fig. 13), Paratype: IGPS no. ? (fig. 14)

Kamikatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Glanus millegrana* (Nomura and Zinbo) by Habe (1977))

***Venericardia (Pleuromeris) minoensis* Itoigawa, 1960**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 4, p. 268, pl. 1, fig. 11

Holotype: ESN no. 20013, Paratype: ESN no. 20014 (same locality)

Anabora (S20-2), Toki City, Gifu Prefecture

Togari facies of the Akeyo Formation

Miocene

***Venericardia (Cyclocardia) momijiyamaensis* Masuda and Noda, 1976**

Spec. Pub. Saito Ho-on Kai, no. 1, p. 9

Holotype: UH no. 11275

Momijiyama, Yubari City, Ishikari Province, Hokkaido

Momijiyama Formation

Oligocene

(N. n. for *Venericardia (Cyclocardia) inflata* Hayasaka and Uozumi (1954; Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 8, no. 4, p. 400, pl. 25, figs. 5a-b) as preoccupied by Mizuno, 1952, Trans. Proc. Palaeont. Soc. Japan, N. S., no. 5)

***Venericardia (Cyclocardia) myogadaniensis* Itoigawa, 1958**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 4, p. 261, pl. 1, fig. 7

Holotype: JC no. 600102

Loc. no. Km 55, small valley about 1 km E of Myogadani,
Kamo City, Niigata Prerecture
Nishiyama Formation
Pliocene

***Venericardia nakamurai* Yokoyama, 1923**

Jour. Coll. Sci. Tokyo Univ., vol. 44, art. 7, p. 5, pl. 1, fig. 6
Sogippo, Saishu (Cheju) Island, Korea
Sogippo Formation
Pliocene (Pleistocene)
(Reported from the Pliocene Sawane Formation by Yokoyama
(1926) (*Miodontiscus nakamurai* (Yokoyama)))

***Venericardia nipponica* Yokoyama, 1911**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p.
8, pl. 3, figs. 5a-b
Holotype: GT no. ?
In the shaft of the colliery in the Manda Mine (about 150 m NE
of of the large pond, and about 700 m E of the contact point of
the two main roads) at Manda, Arao-machi, Tamana-gun (Arao
City), Kumamoto Prefecture (32°59'50"N, 130°27'04"E)
Yotsuyama Formation
Upper Eocene
(*Venericardia* (*Venericor*) *nipponica* Yokoyama by Hatai and
Nisiyama (1952))

***Venericardia* (*Cyclocardia*) *ochiaiensis* Chinzei, 1958**

Venus, vol. 20, no. 1, p. 120, pl. 7, figs. 1, 2, 4, 5, 7-14
Holotype: CM no. 8501 (figs. 1, 2), Paratype: CM nos.
8502-8510
Exposure, 150 m W of Ochiai, Kindaichi-mura, Ninohe-gun
(Ninohe City), Iwate Prefecture
Kubo Formation
Pliocene
(*Cyclocardia ferruginea ochiaiensis* (Chinzei))

***Venericardia* (*Megacardita*) *ommaensis* Ogasawara, 1977**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 47, no. 2, p. 106,
pl. 10, figs. 2, 5, pl. 13, fig. 3
Holotype: IGPS no. 95122, Paratype: IGPS nos. 95123-1, -7
Loc. no. KO-15; river-side cliff of Asano-gawa, 400 m W of
Tagamihon-machi, Kanazawa City, Ishikawa Prefecture (13°
641'42"N, 36°31'42"E)
Omima Formation
Pliocene (early Pleistocene)
(*Megacardita ommaensis* (Ogasawara))

***Venericardia onukii* Masuda and Takegawa, 1965**

Saito Ho-on Kai Mus., Res. Bull., no. 34, p. 12, pl. 1, figs. 15-22
Holotype: IGPS no. 90828 (figs. 18a-b) (originally DGS no.
4683)
Loc. No. 13, river cliff about 200 m downstream of Dam,
Taniyama, northwest of Ashitate, Murata-machi, Shibata-gun,

Miyagi Prerecture (38°08'27"N, 140°43'10"E)
Fukuda Formation
Miocene

***Venericardia orbica* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 8, pl. 1, fig.
10
Holotype: GT no. ?
Ishibatake, Nishiki-mura (River cliff N of Ishibatake, Nishiki,
Iwaki (Ishibatake, Futtsu-machi, Iwaki City), Fukushima
Prefecture (36°55'N, 140°45'05"E)
Kamenno Formation
Miocene

Cyclocardia orbica (Yokoyama) by Hatai and Nisiyama
(1952))

***Venericardia orbicularis* Yokoyama, 1923**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 7, p. 5, pl. 1, fig.
6
Holotype: UT no. ?
Seikiho (Sogippo), Saishu Island, Korea
Seikiho (Sogippo) Formation
Pliocene (early Pleistocene)
(Originally described as *Venericardia ferruginea* var.
orbicularis Yokoyama; reported by Nomura and Hatai (1936)
from the Miocene Tanagura Formation, Fukushima Prefecture)

***Venericardia* (*Megacardita*) *osawanoensis* Tsuda, 1959**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 74, pl. 2,
figs. 6-9
Holotype: JC no. 140016 (fig. 6)
Tszuzara (Loc. No. 19, 20), Osawano-machi, Kaminiikawa-gyn,
Toyama Prerecture
Kashio Alternation of the Kurosedani Formation
Miocene

***Venericardia* (*Cyclocardia*) *otatsumei* Uozumi, 1955**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 19, p. 76, pl. 12, fig.
2
Holotype: UH no. 11366
Kanegazawa, a branch of the Yubari-gawa, Shimizusawa,
Yubari City, Hokkaido
Wakkabane Formation
Paleogene

***Venericardia* (*Megacardita*) *oyamai* Shuto, 1957**

Mem. Fac. Sci., Kyushu Univ., Ser. D, vol. 6, no. 2, p. 82, pl. 22,
figs. 15, 16
Holotype: GKL no. 4658 (fig. 15), Paratype: GKL nos. 4659,
4660
Tonogori, Tonogori-mura, Koyo-gun, Miyazaki Prerecture
Tonogori Member of the Honjogawa Formation, Miyazaki Group
Miocene (uppermost Miocene)

***Venericardia pacifera* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 18, pl. 4, figs. 1, 2

Holotype: GT no. ?

Hannukizawa, Yoshima (Hannukizawa, Yoshima-mura, Iwaki-gun (Koma-machi Nakakoma), Fukushima Prefecture; 37°04'N, 140°51'E)

Asagai Formation

Miocene (Oligocene)

(*Cyclocardia pacifera* (Yokoyama) by Hatai and Nisiyama (1952))

***Venericardia (Megacardita) panda* (Yokoyama) see *Cardita panda* Yokoyama, 1926**

Venericardia (Cyclocardia) paucicostata (Krause) reported by Sawada (1962) from the Pliocene (Pleistocene) Chinkope Formation, Hokkaido; *Cardita paucicostata* Krause, 1885

Venericardia (Miodontiscus) prolongata nakamurai (Yokoyama) reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture (*Miodontiscus prolongata nakamurai* (Yokoyama))

***Venericardia quadriangulata* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 16, no. 2, p. 155 (47), pl. 5 (1), figs. 15a-16b

Holotype: IGPS no. 50385 (fig. 15), Paratype: IGPS no. ? (fig. 16)

Kamikatsutsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Glanus quadriangulata* (Nomura and Zinbo))

***Venericardia ryukyuensis* Nomura and Zinbo, 1936**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 18, no. 3, p. 240 (12), pl. 11 (1), figs. 7a-8b

Holotype: IGPS no. 53144 (figs. 7a-b), Paratype: IGPS no. 54151 (figs. 8a-b)

Gabusoga, Hanezi-mura, Kunigami-gun, Okinawa-jima (Nago City, Okinawa Prefecture); Paratype, Nakoshi, Haneji-mura, Kunigami-gun (Nakoshi, Haneji, Nago City), Okinawa Prefecture

Shimaziri Beds (Haneji Formation)

Pliocene (Pleistocene)

***Venericardia satisparva* Mizuno and Inoue, 1969**

Bull. Geol. Surv. Japan, vol. 20, no. 10, p. 653, pl. 30, fig. 11

Holotype: GSJ no. ?

The river cliff along the river Ikushunbetsu-gawa, Mikasa City, Hokkaido

B zonule of the Poronai Formation

Oligocene (upper Eocene)

Venericardia (Cyclocardia) shiogamensis Nomura reported by Tanaka (1961) was miss spell of *siogamensis*

***Venericardia siogamensis* Nomura, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 212, pl. 17, fig. 11

Holotype: SM no. 2553

Western side cliff of the Ajiri hill, about 500 m N of Ajiri, and about 300 m E of the crossing point of the two roads at Nakanoshima, Shiogama City, Miyagi Prefecture (38°18'47"N, 141°02'17"E)

(Chiganoura Formation)

Miocene

(*Cyclocardia siogamensis* (Nomura) by Hatai and Nisiyama (1952))

***Venericardia subnipponica* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 55, pl. 14, figs. 19, 19a

Holotype: GS no. 36405, Paratype: GS no. 36405 (pl. 14, figs. 1-5, 10, 11, 18, pl. 13, figs. 9, 14)

(Beach rocks along the sea coast, about 800 m E of) Taya, Ashiya-machi, Onga-gun, Fukuoka Prefecture (33°54'36"N, 130°40'18"E)

Yamaga Formation

Oligocene

(*Venericardia (Venericor ?) subnipponica* Nagao by Masuda and Noda (1976))

***Venericardia (Cyclocardia) takamiyaensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 1970, p. 64, pl. 2, figs. 3a-b

Holotype: ESN no. 30007

Loc. No. K35, Ashisaka, Misato-mura, Age-gun, Mie Prefecture Oi Formation

Miocene

***Venericardia tokudai* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 79, pl. 12, figs. 13, 17, 21

Holotype: UH no. 3552 (fig. 17), Paratype: UH no. 338a (pl. 12, fig. 13; Loc. No. T4-I), 11167 (pl. 12, fig. 21; Loc. No. S4)

Ikusyunbetsu (exact locality unknown), Mikasa-machi, Sorachi-gun, Ishikari Province, Hokkaido; Paratype, T4-I, 200 m N of T3-I (300 m S of the railroad bridge on Ikusyunbetsu river near Yayoi coal-mine. Southern cliff of Ikusyunbetsu river, Ishikari Province, Hokkaido, Loc. No. S4, near S2 (Hobetsu test well no. 2, 4350 m N from the mouth of Penkeopiraruka creek, upper tributary of Hobetsu river, Iburu Province, Hokkaido.

Poronai Formation

Oligocene

***Venericardia tokunagai* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 18, pl. 3, figs. 10, 11

Holotype: GT no. ?

Obisa (Obisa, Obisa-mura (Okubo-machi), Futaba-gun (Iwaki City), Fukushima Prefecture; 37 °08'08"N, 140 °58'E)

Asagai Formation

Miocene (Oligocene)

(*Cyclocardia tokunagai* (Yokoyama) by Hatai and Nisiyama (1952))

***Venericardia* (*Cyclocardia*) *vestitoides* Mizuno, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 5, p. 190, pl. 17, figs. 7a-c

Holotype: CM no. ? (figs. 7a-b)

Takamine and Yokoura, Sakito-machi, Nishisonogi-gun, Nagasaki Prefecture

Fukuura Tuff of the Oshima Formation

Paleogene

Venericardia (*Cyclocardia*) *yakatagensis* Clark reported by Kanno (1960) from the Oligocene (early Miocene) Ushikubitoge Formation, Saitama Prefecture

***Venericardia* (*Pleuromeris*) *yakuojiensis* Shibata, 1970**

Jour. Earth Sci., Nagoya Univ., vol. 18, no. 1, p. 64, pl. 2, fig. 4

Holotype: ESN no. 30008

Loc. No. Y1, Kubo (Katadakubo), Tsu City, Mie Prefecture

Katada Formation

Miocene

***Venericardia* (*Cyclocardia*) *yokoyamai* Oyama and Mizuno, 1958**

Bull. Geol. Surv. Japan, vol. 9, no. 9, p. 601; Type, *Venericardia compressa* Yokoyama, (1890; Paleontographica, vol. 36, p. 196, pl. 25, figs. 4a-b (non Reeve, 1843))

Holotype: ?

Ikusyunbetsu, Sorachi Province, Hokkaido (precise locality unknown)

Poronai Formation

Cretaceous (Oligocene)

***Venericardia* *yoshidai* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 57, pl. 12, fig. 14

Holotype: GS no. 36327

(Pass-side cutting on the boundary between Oyama-mura and Arita-machi, about 500 m NW of the shrine at) Obo, Arita-machi, Nishimatsuura-gun, Saga Prefecture (38 °12'07"N, 129 °52'36"E)

Kishima Formation

Oligocene

(*Cyclocardia yoshidai* (Nagao))

***Venerupis* ? *hirosegawana* Nomura, 1938**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol), vol. 19, no. 2, p. 262, pl. 34, figs. 9a-b, 10

Holotype: SM no. 2447, Paratype, SM no. 2447

Goroku cliff along the right bank of the Hirosegawa, Aoba-ku, Sendai City, Miyagi Prefecture (38 °16'N, 140 °49'E)

Tatsunokuchi Formation

Pliocene

(Synonymous with *Tapes* (*Ruditapes*) *japonica* Deshayes by Oyama (1961: Bull. Geol. Surv. Japan, vol. 12, no. 5))

***Venerupis* (*Siratoria*) *microsiratori* Kanno see *Siratoria microsiratori* (Kanno) and *Tapes microsiratori* Kanno, 1958**

***Venerupis* (*Amygdala*) *philippinarum* (Adams and Reeve) see *Venus philippinarum* Adams and Reeve, 1850**

***Venerupis* (*Siratoria*) *siratoriensis* (Otuka) see *Paphia siratoriensis* Otuka, 1934**

Venerupis (*Amygdala*) *takagii* (Masuda) see *Tapes* (*Ruditapes*) *takagii* Masuda (*Tapes* (*Ruditapes*) *takagii* (Masuda) by Masuda and Noda (1976))

***Venerupis* (*Amygdala*) *variegata kioroshiensis* Hirayama and Ando, 1954**

Venus, vol. 18, no. 2, p. 110, pl. 4, figs. 1-8

Holotype: TKD no. 10173 (figs. 1, 2), Paratype: TKD nos. 10174, 10175

Kioroshi, Hossaku, about 3 km SW of Kioroshi-machi, Inba-gun (Inzai City), Chiba Prefecture (35 °49'38"N, 140 °07'25"E), Paratype: Cliff near the Kioroshi Primary School, a little E of Kioroshi-machi (35 °50'40"N, 140 °09'10"E), Inba-gun (Inzai City), Chiba Prefecture

Kioroshi Formation

Pleistocene

***Ventricola faveolata miyazakiensis* Shuto, 1957**

Jour. Geo. Soc. Japan, vol. 63, no. 745, p. 569, text-figs. 4-1 - 4

Holotype: GKL no. 4451 (text-fig. 4-1), Paratype: GKL nos. 4248 (fig. 13), 4242, 4253, 4257, 4315

Kano, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture: Paratype; Akatani, Takaoka-machi, Higashimorogata-gun, Miyazaki Prefecture; Haigano, Tano-machi, Miyazaki-gun, Miyazaki Prefecture

Tano and Kawabaru Members of the Miyazaki Group

Miocene

***Venus* (?) *arisanensis* Yokoyama, 1928**

Rep., Imp. Geol. Surv., no. 101, p. 79, pl. 8, fig. 6

Holotype: GSJ no. ?

East of Sachihara, Hagioka and Hinata in (Taiko-gun) Sinchik-syu, Taiwan

Lower Arisan Beds

Pliocene

***Venus (Chione) byoritsuensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 84, pl. 3, figs. 7a-b

Holotype: IGPS no. 48061

Chu-tsusho-wan Station no. 48, Tsusho-sho, Byoritsu-gun, Shinchiku-shu, Taiwan

Byoritsu Beds

Pliocene (Pleistocene)

(*Ventricoloidea byoritsuensis* (Nomura))

***Venus (Chione) chitaniana* (Yokoyama) see *Chione chitaniana* Yokoyama, 1926**

***Venus (Chione) ensifera chehalisensis* (Weaver) see *Chione ensifera chehalisensis* Weaver, 1912**

***Venus furtiva* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 15, pl. 12, fig. 6

Holotype: GT no. ?

Kosiba (Koshiha, Obisa-mura (Okubo-machi), Futaba-gun (Iwaki City), Fukushima Prefecture; 37 °08'05"N, 140 °59'05"E)

Asagai Formation

Miocene (Oligocene)

(*Liocyra furtiva* (Yokoyama) by Hatai and Nisiyama (1952))

***Venus (Ventricolaria) kimatai* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 27, pl. 8, figs. 10-12b

Holotype: MFM no. 10036, Paratype: MFM nos. 10037, 10038

Nakahida, Toki City, Gifu Prefecture (Loc. no. 111)

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

***Venus laetifica* Yokoyama, 1928**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 2, pt. 7, p. 360, pl. 68, fig. 10

Holotype: GT no. ?

Kaigasawa, Higashiyama, Echigo (Valley W of Tochio-machi, Koshi-gun (Tochio City), Niigata Prefecture; 37 °28'30"N, 139 °59'E)

(Shiraiwa Formation)

Pliocene

(*Chione laetifica* (Yokoyama) by Hatai and Nisiyama 81952))

***Venus mitsuiana* Yokoyama, 1911**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 10, pl. 1, figs. 5a-b

Holotype: GT no. ?

In the shaft (277 ft deep) of the colliery in the Manda Mine, (about 150 m NE of the large pond, and about 700 m E of the contact point of two main roads) at Manda, Arao-machi, Tamana-gun (Arao City), Kumamoto Prefecture (32 °59'50"N, 130 °27'04"E)

Yotsuyama Formation

Upper Eocene

***Venus (Chione) miurensis* Shikama, 1973**

Sci. Rep., Tohoku Univ., 2nd Ser. (Geol.), Spec. Vol., no. 6 (Hatai Mem. Vol), p. 200, pl. 17, fig. 17

Holotype: YCM GP-525-17

Loc. No. 10; Housing area of Daimyoji-Syoei-danchi, Kinugasa, Yokosuka City, Kanagawa Prefecture (35 °15'37"N, 139 °39'40"E)

Zushi Formation

Miocene

(*Chione miurensis* (Shikama) by Masuda and Noda 81976))

***Venus okadana* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 240, pl. 2, fig. 9

Holotype: GT no. ? , Paratype: GT no. ? (pl. 2, fig. 8) (designated by Hatai and Nisiyama (1952))

In the upper course of the Okada-gawa, Numata-mura (-machi), Uryu-gun, Ishikari Province, Hokkaido (Precise locality unknown)

Lower Okada (Okada Formation)

Miocene

(*Neogenlla okadana* (Yokoyama))

***Venus ozawai* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 9, p. 351, pl. 39, fig. 5

Holotype: GT no. ?

Hirugaya (N side of pond in valley 500 m NW of Hirugaya, Hagima-mura (Sagara-cho), Haibara-gun, Shizuoka Prefecture; 34 °43'02"N, 138 °10'07"E)

Sagara Group

Miocene

***Venus rigida* Gould** reported by Matsumoto (1930) from the Pliocene Tatsunokuchi Formation, Miyagi Prefecture; ***Callithaca adamsi* (Reeve, 1863)** by Hatai and Nisiyama (1952)

***Venus sannosawaensis* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 239, pl. 3, fig. 6

Holotype: GT no. ?

Sannosawa, Shiroki-gawa, Uryu-gun (Stream-side of a valley N of the entrance of the Shiroki-zawa, Numata-machi, Iryu-gun, Ishikari Province, Hokkaido; 43 °59'18"N, 141 °57'03"E)

Lower Shiroki (Shiroki Formation)

Paleocene (Eocene)

Venus (Chione) securis* Shumard** reported by Nomura (1935) from the Miocene Narusawa Formation, Iwate Prefecture (Mercenraia* sp.)**

***Venus sigaramiensis* Makiyama, 1927**

Chikyu (Globe), vol. 8, no. 2, p. 187, pl. 3, fig. 7

Holotype: GK no. ?

A short distance N of Shimosoyama, Shigarami-mura, Kamiminochi-gun Nagano Prefecture (36°40'N, 138°07'E)

Shigarami Formation

Pliocene

(*Mercenari sigaramiensis* (Makiyama) by Hatai and Nisiyama (1952))

Venus (Mercenaria) stimpsoni Gould reported by Yokoyama (1923) from the Miocene Fujina Formation, Shimane Prefecture (*Mercenaria yokoyamai* (Makiyama) by Hatai and Nisiyama (1952))

***Venus (Chione) taiwanensis* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 1, p. 86, pl. 1, figs. 12a-13b

Holotype: IGPS no. 47771

Hanpeizan, Okayama-gun, Takao-shu, Taiwan

Riukiu Limestone (Ryukyu Limestone)

Pleistocene

(*Veremolpa taiwanensis* (Nomura))

***Venus (Chione) tayaensis* Nomura and Hatai, 1939**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-6, p. 59, figs. 1a-b

Holotype: SM no. ?

Cliff of Sannai-gawa (River), opposite Taya, Iwamisannai-mura (Kawabe-machi), Kawabe-gun, Akita Prefecture (39°42'N, 140°17'E)

Taya Formation (Sasaoka Formation)

Miocene

***Venus terrena* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 15, pl. 2, fig. 19

Holotype: GT no. ?

Tengasawa, Oyamada (Tengasawa, Oyamada Okubo-machi, Obisa-mura, Futaba-gun (Iwaki City), Fukushima Prefecture; 37°08'04"N, 140°57'06"E)

Asagai Formation

Miocene (Oligocene)

(*Liocyra terrena* (Yokoyama) by Hatai and Nisiyama (1952))

Venus toreuma Gould reported by Nomura and Onisi (1940) from the Miocene Nittera Formation, Miyagi Prefecture (*Mercenraia* ? sp.)

***Venus (Chione) y-iizukai* Kanehara, 1937**

Jour. Geol. Soc. Japan, vol. 44, p. 794, pl. 25 (13), figs. 1-4

Holotype: GS no. ? (figs. 1, 2), Paratype, GS no. ? (figs. 3, 4)

Shumarinai, Horokanai, Ishikari and Sekiyu-zawa, Hokuryu-mura, Etaibetsu (Hokuryu-machi, Uryu-gun, Sorachi Province), Hokkaido

Etaibetsu dark grey shale (Mashuke Formation ?)

Miocene

***Venus (Chione) yabei* Nomura and Zinbo, 1934**

Sci. Rep., Tohoku Imp. Univ. 2nd Ser. (Geol.), vol. 16, no. 2, p. 156 (48), pl. 5 (1), figs. 18a-b

Holotype: IGPS no. 50651

Kamikatetsu, Kikai-jima, Kikai-cho, Oshima-gun, Kagoshima Prefecture

Ryukyu Limestone

Pleistocene

(*Ventricoloidea yabei* (Nomura and Zinbo))

***Venus yokoyamai* Makiyama, 1927**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 1, no. 1, art. 1, p. 46, pl. 2, fig. 8.

Syntype: GK no. 220

Honohashi (about 500 m W of Honohashi, Saigo-mura (Kakegawa City) and 2.5 km N of the Kakegawa railway station, Shizuoka Prefecture; 34°47'02"N, 138°00'06"E)

Dainichi Formation (Kakegawa Group)

Pliocene

(*Mercenaria yokoyamai* (Makiyama) by Hatai and Nisiyama (1952))

***Veremolpa tartaroensis* Kanno, O'Hara and Caagusan, 1982**

Geol. Palaeont. Southeast Asia, vol. 24, p. 80, pl. 15, figs. 11a-12b

Holotype: JUE no. 10025, Paratype: JUE no. 10026

River floor and the river side bank of the Madlum River, near the Tartaro Bridge, San Miguel, Bulacan, Central Luzon, Philippines

Tartaro Formation

Upper Miocene

***Volachlamys wuchiensis* Masuda and Hunag, 1993**

Jour. Geol. Soc. China, vol. 36, no. 3, p. 265, pl. 2, figs. 15-18

Holotype: NTUM no. 93-063

Loc. no. SLT 33, Kurichulin Formation in Shuiliitungchi section, Taiwan

Kuerichulin Formation

Late Miocene-Early Pliocene

Volsella modiola* (Linnaeus) see *Mytilus modiola* Linne, 1758**Volsella (Amygdalum) izirii* Otuka, 1943**

Jour. Geol. Soc. Japan, vol. 50, no. 592, p. 225, pl. 2, fig. 9

Holotype: GT no. ?

Loc. no. S 36 (Upper course of the Karasu-gawa, about 80 m E of the bridge immediately N of the bank-mark (674 m) on Bansei highway, Najano-mura, Shinobu-gun (Fukushima City), Fukushima Prefecture

Taihei Formation (Nashidaira Formation ?)

Miocene

***Volsella tugaruana* Nomura and Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13 nos. 3-4, p. 279, pl. 33, figs. 4, 6, 8

Holotype: SM no. 8481

Middle course of the Komatazawa, a tributary of Aiuchi-gawa, Aiuchi-mura (Shiura-mura), Kitatsugaru-gun, Aomori Prefecture (41°04'N, 140°22'06"E)

Isomatsu Formation

Oligocene (early Miocene)

***Volsella yokoyamai* Hatai and Nisiyama, 1949**

Jour. Paleont., vol. 23, no. 1, p. 90, pl. 23, figs. 13, 14

Holotype: GS no. 72504

Near the Mimatsu Colliery, Ogawa, Kawabe-mura (-machi), Iwaki-gun (Iwaki City), Fukushima Prefecture (36°54'01"N, 140°47'05"E)

Iwaki Formation

Oligocene

***Vepricardium kyushuense* Shuto, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 37, p. 210, pl. 25, figs. 7, 8, 18, 21, 22, Text-fig. 2A

Holotype: GKL no. 4770, Paratype: GKL no. 4767, 4769, 4771, 4891 and 4905

Azukino (MI-4853), Sanzai-mura, Koyu-gun (Saito City), Miyazaki Prefecture: Paratype; Yamaji (MI-5070), Mino-mura, Koyu-gun (Saito City), Miyazaki Prefecture

Tano Member (Holotype), and Kawabaru, Tsuma and Tonogori Members (Paratype) of the Koyu Formation

Miocene

***Vepricardium (Vepricardium) okamotoi* Taguchi, 1990**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 160, p. 609, figs. 6-1a – 10b, 7

Holotype: MFM no. 20015, Paratype: MFM no. 20016-20017, 20022, 20025, 20027, 20031, 20033, 20034, 20037

Niida, Tsuyama City, Okayama Prefecture; 35°03'05"N, 134°04'01"E

Yoshino Formation of the Katsuta Group

Middle Miocene

***Vepricardium taiwanensis* Masuda and Huang, 1990**

Bull. Nat. Mus. Nat. Sci. (Taiwan), no. 2, p. 153, pl. 6, figs. 17-20, pl. 7, figs. 1-2

Holotype: NMNS no. 003306 (Loc. no. KS 651C), Paratype: NMNS no. 003305 (Loc. no. KS 660), 003308 (Loc. no. KS 159A)

Kuanysinshan Sandstone, Wuchi section, central Taiwan; Paratype (Loc. no. KS 651C); Kuanyinshan Sandstone at Wachi section and, KS 159A, Kuanyinshan Sandstone at Peikangchi section

Kuanyinshan Sandstone

Middle Miocene

Veremolpa mindanensis (Smith) reported by Shuto (1960) from the Pliocene Takanabe Formation, Miyazaki Prefecture

***Veremolpa reticulata* Noda, 1980**

Sci. Rep. Inst. Geosci. Univ. Tsukuba, Sec. B, vol. 1, p. 92, pl. 11, fig. 11, pl. 12, figs. 26a-b

Holotype: IGUT no. 10411

Loc. no. 435: Road side cliff, about 500 m NW of Shakenbaru, Tamagusuku-mura, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

Veremolpa scabra (Hanley) reported by Shuto (1960) from the Pliocene Takanabe Formation, Miyazaki Prefecture

Vesicomya kawadai (Aoki) reported by Kamada (1962) from the Miocene Honya Formation, Fukushima Prefecture

Volsella akanudaensis Kuroda reported by Tanaka (1959) from the Miocene Bessho Formation, Nagano Prefecture (*Modiolus akanudaensis* (Kuroda) by Masuda and Noda (1976))

***Volsella arakawensis* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 166, pl. 1, figs. 11, 12

Holotype: TKD no. 5625 (fig. 11), Paratype: TKD no. 5786

Loc. No. 615, a river side cliff, about 100 m downstream of the Arakawa bridge, Arakawa-mura, Chichibu-gun, Saitama Prefecture

Nagura Formation

Miocene

(*Modiolus arakawensis* (Kanno) by Masuda and Noda (1976))

Volsella (Volsella) difficilis Kuroda and Habe reported by Itoigawa (1958) from the Pliocene Nishiyama Formation, Niigata Prefecture (*Modiolus difficilis* (Kuroda and Habe) by Masuda and Noda (1976))

Volsella nipponica Oyama reported by Takayasu (1961) from the Pliocene Sasaoka Formation, Akita Prefecture (*Modiolus nipponica* (Oyama) by Masuda and Noda (1976))

***Volsella yamasakii* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 10, no. 2 (Art. 6), p. 136, pl. 4, figs. 13, 14

Holotype: UK no. ? (right valve)

Cliff along the Cape Mary, western part of the abandoned village Matchgar in Schmidt Peninsula, Sakhalin, Russia

Matchgar horizon 6

Miocene?

(*Mytilus yamasakii* (Makiyama); immature of *Mytilus matchgarensis* (Makiyama) ?)

***Volsella yokoyamai* Hatai and Nisiyama, 1952**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 3, p. 89: Type, *Modiola modiolus*, Yokoyama (1924; Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 20, pl. 4, figs. 7, 8)

Syntype: UT no. ?

Dodaira, Misawa, Kubota-mura (Iwaki City), or Takinakayama, Kadono-mura (Kadono, Iwaki City), Fukuohima Prefecture Iwaki Beds (Iwaki Formation)

Oligocene

(*Modiolus yokoyamai* (Hatai and Nisiyama) by Masuda and Noda (1976))

***Wallucina habei* Itoigawa, 1955**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 22, no. 2, p. 139, pl. 6, figs. 1, 2

Holotype: JC no. 1300051

Loc. No. 111, Kamigiri, Iwamuro-machi, Ena-gun, Gifu Prefecture

Kubohara Sandstone

Miocene

***Wallucina okumurai* Itoigawa, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 25, p. 2, pl. 1, figs. 1, 2.

Holotype: JC no. 1500001 (fig. 1), Paratype: JC no. 1500002

River side cliff of Shukubora valley, about 100 m SW of the bridge at S of Shukubora, Hiyoshi-cho, Mizunami City, Gifu Prefecture; 35°24'06"N, 137°16'E

Shukunohora Sandstone

Miocene

(*Pillucina* (*Wallucina*) *okumurai* (Itoigawa) by Masuda and Noda (1976))

***Woodia concentrica* Yokoyama, 1920**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 39, art. 6, p. 141, pl. 11, fig. 7

Holotype: GT no. ?

Naganuma (Road-side cutting at Naganuma, Totsuka-ku, Yokohama City, Kanagawa Prefecture; 35°22'03"N, 139°32'05"E)

Naganuma Beds (Naganuma Formation)

Lower Musashino, Pliocene (Pleistocene, ca. 0.5 Ma)

(Synonymous with *Lucinoma acutilineata* (Conrad) by Hatai and Nisiyama (1952))

***Yabepecten* Masuda, 1963 n. gen.**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 52, p. 149.

Type-species; *Pecten tokunagai* Yokoyama (1911; Jour. Geol. Soc. Tokyo, vol. 18, no. 208, p. 4, pl. 1, figs. 3, 4) described from the Pliocene (Pleistocene) Koshiba Formation, Kanagawa Prefecture

Yabepecten tokunagai (Yokoyama) see *Pecten tokunagai* Yokoyama, 1911

***Yoldia* (*Yoldia*) *akanensis* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 550, pl. 4, figs. 1-3, 10

Holotype: UH no. 12221 (fig. 10), Paratypes: HU nos. 12220, 12218 (fig. 2), 12219 (fig. 3)

Exposure, 5 km upstream of the Charo-gawa from the Kamicharo Primary School, Kamicharo, Shiranuka-machi, Shiranuka-gun, Kushiro Province, Hokkaido: Paratype; middle course of the Teshibetsu-gawa, Yubetsu Coal-Mine, Akan-mura (-cho), Akan-gun, Kushiro Province, Hokkaido

Onbetsu Formation

Oligocene

***Yoldia aokii* Nomura and Zinbo, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 5, pl. 1, fig. 10

Holotype: SM no. 5791

(Northeastern side cliff on the small valley, about 170 m W of Furukuchi railway station on the Western Rikuu Line, and about 700 m S of the primary school at) Furukuchi, Tozawa-mura, Mogami-gun Yamagata Prefecture; 38°44'02"N, 140°08'37"E) Furukuchi Formation

Miocene

(*Portlandia* (*Megayoldia*) *aokii* (Nomura and Zinbo) by Hatai and Nisiyama (1952))

***Yoldia* (*Yoldia*) *asagaiensis* Makiyama, 1934**

Mem. Coll. Sci., Kyoto Imp. Univ., ser. B, vol. 10, no. 2, art. 6, p. 129, pl. 3, fig. 1

Holotype: GK no. ?

Yotsukura cliff (Sea cliff of Yotsukura-machi, Iwaki City, Fukushima Prefecture; 37°07'N, 141°E)

Asagai Formation

Oligocene

***Yoldia* (*Yoldia*) *biremis* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 552, pl. 4, figs. 4-6, 12

Holotype: UH no. 12291 (figs. 5, 5a), Paratype: UH nos. 11210, 1005, 11222 (fig. 12)

The Maruyama-sawa, a branch of the Kotanbetsu-gawa, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido: Paratype; the Poronai-sawa, Asahi Coal-Mine, Iwamizawa City, Ishikari Province, Hokkaido

Chikubetsu Formation and Takinoue Formation (Paratype)

Miocene (early middle Miocene)

***Yoldia breviscapa* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 3, pt. 6, p. 245, pl. 4, fig. 5

Holotype: GT no. ?

In the Showa-gawa, near Showa coal-mine, Nurata-mura, Uryu-gun, Isikari Province (Numata-machi, Sorachi Province), Hokkaido (Precise locality unknown, Ebishima)

Lower Tachibetsu

Paleogene (Oligocene)

(*Portlandia (Megayoldia) breviscapa* (Yokoyama) by Hatai and Nisiyama (1952))

***Yoldia ensicula* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 4, p. 137, pl. 16, fig. 6

Holotype: GT no. ?

Zone III (Northeastern slope of the Matsugata-yama, near the head of the valley (Shiobara-guchi), about 1 km NE of the summit, Hookine-mura (Shiobara-machi), Shioya-gun, Tochigi Prefecture; 36°56'20"N, 139°51'E)

(Kanomatazawa Formation)

Pliocene (Miocene)

***Yoldia (Cnesterium) ennsifera akeyoensis* Itoigawa and Shibata, 1975**

Bull. Mizunami Fossil Mus., no. 2, p. 17, pl. 6, figs. 7-14

Holotype: MFM no. 10007, Paratype: MFM nos. 10008-10010

Matsugase, Akeyo-cho, Mizunami City, Gifu Prefecture (Loc. no. 136)

Nataki Conglomerate of the Oidawara Formation, Mizunami Group

Miocene

Yoldia (Cnesterium) excavata Dall reported by Kaseno and Matsuura (1965) from the Pliocene (Pleistocene) Omma Formation, Ishikawa Prefecture

***Yoldia gratiosa* Yokoyama, 1923**

Japan. Jour. Geol. Geogr., vol. 2, no. 1, p. 8, pl. 2, figs. 5a-b

Holotype: GT no. ?

(Lake coast about 200 m W of the contact point of the two roads N of) Kagami, Kimachi-mura (Shinji-cho), Yatsuka-gun, Shimane Prefecture (35°25'N, 132°58'E)

(Fujina Formation)

Miocene

(*Portlandia (Megatoldia) gratiosa* (Yokoyama) by Hatai and Nisiyama (1952))

***Yoldia (Orthoyoldia) haboroensis* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 556, pl. 4, figs. 7, 7a, 13

Holotype: UH no. 12255 (figs. 7, 7a), Paratype: UH no. 12254

Futamata, in upper stream of the Haboro-gawa, Haboro-machi, Tomamae-gun, Teshio Province, Hokkaido

Chikubetsu Formation

Miocene

***Yoldia hikoshimensis* Hirayama, 1956**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 5, no. 45, p. 102, pl. 6, fig. 1

Holotype: TKD no. 10430, Paratype: TKD no. 10431

Loc. no. B, sea cliff, a little south of Watase, Hikoshima,

Shimonoseki City, Yamaguchi Prefecture

"Hikoshima Formation" (Ashiya Group)

Oligocene

(*Yoldia (Tepidolea) hikoshimensis* Hirayama by Masuda and Noda (1976))

***Yoldia hurukutiensis* Nomura and Zinbo, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 6, p. 3, pl. 1, fig. 11

Holotype: SM no. 5701

(Northeastern side cliff of the small valley, about 170 m W of the Furukuchi railway station on the Western Rikuu Line, and about 70 m S of the primary school at) Furukuchi-mura (Tozawa-mura), Mogami-gun, Yamagata Prefecture (38°44'02"N, 140°08'37"E)

Furukuchi Formation

Miocene

(*Portlandia hurukutiensis* (Nomura and Zinbo) by Hatai and Nisiyama (1952))

***Yoldia iwatensis* Hatai, 1940**

Bull. Biogr. Soc. Japan, vol. 10, no. 9, p. 121, pl. 1, figs. 5, 6

Holotype: GS no. 61348

Cliff of the valley below Kadonosawa, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate Prefecture (40°16'N, 141°20'E)

Kadonosawa Formation

Miocene

Yoldia japonica (Adams and Reeve) see *Nucula japonica* Adams and Reeve, 1850

Yoldia (Cnesterium) johanni Dall reported by Nomura (1935) from the Pliocene (Miocene) Hitosao (Urushikubo) Formation, Fukushima Prefecture

***Yoldia kawadai* Hirayama, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 18, p. 48, pl. 3, fig. 1

Holotype: TKD no. 10105

Loc. No. 2, Michinosawa, Oyamada-shimogo, Oyamada-mura (Bato-machi), Haga-gun, Tochigi Prefecture; 36°46'50"N, 140°13'10"E

Kobana Formation

Miocene

(*Yoldia (Tepidolea) kawadai* Hirayama by Masuda and Noda (1976))

Yoldia (Cnesterium) keppeliana notabilis Yokoyama reported by Otuka (1936) from the Pliocene Wakimoto (Sasaoka) Formation, Akita Prefecture: see *Yoldia notabilis* Yokoyama, 1922

***Yoldia (Yoldia) laudabilis* Yokoyama, 1924**

Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 3, p. 22, pl. 4, figs. 11,

12

Holotype: GT no. ?

Shinyashiki (Arayashiki), Suetsugu (In creek of Shimoyashiki, Suetsugu, Hisanohama-machi, Futaba-gun (Iwaki City), Fukushima Prefecture (37 °10'N, 141 °E)

Asagai Formation

Miocene (Oligocene)

(*Portlandia laudabilis* (Yokoyama) by Hatai and Nisiyama (1952))

***Yoldia (Yoldia) laudabilis h-matsuii* Mizuno, 1954**

Cenoz. Res., no. 20, p. 18 (407), pl. 1, figs. 6, 7

Holotype: CM no. ?

Boring core of the Kusano, Furukawa Koma Coal mining, Uname, Kusama-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture

Iwaki Formation

Oligocene

(*Yoldia hmatsuii* Mizuno by Masuda and Noda (1976))

Yoldia lischkei Smith reported by Yokoyama (1925) from the Pliocene Shirado (Miocene Taga) Formation, Ibaraki Prefecture (*Portlandia lischkei* (Smith) by Hatai and Nisiyama (1952))

***Yoldia lucidaiformis* Nomura and Zinbo, 1935**

Saito Ho-on Kai Mus., Res, Bull., no. 6, p. 4, pl.1, fi. 9

Holotype: SM no. 5751

(Northeastern side cliff of the small valley about 170 m W of the Furukuchi railway station on the Western Rikuu Line, and about 70 m S of the primary school at) Furukuchi, Furukuchi-mura (Tozawa-mura), Mogami-gun, Yamagata Prefecture (38 ° 44'02"N, 140 °08'37"E)

Furukuchi Formation

Miocene

(*Portlandia lucidaiformis* (Nomura and Zinbo) by Hatai and Nisiyama (1952))

***Yoldia (Kalayoldia) macroshema* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 562, pl. 6, figs. 6-9

Holotype: UH no. 12245 (figs. 7, 7a), Paratypes: UH nos. 13349, 12235, 12247 (fig. 9), 12244 (fig. 6), 12224, 12225, 122238

Loc. No. 183, upper stream of the Okuyokunnui-sawa, Yubetsu Coal-Mine, Akan-mura (-cho), Akan-gun, Kushiro Province, Hokkaido

Honbetsu Formation

Pliocene

Yoldia (Tepidolea) naganumana (Yokoyama) reported by Uozumi (1957) from the Pliocene (Pleistocene) Naganuma Formation, Kanagawa Prefecture

***Yoldia (Cnesterium) notabilis* Yokoyama, 1922**

Jour. Coll. Sci., Tokyo Imp. Univ., vol. 44, art. 1, p. 196, pl. 17,

fig. 10

Holotype: UT no. ?

Otake, Hassei-mura, Inba-gun, Shimosa (Otake, Narita City), Chiba Prefecture

Upper Musashino (Kioroshi Formation)

Pleistocene

***Yoldia (Cnesterium) notabilis aidaensis* Tanaka, 1959**

Bull. Fac. Educ., Shinshu Univ., no. 10, p. 75, pl. 1, figs. 11, 12

Holotype: Shunshu Univ., no. 150, Paratype: SU no. 128

Lower stream of the Shimizu-zawa, Aaida-ku, Shiga-mura, Higashi-chikuma-gun, Nagano Prefecture; 36 °21'07"N, 138 ° 03'16"E

Aoki Formation

Miocene

***Yoldia omorii* Aoki, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 3, no. 17, p. 30, pl. 2, fig. 18

Holotype: TKD no. 5922

Loc. No. 5, small cliff of roadside at Shimokatayose, Kabeya, Taira City (Iwaki City), Fukushima Prefecture; 37 °04'18"N, 140 °51'59"E

Kabeya Formation (Honya Formation)

Miocene

***Yoldia ovata* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 70, pl. 6, figs. 17, 23, 24, pl. 7, figs. 5-9

Holotype: UH no. 11165 (fig. 9), Paratype: UH no. 11177 (pl. 7, fig. 6; Loc. No. T56-K), and 11178 (pl. 7, fig. 7; Loc. No. T62-K), 11163 (pl. 6, figs. 23, 24), 11164 (pl. 6, fig. 17; Loc. No. T15-K), 11165

Loc. No. T72-K, near TT76-K; Chikubenninai creek Kushiro Province, Hokkaido; 43 °15'N, 143 °54'E: Paratype (11163), upper stream of the Hobetsu river, Iburi Province, Hokkaido (exact locality unknown) Hokkaido: Paratype, T56-K, 106 point creek, a tributary of Choro river, Kushiro Province, Hokkaido (exact locality unknown), Loc. No. T62-K, Chikupenninai creek, upper tributary of Charo river, Kushiro Province, Hokkaido, Loc. No. T15-K, upper course of Shikerebe creek, upper tributary of Shoro river, Kushiro Province, Hokkaido.

Poronai Formation

Oligocene

(*Portlandia (Portlandella) ovata* (Takeda) by Masud and Noda (1976))

***Yoldia (Yoldia) rhombica* Kanno, 1958**

Sci. Rep., Tokyo Kyoiku Daigaku, Sec. C, vol. 6, no. 55, p. 160, pl. 1, figs. 5, 6

Holotype: TKD no. 5661 (fig. 6), Paratype: TKD no. 5662 (loc. No. 605)

Loc. No. 607, a road side exposure, near the Akahira bridge, Izumida, Ogano-machi, Chichibu-gun, Saitama Prefecture:

Paratype; loc. no. 605, a river side cliff, about 150 m downstream of loc. No. 603, a left side cliff, Hagidaira, Chichibu City, Saitama Prefecture
Nagura Formation
Miocene

***Yoldia sagittalia* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 10, pl. 2, fig. 11

Holotype: GT no. ? (designated by Hatai and Nisiyama (1952))
Between Kosai and Aburahira, Sekimoto-mura (Sekimoto-machi, Kitaibaraki City, Ibaraki Prefecture) (36°50'06"N, 140°46'E)
Mizunoya Formation
Miocene

***Yoldia (Yoldia) saitoi* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 551, pl. 4, figs. 8-9

Holotype: UH no. 3761 (figs. 8, 8a), Paratype: UH no. 12237
Middle course of the Honbetsu-gawa, near Ikushunbetsu Primary School, Ikushunbetsu-machi, Mikasa City, Ishikari Province, Hokkaido
Poronai Formation
Oligocene

***Yoldia scapha* Yokoyama, 1926**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 1, pt. 7, p. 247, pl. 31, fig. 11

Holotype: GT no. ? , Paratype: GT no. ? (figs. 7-10) (designated by Hatai and Nisiyama (1952))

Beds C, Embets (Embetsu-cho, Teshio-gun, Rumoi Province, Hokkaido (Precise locality unknown))

Wakkanai Formation
Pliocene (Miocene)

(*Portlandia (Megayoldia) scapha* (Yokoyama) by Hatai and Nisiyama (1952))

***Yoldia scaphoides* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser. (Geol.), vol. 12, no. 1, p. 23, pl. 2, figs. 29, 29a

Holotype: GS no. 35987, Paratype: GS no. 35987 (same locality)

(Beach rocks along the sea coast, about 800 m NE of) Taya, Ashiya-machi, Onga-gun Fukuoka Prefecture; 33°54'36"N, 130°40'18"E)

Yamaga Formation (Ashiya Group)

Oligocene

(*Portlandia (Megayoldia) scaphoides* (Nagao) by Hatai and Nisiyama (1952))

***Yoldia sobrina* Takeda, 1953**

Stud. Coal Geol., Hokkaido Assoc., Coal Min., no. 3, p. 69, pl. 6, figs. 13-17, pl. 7, figs. 1-4

Holotype: UH no. 348

Loc. No. T3-I, 300 m S from the railroad bridge on Ikusyunbetsu River near Yayoi coal-mine, southern cliff of Ikusyunbetsu River, Ishikari Province, Hokkaido

Poronai Formation

Oligocene

(*Yoldia (Tepidoleda) sobrina* Takeda by Masuda and Noda (1976))

***Yoldia (Megayoldia) thraciaeformis* Storer (see *Portlandia (Megayoldia) thraciaeformis* Storer by Masuda and Noda (1976))**

***Yoldia tokunagai* Yokoyama, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 5, p. 10, pl. 2, figs. 15, 18

Holotype: GT no. ?, Paratype: GT no. ? (figs. 12, 14, 16) (designated by Hatai and Nisiyama (1952))

Saku, Ino-mura, Iwaki-gun (Iwaki City), Fukushima Prefecture (37°02'N, 140°54'E)

Kamenoo Formation

Miocene

(*Portlandia (Hataiyoldia) tokunagai* (Yokoyama) by Masuda and Noda (1976))

***Yoldia (Yoldia) uranoi* Uozumi, 1957**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 9, no. 4, p. 553, pl. 4, figs. 11, 14, text-fig. 2

Holotype: UH no. 12245a (fig. 14), Paratype: UH no. 12245b (fig. 11)

Noya, in middle course of the Shibechari-gawa, Shizunai-machi, Hidaka Province, Hokkaido

Noya Formation

Miocene

***Yoldia (Yoldia) watasei* Kanehara, 1937**

Japan. Jour. Geo. Geogr., vol. 14, nos. 3-4, p. 158, pl. 15, fig. 5

Holotype: GSJ no. ?, destroyed, described by Hatai and Nisiyama (1952))

Shihorokabetsu, Yubari-gun, Ishikari (Side cliff of the Shihorokabetsu-gawa, a short distance S of Shikanotani Station, Yubari City, Hokkaido; 43°01'53"N, 141°58'07"E)

Poronai Formation

Oligocene

(*Portlandia (Portlandella) watasei* (Kanehara) by Masuda and Noda (1976))

***Yoldia (Cnesterium) yabei* (Yokoyama) see *Leda yabei* Yokoyama, 1924**

***Yoldia yamatana* Nomura and Zinbo, 1937**

Saito Ho-on Kai Mus. Res. Bul., no. 13, p. 165, pl. 22, fig. 1

Holotype: SM no. 2301, Paratype: SM no. 9301 (same locality)

Magarikawa (River-side cliff along the Magari-kawa, about 250 m SW of the primary school at Magarikawa, Sakegawa-mura,

Mogami-gun, Yamagata Prefecture; 38 °49'07"N, 140 °11'39"E)
Hanezawa Formation
Pliocene (Miocene)
(*Yoldia (Cnesterium) yamatana* Nomura and Zinbo by
Hatai and Nisiyama (1952))

***Zirfea hataii* Masuda and Noda, 1969**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 75, p. 133, pl. 14,
figs. 3, 4

Holotype: IGPS no. 86742 (fig. 3)

Goroku cliff along the right bank of the Hirose-gawa, near the
waterway tunnel of the Sankyozawa Electric Plant, Aoba-ku,
Sendai City, Miyagi Prefecture; 38 °16'N, 140 °49'E

Tatsunokuchi Formation

Pliocene; early Pliocene

***Zirfaea subconstricta* kotorai Otuka, 1934**

Jour. Fac. Sci., Niigata Univ., Ser. 2, vol. 3, no. 2, p. 621, pl. 48,
fig. 53

Holotype: GT no. 1525

Southeast valley of Shiratori, about 400 m SE of the temple at
Shiratori, Nisatai-mura, Ninohe-gun (Ninohe City), Iwate
Prefecture (40 °14'05"N, 141 °20'23"E)

Shiratori Formation

Miocene

***Zirfaea tsubetsuensis* Morita and Titova, 1996**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), vol. 63, no. 2, p. 161,
pl. 10, figs. 7-13

Holotype: CBM no. PS-1832, Paratype: CBM nos. PS-1833,
1834, 1835

Loc. no. S08, reiver side cliff of the Tsubetsu-gawa, west of
Mito, Tsubetsu-cho, Abashiri Province, Hokkaido

Uppermost part of the Siltstone Member of the Tusbetsu
Formation

Early Miocene

***Zozia uetanii* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, sec. 2, vol. 5, pt. 2, p. 34, pl.
2, fig. 16

Holotype: GT no. 10015

(East path side wall of the small valley at Shinchikuho, a short
distance S of the contact point of the road and the path, about
600 m W of the Shrine at Miyauchi, Shobara-machi, Hiba-gun,
Hyogo Prefecture; 34 °51'41"N, 133 °02'15"E)

(Shobara Formation)

Miocene

(*Azorinus uetanii* (Otuka))

**Paleozoic and Mesozoic Gastropoda,
Monoplacophora and Hyolitha**

Tomoki Kase

National Science Museum, Tokyo 169-0073, Japan

Gastropoda

***Acirsa (Hemiacirsa) miyakoensis* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 241,
pl. 38, fig. 11

Holotype: IGPS no. 66428

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Acirsa (Hemiacirsa) ofutatoensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 165, pl. 18, fig. 15

Holotype: NSM PM15162

Kinchakuiwa, Massaki, Ofunato City, Iwate Prefecture

Hijochi Formation

Lower Cretaceous

***Acmaea? moshiensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 53, pl. 3, fig. 2

Holotype: UMUT MM15416, Paratypes: UMUT MM15417–
15420

Moshi, Iwaizumi-cho, Iwate Prefecture

Tanohata Formation

Lower Cretaceous

***Actaeon sachalinensis* Nagao, 1939 [sic] see *Acteon?*
sachalinensis Nagao, 1939**

***Acteon? sachalinensis* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p.
236, pl. 22, figs. 6, 7

Syntypes: GMH no. 8328, two specimens

Nishihogawa near Kawakami colliery, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Acteonina (Ovactaeonina) yeharai* Nagao, 1934
[typographical error of *Actaeonina*] see *Colostracon*
(Ovactaeonina) yeharai (Nagao, 1934)**

***Adiozoptyxis hidakensis* (Fukada, 1953)**

Jour. Fac. Sci. Hokkaido Univ., Ser. B, vol. 8, no. 3, p. 213, pl.
12, figs. 1–3; pl. 13, figs. 1–3

Syntypes: GMH? (missing)

Upper course of Soshubetsu, Hidaka-cho, Hokkaido

Lower Yezo Group

Lower Cretaceous

***Afrollonia matsushimensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 60, pl. 6, fig. 9

Holotype: UMUT MM15457, Paratypes: UMUT MM15458–
154616

Matsushima islet, Moshi, Iwaizumi-cho, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Ageria japonica* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 133, pl. 20, fig. 17

Holotype: IPMM 5C3R07

Haibe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Allocosmia? multicostata* (Hayasaka, 1943)**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 35,
pl. 1, fig. 5

Holotype; Taiwan National University (probably lost)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Amauopsis importuna* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 244,
pl. 35, fig. 8

Syntypes: GMH no. 7070

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Amberleya (Eucyclus) japonica* Kase in Kase and Maeda,
1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 306, pl.
34, fig. 15

Holotype: NSM PM15042, Paratype: NSM PM15043

Isejigaura, Choshi City, Chiba Prefecture

Isejigaura Formation

Lower Cretaceous

***Angyomphalus hashimotoi* Shikama and Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, New Series, no. 69, p. 214, pl.
25, fig. 1

Holotype: ASM 5015, Paratypes: ASM 5016–5018

Shuchikujo, Akiyoshi, Mine City, Yamaguchi Prefecture

Akiyoshi Limestone Group

Upper Carboniferous

- Anhyomphalus* (?) *okafujii* Shikama and Nishida, 1968 see *Anhyomphalus? okafujii* Shikama and Nishida, 1968
- Anhyomphalus? okafujii* Shikama and Nishida, 1968
Trans. Proc. Palaeont. Soc. Japan, New Series, no. 69, p. 216, pl. 25, fig. 5
Holotype: ASM 5020
Shuchikujo, Akiyoshi, Mine City, Yamaguchi Prefecture
Akiyoshi Limestone Group
Upper Carboniferous
- Anisomyon ezoensis* Nagao and Otatume, 1938
Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, vol. 4, nos. 3–4, p. 50, pl. 2, fig. 9
Holotype: GMH? (missing)
Hetonai, Tomiuchi, Hobetsu-cho, Hokkaido
Hakobuchi Group
Upper Cretaceous
- Aporrhais (Tessarolax) acutimarginatus* (Nagao, 1932)
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, 2(1), p. 43, pl. 6, figs. 10, 15.
Syntypes: IGPS no. 51254.
Kawakami colliery, Tohoyara-gun, Sakhalin.
Upper Ammonite Bed (Upper Yezo Group).
Upper Cretaceous.
- Aporrhais (Tessarolax) japonicus* (Yabe and Nagao, 1928)
Sci. Rep. Tohoku Imp. Univ., Second Ser., 9(3), p. 94, pl. 17, fig. 10.
Holotype: IGPS no. 22636.
Upper course of the Ikushumbetsu, Mikasa City, Hokkaido.
Upper Ammonite Bed (Upper Yezo Group).
Upper Cretaceous.
- Aptyxiella hideshimensis* Kase, 1984
Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 175, pl. 30, fig. 11
Holotype: UMUT MM15558, Paratypes: UMUT MM15559–15562
Hideshima, Miyako City, Iwate Prefecture
Tanohata Formation
Lower Cretaceous
- Arizonaella tuberculata* Kase and Nishida, 1988
Saito Ho-on Kai Spec. Publ. (Prof. Tamio Kotaka Commemorative Vol.), p. 258, pl. 1, figs. 1, 2
Holotype: NSM PM15379, Paratype: NSM PM15380
Higuchizawa, Ofunato City, Iwate Prefecture
Nakazato Formation
Middle Devonian
- Arrhoges (Latiala) hayamii* Kase, 1984
Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 145, pl. 22, fig. 9
Holotype: UMUT MM15615, Paratypes: UMUT MM15616–15618
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous
- Astraea* (s.l.) *kumasoana* Matsumoto, 1938 see *Paraturbo kumasoana* (Matsumoto)
- Ataphrus yokoyamai* Nagao see *Ataphrus (Ataphrus) yokoyamai* (Nagao)
- Ataphrus kitakamiensis* Nagao, 1934
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 235, pl. 39, fig. 7
Lectotype: GMH no. 6804
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous
- Ataphrus (Ataphrus) yokoyamai* Nagao, 1934
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 234, pl. 35, fig. 3
Holotype: GMH no. 7088
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous
- Ataphrus tesioensis* Nagao, 1939
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 214, pl. 20, fig. 14
Holotype: GMH no. 8290
Abeshinai near the postal service station, Nakagawa-cho, Hokkaido
Upper Yezo Group
Upper Cretaceous
- Ataphrus (Ataphrus) nipponicus* Kase in Kase and Maeda, 1980
Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 298, pl. 34, fig. 11
Holotype: NSM PM15007, Paratypes: NSM PM15005, 15006, 15008–15029
Kimigahama, Choshi City, Chiba Prefecture
Kimigahama Formation
Lower Cretaceous
- Atira depressus* (Nagao, 1939)
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 217, pl. 20, fig. 15
Holotype: GMH no. 8334
Takinosawa, Toyohara-gun, South Sakhalin
Upper Yezo Group

Upper Cretaceous

***Atira tricarinata* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 565, figs. 2.13–2.15

Holotype: NSM PM15405, Paratype: 15406.

Inakuraike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Avellana minima* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 265, pl. 36, fig. 12

Holotype: GMH no. 7071

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Avellana problematica* Nagao, 1932**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 1, p. 50, pl. 7, fig. 7

Holotype: GMH no. 8212

Left bank of the Abeshinai River, Nakagawa-cho, Hokkaido

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Bactroptyxis nobilis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 42, pl. 7, figs. 12, 13

Syntypes: NSM PM15634, 15635 (formerly GIYU M-74, 75)

Koike, Kashimamachi, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Bathraspira excavata* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 258, pl. 34, fig. 5

Holotype: GMH no. 7080

Northern coast of Raga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Bathrotomaria yokoyamai* (Hayasaka, 1943)**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 28, pl. 2, fig. 1, text-fig. 1

Holotype: Taiwan National University, probably lost

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone Group

Middle Permian

***Bellerophon (Bellerophon) hiulchiformis* Hayasaka, 1943**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 27, pl. 1, fig. 3

Holotype: Taiwan National University, probably lost

Kinshozan, Akasaka-cho, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Bellerophon (Bellerophon) kitakamiensis* Murata, 1971**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 82, p. 105, pl. 13, figs. 1–3

Holotype: IGPS no. 91364, Paratypes: IGPS nos. 91390A–D.

Motoiwazawa, Sumita-cho, Kesen-gun, Iwate Prefecture

Sakamotozawa Formation

Lower to Middle Permian

***Bellerophon (Bellerophon?) yabei* Murata, 1969**

Saito Ho-on Kai Mus., Res. Bull., no. 38, p. 12, pl. 1, figs. 8–10

Holotype: IGPS no. 91364, Paratypes: IGPS nos. 91365A, B

Kitazawa, Toyoma-cho, Tome-gun, Miyagi Prefecture

Toyoma Formation

Upper Permian

***Bellerophon (Sorobanobaca) matsumotoi* Nishida, 1969**

Saga Daigaku Kyoikugakubu Kenkyuronbunshu, no. 17, p. 84, pl. 1, fig. 1

Holotype: GS. D54, Paratypes: GS. D55–66

North slope of Mt. Ohirayma, Sakawa-cho, Kochi Prefecture

Takaoka Formation

Middle Permian

***Biplica osakensis* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 575, figs. 5.4, 5.5

Holotype: NSM PM15454, Paratypes: 15455, 15456

Sansaka, about 2.5 km southeast of Hakotsukuri, Hannan-cho,

Osaka Prefecture

Shindachi Formation

Upper Cretaceous

***Biplica sphaerica* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 575, figs. 5.10, 5.11

Holotype: NSM PM15457, Paratype: 15458

Roadside cliff about 1.2 km west of Sobura, Kaizuka City,

Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Boiotremus fukujiensis* Kase, Nishida and Niko, 1985**

Mem. Nat. Sci. Mus., Tokyo, no. 18, p. 31, pl. 1, fig. 2

Holotype: IGSH K0001, Paratypes: NSM PM15035, 15036 .

Southeast flank of Mt. Sorayama, Fukuji, Kamitakara-mura,

Gifu Prefecture

Fukuji Formation

Devonian

***Brotia wakinoensis* Kobayashi and Suzuki see *Brotiopsis wakinoensis* (Kobayashi and Suzuki)**

***Brotiopsis kobayashii* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 207, pl. 17, fig. 11 (B)

Lectotype: destroyed during the 2nd World War

Ryohori, Kinyo-men, Kato-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Kinbu Formation

Lower Cretaceous

***Brotiopsis kobayashii sinsyuensis* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 208, pl. 16, figs. 11–13

Syntypes: at least 30 specimens destroyed during the 2nd World War

0.5 – 1 km north of Kokusan-ri, Nado-men, at Hozantyo, at about 400 m north of Umatoge, Todo-men, at about 300 m northwest of the 134.3 m hill, Gyokuhotyo, all in Sinshu-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Shinshu Formation

Lower Cretaceous

***Brotiopsis wakinoensis* (Kobayashi and Suzuki, 1936)**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3–4, p. 256, pl. 29, fig. 14a

Holotype: UMUT MM7940a, plaster cast, Paratype: UMUT MM7940b (missing)

Ryohori, Kinyo-men, Kato-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Nakong Group

Lower Cretaceous

***Brunonia annulata* (Yokoyama, 1890)**

Palaeontographica, 36, p. 200, pl. 25, fig. 17

South of Kagahara, Nakazato-mura, Gumma Prefecture.

Lectotype: Bayerische Staatsammlung für Paläontologie und Historische Geologie, München, Germany

Ishido Formation.

Lower Cretaceous.

***Brunonia undulata* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 56, pl. 3, fig. 6

Holotype: UMUT MM15707, Paratype: UMUT MM15708

Hiraiga, Tanohata-mura, Iwate Prefecture

Tanohata Formation

Lower Cretaceous

***Bucania katoi* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7 nos. 3–4, p. 87, pl. 8, fig. 6

Holotype: UMUT PM0061

Taisei-ri, Bantatsu, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea

Chosen Group

Middle Ordovician

***Bucanopsis tsuibonensis* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 3, no. 8, p. 361, pl. 6, figs. 1–3

Holotype: UMUT PM0574, Paratypes: UMUT PM0575–0577

Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Bulimus rakutoensis* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 202, pl. 14, fig. 23

Holotype: destroyed during the 2nd World War

About 1 km northeast of Syoryu-do, Wakwan-yu, Shikkoku-gun, Kyongsang-bukdo (Keisho-hoku-do), South Korea

Kinbu Formation

Lower Cretaceous

***Calerobama cretacea* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 572, figs. 3. 8, 3. 9.

Holotype: NSM PM15438, Paratype: 15439

Shinike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Calliomphalus (Calliomphalus) aptianus* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 61, pl. 5, fig. 7

Holotype: UMUT MM15462

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Calliostoma? oji* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 297, pl. 34, fig. 7

Holotype: NSM PM15000, Paratypes: NSM PM15001–15004

Kimigahama, Choshi City, Chiba Prefecture

Kimigahama Formation

Lower Cretaceous

Capulus annulatus* Yokoyama see *Brunonia annulata* (Yokoyama)**Capulus cassidarius* Yokoyama, 1890**

Palaeontographica, 36, p. 177, pl. 18, fig. 11

Lectotype: Bayerische Staatsammlung für Paläontologie und Historische Geologie, München, Germany

Urakawa-cho, Hokkaido.

Upper Yezo Group.

Upper Cretaceous

“*Capulus*” *problematicus* (Nagao and Otatume, 1938)

Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, 4(3–4), p. 51, pl. 4,

- fig. 1.
Holotype: GMH?, missing.
Hetonai, Tomiuchi, Hobetsu-cho, Hokkaido.
Hakobuchi Group.
Upper Cretaceous.
- Cassiope (Cassiope) neumayri* (Nagao in Yabe, 1927)**
Sci. Rep. Tohoku Imp. Univ., 2nd Series, vol. 11, no. 2, pl. 3, fig. 7
Holotype: IGPS no. 35156 (missing)
Probably Kawaguchi Formation
Hinagu, Hinagu-cho, Kumamoto Prefecture
Lower Cretaceous
- Cassiope (Cassiopella) ogaii* Kase, 1984**
Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 117, pl. 18, fig. 8
Holotype: NSM PM15234, Paratypes: NSM PM15235–15238, 15124–15134
Sebayashi, Kagahara, Nakazato-mura, Gunma Prefecture
Sebayashi Formation
Lower Cretaceous
- Cassiope (Cassipella) angusta* Kobayashi and Suzuki, 1939**
Japan. Jour. Geol. Geogr., vol. 14, nos. 1–2, p. 223, pl. 13, fig. 5
Lectotype: UMUT MM7904
Takenouchi pass, southwest of Hinagucho, Kumamoto Prefecture
Kawaguchi Formation
Lower Cretaceous
- Cassiope (Gymnentome) sebayashiensis* Kase, 1984**
Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 116, pl. 19, fig. 14
Holotype: NSM PM15119, Paratypes: NSM PM15120–15123
Sebayashi, Kagahara, Nakazato-mura, Gunma Prefecture
Sebayashi Formation
Lower Cretaceous
- Ceratosiphon densestriatus* Kase in Kase and Maeda, 1980**
Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 314, pl. 36, fig. 1
Holotype: NSM PM15056, Paratypes: NSM PM15057–15062
Kimigahama, Choshi City, Chiba Prefecture
Kimigahama Formation
Lower Cretaceous
- Ceratosiphon giganteus* Kase, 1984**
Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 143, pl. 22, fig. 5
Holotype: NSM PM15158, Paratypes: NSM PM15159–15161
Coast of Kinchakuiwa, Massaki, Ofunato City, Iwate Prefecture
Hijochi Formation
Lower Cretaceous
- Cerishium pyramidaeforme* Nagao** [typographical error of *Cerithium*] see ***Oligoptyxis pyramidaeformis* (Nagao)**
- Cerithium* (s.l.) *ishikarensis* Nagao, 1939**
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, 4(1–2), p. 224, pl. 21, fig. 4
Holotype: GMH?, missing.
Asahi-machi, Yubari City, Hokkaido
Mikasa Formation.
Upper Cretaceous
- Cerithium* (*Cimocerithium*?) *miyakoense* Nagao** [error of *Cimolithium*] see ***Cimolithium miyakoense* (Nagao)**
- Cerithium* (*Cirsocerithium*) *reticulatum* Nagao** see ***Cirsocerithium reticulatum* (Nagao)**
- Cerithium* (*Metacerithium*) *rikuchense* Nagao** see ***Trypanotrochus rikuchensis* (Nagao)**
- Cerithium sanchusense* Yabe and Nagao in Yabe, Nagao and Shimizu, 1936** [erroneously written as “*Cerithium ishidoense* Yabe and Nagao”]
Sci. Rep. Tohoku Imp. Univ. Ser. 2, vol. 9, no. 2, p. 66, pl. 14, figs. 13, 14
Syntypes: IGPS no. 22487, 22545, three specimens
Ishido, Ohinata-mura, Nagano Prefecture
Ishido Formation
Lower Cretaceous
- Cimolithium miyakoense* (Nagao, 1934)**
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 254, pl. 36, fig. 1
Holotype: GMH no. 6803
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous
- Cirsocerithium reticulatum* (Nagao, 1934)**
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 253, pl. 39, fig. 11
Lectotype: GMH no. 6814
Haibe, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous
- Clisospira* (?) *chundongensis* Kobayashi, 1931**
Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 37, pl. 1, fig. 12
Holotype: UMUT PM0193
Chundong, Kenjiho, Kosshu-gun, Huanghae-do (Kokai-do), North Korea
Shorin bed, Chosen Group
Lower Ordovician

***Clisospira shorinensis* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 37, pl. 2, fig. 10

Holotype: UMUT PM0192

Chundong, Kenjiho, Koshu-gun, Huanghae-do (Kokai-do), North Korea

Shorin bed, Chosen Group

Lower Ordovician

***Columbellina brevisiphonata* Nagao, 1934** [error of *Colombellina*]

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 260, pl. 39, fig. 6

Lectotype: GMH no. 7086

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Colombellina (Colombellina) oginoi* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 146, pl. 23, fig. 14

Holotype: NSM PM16151 (formerly GIYU-122)

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Conotomaria oshimensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 49, pl. 1, fig. 2

Holotype: UMUT MM15415

Oshima islet, Moshi, Iwaizumi-cho, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Coreospira rugosa* Saito, 1936**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 3, p. 360, pl. 3, figs. 6–7

Holotype: UMUT PM1473, Paratypes: UMUT PM1474–1476

Southern slope of Oknobong hill, Chungwa, Pyong-namdo (Heian-nan-do), North Korea

Chosen Group

Lower Cambrian

***Colostracon (Ovactaeonina) yeharai* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 263, pl. 33, fig. 3

Lectotype: GMH? (missing)

Matsushima islet near Moshi, Iwaizumi-cho, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Cossmannia tahoto* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 30, pl. 6, fig. 1

Lectotype: NSM PM15611 (formerly GIYU M-41)

Koike, Kashimamachi, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Cryptoplocus abukumensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 39, pl. 5, fig. 4; pl. 6, figs. 3–5

Syntypes: NSM PM15625–156287 (formerly GIYU M-45–47, 59)

Koike, Koyamada and Tochikubo, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Cryptoplocus phalloides* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 40, pl. 5, figs. 2–4; text-fig. 7

Syntypes: NSM PM15629–15631 (formerly GIYU M-59–61)

South of Igo-misaki, Uminoura, Tanoura-cho, Kumamoto Prefecture

Sakamoto Formation

Upper Jurassic

***Cyclonema (?) sonrinensis* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 36, pl. 2, fig. 9

Lectotype: UMUT PM0190

Keiho-ri, Kenjiho, Koshu-gun, Huanghae-do (Kokai-do), North Korea

Shorin bed, Chosen Group

Lower Ordovician

Desmieria japonica* Nagao see *Otostoma japonicum* (Nagao)**Deussenia takinoikensis* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 568, fig. 3. 14

Holotype: NSM PM15428

Takinoike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Discotectus crassus* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 236, pl. 35, fig. 9

Holotype: GMH no. 6785

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Drepanochilus elongatodigitatus* Nagao, 1934** [error of *Drepanocheilus*]

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 254, pl. 36, fig. 1.

Holotype: GMH no. 6803.

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation.

Lower Cretaceous

***Drepanochilus minimus* Kase in Hayami and Kase, 1981**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 121, p. 42, pl. 5, fig. 16

Holotype: NSM PM15100, Paratypes: NSM PM15101–15105

Sea bottom off the southern coast of Kuji, Kuji City, Iwate Prefecture

Upper Cretaceous

***Eccyliopecteris minimus* Kobayashi see *Lesueurilla minima* (Kobayashi)**

***Eccyliopecteris shirakii* Kobayashi see *Lesueurilla shirakii* (Kobayashi)**

***Eotomaria concava* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7, nos. 3–4, p. 93, pl. 10, fig. 4

Holotype: UMUT PM0076

Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Eriptycha japonica* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 317, pl. 34, fig. 12

Holotype: NSM PM15065, Paratype: NSM PM15066.

Kimigahama, Choshi City, Chiba Prefecture

Kimigahama Formation

Lower Cretaceous

***Euconia? shohakuensis* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 368, pl. 7, figs. 12, 13

Holotype: UMUT PM0591, Paratype: UMUT PM0592

Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Tsuibon bed, Chosen Group

Middle Ordovician

***Euconia? taihakuensis* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 368, pl. 7, fig. 7, 8

Holotype: UMUT PM0590

Kochiri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Tsuibon bed, Chosen Group

Middle Ordovician

***Euconospira nipponica* Hayasaka, 1953**

Jour. Fac. Sci. Hokkaido Univ., Ser. 4, vol. 8, no. 4, p. 350, pl. 20, figs. 1–2

Holotype: GMH, not registered

Nabeyama, Tochigi City, Tochigi Prefecture

Nabeyama Limestone

Middle Permian

***Euphemitopsis kitakamiensis* Murata, 1969**

Saito Ho-on Kai Mus., Res. Bull., no. 38, p. 11, pl. 1, figs. 1–7

Holotype: IGPS no. 91360, Paratypes: IGPS nos. 91361A–J

Kitazawa, Toyoma-cho, Miyagi Prefecture

Toyoma Formation

Upper Permian

***Euryzone onoi* Kase and Nishida, 1986**

Bull. Nat. Sci. Mus., Tokyo, Ser. C., vol. 12, no. 3, p. 85, figs. 6A, B

Holotype: NSM PM15321, Paratypes: NSM PM15322–15324

Higuchizawa, Ofunato City, Iwate Prefecture

Nakazato Formation

Middle Devonian

***Fujispira japonica* Kase and Nishida, 1986**

Bull. Nat. Sci. Mus., Tokyo, Ser. C., vol. 12, no. 3, p. 83, figs. 3A, 4A, B

Holotype: NSM PM15320

Higuchizawa, Ofunato City, Iwate Prefecture

Nakazato Formation

Middle Devonian

***Fusus* (s. l.) *volutodermoides* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 231, pl. 22, fig. 5

Holotype: GMH no. 8338

Ososhinaizawa, Abeshinai, Nakagawa-cho, Hokkaido

Upper Yezo Group

Upper Cretaceous

***Glabrocingulum* (*Ananias*) *shikamai* Nishida, 1969**

Saga Daigaku Kyoikugakubu Kenkyu-ronbunshu, vol. 17, p. 86, pl. 2, fig. 2

Holotype: GS. D73, Paratypes: GS. D74–77

Ohirayama mine, 1 km southeast of Sakawa JR station, Sakawa-cho, Kochi Prefecture

Ohirayama Limestone

Middle Permian

***Glabrocingulum* (*Glabrocingulum*) *toyomense* (Murata, 1969)**

Saito Ho-on Kai Mus. Res. Bull., no. 38, p. 15, pl. 2, fig. 10

Holotype: IGPS no. 91371, Paratypes: IGPS nos. 91372A–H, 91373–91377

Kitazawa, Toyoma-cho, Miyagi Prefecture

Toyoma Formation

Upper Permian

***Glauconia neumayri* Nagao see *Cassiope* (*Cassiope*) *neumayri* (Nagao)**

***Globularia? denselineata* (Nagao, 1939)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 220, pl. 20, fig. 16

Holotype: GMH 8323

Kawakami colliery, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Globularia (Globularia) izumiensis* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 565, figs. 2.19–2.20

Holotype: NSM PM15418, Paratypes: 15416, 15417, 15419–15427

Shinike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Globularia? neritiformis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 1154, pl. 27, fig. 1

Holotype: UMUT MM15574

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Graphidula laevigata* (Nagao, 1939)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 234, pl. 20, fig. 17

Holotype: GMH no. 8345

Kawakami, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Gyrodes japonicus* (Nagao, 1934) [= *Gyrodes munitus* (Forbes, 1846)]**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 245, pl. 38, fig. 3

Holotype: GMH no. 7082

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Gyrodes nagaoui* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 151, pl. 24, fig. 2

Holotype: UMUT MM15571, Paratype: UMUT MM15572

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Hampilina goniospira* Kobayashi, 1958**

Japan. Jour. Geol. Geogr., vol. 29, nos. 1–3, p. 116, pl. 8, figs. 1, 2

Holotype: UMUT MM2318, UMUT PM2319

Teibosan cliff, Bunkei, Kyongsang-bukdo (Keisho-hoku-do),

South Korea

Eiko Formation

Cambrian

***Hampilina alta* Kobayashi, 1958**

Japan. Jour. Geol. Geogr., 29(1–3), p. 116, pl. 8, figs. 3

Holotype: UMUT PM2320 (missing)

North of Chunghwa, Pyong-namdo (Heian-nan-do), North Korea

Chosen Group

Cambrian

***Harpagodes? sachalinensis* Yabe and Nagao, 1925**

Sci. Rep. Tohoku Imp. Univ., Second Ser., vol. 7, p. 122, pl. 29, figs. 11, 12

Syntypes: IGPS no. 8557

South of Cape Khojinji, Alexandrovsk, Sakhalin

Cape de la Jonquiere Group

Upper Cretaceous

***Hayamia rex* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 303, pl. 35, fig. 9

Holotype: NSM PM15031, Paratypes: NSM PM15030, 15032–15039

Kimigahama, Choshi City, Chiba Prefecture

Kimigahama Formation

Lower Cretaceous

***Hayamia choshiensis* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 305, pl. 35, fig. 4

Holotype: NSM PM15040, Paratype: NSM PM15041

Kimigahama, Choshi City, Chiba Prefecture

Kimigahama Formation

Lower Cretaceous

Helcion? problematicus* Nagao and Otatume see “*Capulus*” *problematicus* (Nagao and Otatume)**Helcionella acuticosta pacifica* Saito, 1936**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 3, p. 358, pl. 3, figs. 1–3

Holotype: UMUT PM1468, Paratypes: UMUT PM1469, 1470

Chunghwa, Pyongan-namdo (Heian-nan-do), North Korea

Ptychoparia bed, Redlichia shale

Lower to Middle Cambrian

***Helcionella coreanica* Kobayashi, 1958**

Japan. Jour. Geol. Geogr., vol. 29, nos. 1–3, p. 114, pl. 8, figs. 4, 5

Syntypes: UMUT PM2316, 2317

North of Chunghwa, Pyongan-namdo (Heian-nan-do), North Korea

Chosen Group

Cambrian

***Helicotoma amanoi* Kobayashi, 1958**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 11, no. 2, p. 87, pl. 5, fig. 6

Holotype: UMUT PM2304, Paratype: UMUT PM2303

Kan, northeast of Tot'am-ni, Kaunmyon, Mun'gyong-kun, Kyong-sang-bukdo (Keisho-hoku-do), South Korea

Todon Formation

Middle Ordovician

***Helicotoma kanekoi* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 35, pl. 1, fig. 8; pl. 2, fig. 3.

Holotype: UMUT PM0189, Paratype: UMUT PM0188

Chundong, Kenjiho, Koshu-gun, Huanghae-do (Kokai-do), North Korea

Tsuibon bed, Chosen Group

Lower Ordovician

***Helicotoma keizanensis* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 372, pl. 7, figs. 1–3

Holotype: UMUT PM0599, Paratype: UMUT PM0600

Keizan-son, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Tsuibon bed, Chosen Group

Middle Ordovician

***Helicotoma tamurai* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7, nos. 3–4, p. 95, pl. 11, fig. 4

Holotype: UMUT PM0081

Taisei-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Helicotoma yabei* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7, nos. 3–4, p. 95, pl. 11, fig. 5

Holotype: UMUT PM0080

Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Heteroptygmatis elegans* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 37, pl. 7, figs. 9–11

Syntypes: NSM PM15622–15624 (formerly GIYU M-71–73)

Koike, Kashimamachi, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Holopea tateiwai* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 36, pl. 2, fig. 8

Holotype: UMUT PM0191

Keiho-ri, Kenjiho, Koshu-gun, Huanghae-do (Kokai-do), North Korea

Shorin bed, Chosen Group

Lower Ordovician

***Homalopoma* (s.l.) *iwatense* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 79, pl. 5, fig. 2

Holotype: UMUT MM15484

Haibe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Hydrobia* (*Pachydrobia*) *gyokusoensis* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 201, pl. 14, fig. 17

Holotype: destroyed during the 2nd World War

Butsumendo, Gyokuso-men, Kato-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Kinbu Formation

Lower Cretaceous

***Itieria japonica* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 43, pl. 8, fig. 1

Holotype: NSM PM15636 (formerly GIYU M-76)

Paratypes: NSM PM15637–15644 [formerly GIYU-M-77–80

South of Igo-misaki, Uminoura, Tanoura-cho, Kumamoto Prefecture

Sakamoto Formation

Upper Jurassic

***Itomelania basicordata* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 203, pl. 14, figs. 24, 26

Holotype: destroyed during the 2nd World War

400 m north of Umatoge, Todomen, Shinshu-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Shinshu Formation

Lower Cretaceous

***Itruvia?* *uedai* (Matsumoto, 1938)**

Jour. Geol. Soc. Japan, vol. 45, p. 21, text-figs. 25, 26

Lectotype: UMUT MM7774

Hokigahana, Goshonoura island, Goshonoura-cho, Kumamoto Prefecture

Goshonoura Group

Upper Cretaceous

***Kawanamia onimarensis* Kase, 1988**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 149, p. 366, figs. 3. 10, 3. 11

Holotype: NSM PM15385, Paratypes: NSM PM15386, 15387

Onimaru Quarry, Onimaru, Ofunato City, Iwate Prefecture

Hikoroichi Formation

Lower Carboniferous

***Kitakamispira kanekoi* Kase and Nishida, 1988**

Saito Ho-on Kai Spec. Publ. (Prof. Tamio Kotaka Commemorative Vol.), p. 259, pl. 1, figs. 4, 5
Holotype: NSM PM15381, Paratypes: NSM PM15382, 15383
Higuchizawa, Ofunato City, Iwate Prefecture
Nakazato Formation
Middle Devonian

***Knightites (Retispira?) hanzawai* Murata, 1971**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 82, p. 106, pl. 13, figs. 4–6
Holotype: IGPS no. 91391, Paratypes: IGPS nos. 91392A–E
Motoiwazawa, Sumita-cho, Iwate Prefecture
Sakamotozawa Formation
Lower to Middle Permian

***Kobayashiella? mariensis* Kobayashi, 1962**

Jour. Fac. Sci. Univ. Tokyo, Sec.2, vol. 14, no. 1, p. 16, pl. 3, fig. 4
Holotype: UMUT PM3991
Song-ch'i, northeast of Machari, north of Nol-tari, Kangwon-do (Kogen-do), South Korea
Machari Formation
Middle Cambrian

***Labrocoispis kobayashii* (Kase and Nishida, 1986)**

Bull. Nat. Sci. Mus., Tokyo, Ser. C., vol. 12, no. 3, p. 79, figs. 2A–C
Holotype: NSM PM15315, Paratypes: NSM PM15317–15319
Higuchizawa, Ofunato City, Iwate Prefecture
Nakazato Formation
Middle Devonian

***Lepidotrochus (?) hataii* Hayasaka, 1966**

Sci. Rep. Kagoshima Univ., vol. 15, p. 29, pl. 1, figs. 4, 5
Syntypes: IGPS no. 87303, two specimens
1 km northwest of Hamada JR station, Shiogama City, Miyagi Prefecture
Rifu Formation
Upper Triassic

***Lesueurilla minima* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 370, pl. 4, figs. 5, 6
Holotype: UMUT PM0595
Kochiri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon bed, Chosen Group
Middle Ordovician

***Lesueurilla shirakii* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 369, pl. 7, figs. 4–6, 9–11

Syntypes: UMUT PM0593, 0594

Kochiri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon bed, Chosen Group
Middle Ordovician

***Liospira kawasakii* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7, nos. 3–4, p. 92, pl. 9, fig. 10
Holotype: UMUT PM0075
Shih-tao-kou, Pen-his-hu, northeast China
Toufang Group
Lower to Middle Ordovician

***Liospira lenticularis* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 33, pl. 2, fig. 5
Holotype: UMUT PM0184, Paratypes: UMUT PM0183, 0184
Shorin-ri, Kenjiho, Kosu-gun, Huanghae-do (Kokai-do), North Korea
Shorin bed, Chosen Group
Middle Ordovician

***Liospira shohakuensis* Kobayashi see *Euconia? shohakuensis* (Kobayashi)**

***Liospira taihakuensis* Kobayashi see *Euconia? taihakuensis* (Kobayashi)**

***Lissochilus hanaii* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 88, pl. 10, fig. 7
Holotype: UMUT MM15497
Haipe, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Lophospira bantatsuense* Kobayashi [error of *bantatsuensis*] see *Loxoplocus (Lophospira) bantatsuense* (Kobayashi)**

***Lophospira endoi* Kobayashi see *Loxoplocus (Lophospira) endoi* (Kobayashi)**

***Lophospira kinosakii* Kobayashi see *Loxoplocus (Lophospira) kinosakii* (Kobayashi)**

***Lophospira tateiwai* Kobayashi see *Loxoplocus (Lophospira) tateiwai* (Kobayashi)**

***Lophospira kodairai* Kobayashi see *Loxoplocus (Lophospira?) kodairai* (Kobayashi)**

***Lophospira konnoi* Kobayashi see *Loxoplocus (Lophospira) konnoi* (Kobayashi)**

- Lophospira subpulchella* Kobayashi see *Loxoplocus (Lophospira) subpulchella* (Kobayashi)
- Loxoplocus (Donaldiella) tetracarina* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, nos. 3-4, p. 92, pl. 9, fig. 9
Holotype: UMUT PM0074
Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea
Unkaku bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) bantatsuense* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, nos. 3-4, p. 88, pl. 8, fig. 8
Holotype: UMUT PM0063, Paratypes: UMUT PM0064, 0065
Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea
Unkaku bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) endoi* (Kobayashi, 1934)
Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 366, pl. 9, figs. 1-4
Holotype: UMUT PM0586
Kochi-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) kinosakii* (Kobayashi, 1934)
Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 367, pl. 9, figs. 27, 28
Holotype: UMUT PM0587
Kochi-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) tateiwai* (Kobayashi, 1934)
Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 367, pl. 9, figs. 5-7
Holotype: UMUT PM0588
Kochi-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira?) kodairai* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, nos. 3-4, p. 89, pl. 8, fig. 10
Holotype: UMUT PM0068
Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea
Unkaku bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) konnoi* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, nos. 3-4, p. 88, pl. 8, fig. 12
Holotype: UMUT PM0066
Unkaku-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea
Unkaku bed, Chosen Group
Middle Ordovician
- Loxoplocus (Lophospira) subpulchella* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, no. 3-4, p. 90, pl. 8, fig. 9
Holotype: UMUT PM0070
Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea
Unkaku bed, Chosen Group
Middle Ordovician
- Lunatia? ezoana* (Yabe and Nagao, 1928)
Sci. Rep. Tohoku Imp. Univ. Ser. 2, vol. 9, no. 3, p. 93, pl. 17, fig. 18
Syntypes: IGPS no. 22621, more than two specimens
Futamatazawa near Miruto, Iwamizawa City, Hokkaido
Mikasa Formation
Upper Cretaceous
- Lysis izumiensis* Kase, 1990
Jour. Paleont., vol. 64, no. 4, p. 567, figs. 2.11–2.12
Holotype: NSM PM15409, Paratypes: 15410–15414
Shinike, Izumisano City, Osaka Prefecture
Azenotani Mudstone Member, Matsuo Formation
Upper Cretaceous
- Maclurea tofangoense* Kobayashi [sic] see *Maclurites tofangoense* (Kobayashi)
- Maclurites tofangoensis* (Kobayashi, 1930)
Japan. Jour. Geol. Geogr., vol. 7, nos. 3–4, p. 96, pl. 9, figs. 1–3; pl. 11, fig. 7, text-fig
Syntypes: UMUT PM0082–0086
Toufangkou, Niu-hsin-tai, northeast China
Toufangkou Limestone
Middle Ordovician
- Margarites (Atira) depressus* Nagao see *Atira depressa* (Nagao)
- Margarita funiculata* Yokoyama, 1890
Palaeontographica, vol. 36, p. 197, pl. 20, fig. 13
Poronai, Hokkaido
Mikasa Formation
Upper Cretaceous
- Margarites sachalinensis ornatus* Nagao, 1939
Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3-4, p. 217, pl. 20, fig. 10

Holotype: GMH no.8326
Nishiho-gawa near Kawakami colliery, Toyohara-gun, South Sakhalin
Upper Yezo Group
Upper Cretaceous

***Margarites sachaliensis* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3-4, p. 216, pl. 20, figs. 11-13
Syntypes: GMH no.8325, 8335
Nishiho-gawa near Kawakami colliery, Toyohara-gun, South Sakhalin
Upper Yezo Group
Upper Cretaceous

***Melania cancellata* Yabe and Nagao in Yabe, Nagao and Shimizu see *Pachychilus? reticancellata* (Kobayashi and Suzuki)**

***Melanoides (Yoshimonia) katsukiensis* Ota, 1960**

Jour. Sci. Hiroshima Univ. Ser. C, vol. 3, no. 1, p. 9, pl. 2, fig. 16
Holotype: GF K811, Paratype: at least one specimen
About 1 km south of Hata-reservoir, Katsuki-machi, Yahata City, Fukuoka Prefecture
Wakamiya Formation
Lower Cretaceous

***Melanoides (Yoshimonia) kokurensis* Hase, 1960**

Jour. Sci. Hiroshima Univ. Ser. C, vol. 3, no. 2, p. 310, pl. 36, fig. 9
Holotype: GK H6074, Paratypes: GK H6075-6077
About 400 m west of Shingetsu along the path from Shingetsu to Sugao, Kokura City, Fukuoka Prefecture
Sengoku Formation
Lower Cretaceous

***Melanoides (Yoshimonia) yoshimoensis* Ota, 1960**

Jour. Sci. Hiroshima Univ. Ser. C, vol. 3, no. 1, p. 7, pl. 2, fig. 15a
Holotype: GF Y682 (a), Paratypes: at least two specimens
Yoshimo, Shimonoseki City, Yamaguchi Prefecture
Yoshimo Formation
Lower Cretaceous

***Melanoides (Kumania) kawaguchiensis* Ota, 1960 [titled erroneously as "*Kumania*" *kawaguchiensis*"]**

Jour. Sci. Hiroshima Univ. Ser. C, vol. 3, no. 1, p. 10, pl. 2, fig. 18
Holotype: GF K711.a, Paratypes: at least 7 specimens
Shimomatsukuma-mura, Kumamoto Prefecture
Kawaguchi Formation
Lower Cretaceous

***Melanoides vulgaris minima* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, no. 1-2, p. 51, pl. 5, fig. 18
Holotype: UMUT MM7024, Paratypes: UMUT MM7025-7027
Izuki, Izumi-mura, Fukui Prefecture
Izuki Formation
Upper Jurassic or Lower Cretaceous

***Melanoides vulgaris* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 1-2, p. 50, pl. 5, fig. 22
Holotype: UMUT MM7024
Izuki, Izumi-mura, Fukui Prefecture
Izuki Formation
Upper Jurassic or Lower Cretaceous

***Metriomphalus nagasakiensis* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 308, pl. 34, fig. 14
Holotype: NSM PM16133 (formerly GIYU-MM-104), Paratypes: NSM PM16134-16136 (formerly GIYU-MM-105-107)
Coast of Nagasaki harbour, Choshi City, Chiba Prefecture
Kimigahama Formation
Lower Cretaceous

***Michaletia japonica* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 62, pl. 5, fig. 8
Holotype: UMUT MM15463
Hideshima, Miyako City, Iwate Prefecture
Tanohata Formation
Lower Cretaceous

***Micromelania? katoensis* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 204, pl. 14, fig. 27
Holotype: destroyed during the 2nd World War
Butsumendo, Gyokuso-men, Kato-gun, Kyongsang-namdo (Keisho-nan-do), South Korea
Kinbu Formation
Lower Cretaceous

***Microschiza japonica* (Nagao in Yabe, 1927)**

Sci. Rep. Tohoku Imp. Univ., Ser. 2, vol. 11, no. 2, pl. 3, fig. 6
Holotype: IGPS? (missing)
Hinagu, Yatsushiro City, Kumamoto Prefecture
Probably from Kawaguchi Formation
Lower Cretaceous

***Mourlonia (Mourlonia) hayasakai* Shikama and Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, New Series, no. 69, p. 212, pl. 24, fig. 1
Holotype: ASM 5001, Paratypes: ASM 5002-5007
Shuchikujo, Akiyoshi, Mine City, Yamaguchi Prefecture
Akiyoshi Limestone Group

Upper Carboniferous

Mourlonia (*Mourlonia*) *toyomensis* Murata see
Glabrocingulum (*Glabrocingulum*) *toyomense* (Murata)

***Murchisonia yabei* Hayasaka, 1943**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 32,
pl. 2, figs. 2, 3; pl. 4, figs. 1, 2; pl. 5, text-fig. 2

Syntypes: Taiwan National University

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

Natica (*Amauropsis*) *sanchuensis* Yabe and Nagao see
Tylostoma? *sanchuense* (Yabe and Nagao)

Natica (*Lunatia*) *ainuana* Nagao see *Vanikoropsis ainuana*
(Nagao)

***Natica* (*Lunatia*) *ainuana alta* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, no. 3–4, p.
220, pl. 21, figs. 9, 10

Syntypes: GMH no. 8299, two specimens

Aton, Shisuka-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

Natica (*Lunatia*) *denselineata* Nagao see *Globularia?*
denselineata (Nagao)

Natica (*Lunatia*) *ezoana* Yabe and Nagao see *Lunatia?*
ezoana (Yabe and Nagao)

Natica importuna Nagao see *Amauropsis importuna* (Nagao)

Naticella (?) *infrequens* Kobayashi and Ichikawa see *Natiria?*
infrequens (Kobayashi and Ichikawa)

Naticella japonica Hayasaka see *Natiria?* *japonica*
(Hayakasa)

***Natiria?* *infrequens* (Kobayashi and Ichikawa, 1952)**

Japan. Jour. Geol. Geogr., vol. 22, p. 271, pl. 10, figs. 1, 2

Holotype: UMUT MM5403a

Paratype: UMUT MM5403b

Yamamoto, Nariwa-cho, Okayama Prefecture

Nariwa Group

Upper Triassic

***Natiria?* *japonica* (Hayakasa, 1943)**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 41,
pl. 4, fig. 6

Holotype: Taiwan National University, probably lost

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Naticopsis fasciata* Hayasaka, 1943**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 39,
pl. 4, fig. 4

Holotype; Taiwan National University, probably lost

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Naticopsis minoensis* Hayasaka, 1943**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 38,
pl. 4, fig. 3

Holotype; Taiwan National University, probably lost

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Naticopsis wakimizui* Hayasaka, 1943**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 37,
pl. 3, fig. 1

Holotype; Taiwan National University, probably lost

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

Nerinea hidakensis Fukada see *Adiozoptyxis hidakensis*
(Fukada)

***Nerinea higoensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 23, pl. 3, figs.
1–5, text-fig. 5

Syntypes: NSM PM15585–15600 (originally GIYU M-21–36)

2 km north of Uminoura, Tanoura-cho and 2 km north of Futami
near Hinagu, Kumamoto Prefecture

Sakamoto Formation

Upper Jurassic

***Nerinea koikensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 26, pl. 3, fig. 8

Holotype: NSM PM15603 (originally GIYU M-103)

Koike, Kashimamachi, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Nerinea naumanni* Sugiyama and Asano, 1942**

Jour. Geol. Soc. Japan, vol. 49, p. 439, figs. 3–5

Syntypes: IGPS nos. 7023, 65283

Torinosu and Hanabatake, Sakawa-cho, Kochi Prefecture

Torinosu Group

Upper Jurassic

***Nerinea rigida* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 250, pl. 38, fig. 1

Holotype: GMH? (missing)

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Nerinea ryofuae* Tsuchi and Kagami, 1967**

Rec. Oceanogr. Work. Japan, vol. 9, no. 1, p. 1, pl. 1

Syntypes: G 205 001, several specimens

Seamount Cboeb (Erimo) at the junction of Japan and Kuril-Kamchatcha Trenches

Cretaceous

***Nerinea shiudai* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 27, pl. 4, fig. 1

Lectotype: NSM PM15605 (formerly GIYU 46)

Yokunuma, Oshima Island, Kesenuma City, Miyagi Prefecture

Oshima Formation

Lower Cretaceous

***Nerinea somensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 25, pl. 3, figs. 6, 7

Holotype: NSM PM (formerly GIYU M-37–42)

Koike, Kashimamachi, Soma City, Fukushima Prefecture

Nakanosawa Formation

Upper Jurassic

***Nerinea sugiyamai* Shikama and Yui, 1973** [= *Nerinea* (s.s.) *naumannii neumayri* Sugiyama and Asano, 1942; non *Nerinea neumayri* di Stefano, 1883]

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 21, pl. 4, figs. 9–11

Syntypes: IGPS nos. 7024, 65278

Torinosu, Sakawa-cho, Kochi Prefecture

Torinosu Group

Upper Jurassic

***Nerinoidea? oshimensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 177, pl. 30, fig. 1

Holotype: NSM PM15138, Paratypes: NSM PM15139–15143

Yokonuma, Oshima Island, Kesenuma City, Miyagi Prefecture

Yokonuma Formation

Lower Cretaceous

***Neritopsis elegans* Hayami, 1960**

Japan. Jour. Geol. Geogr., vol. 31, nos. 2-4, p. 102, pl. 9, fig. 6

Holotype: UMUT MM3667, Paratypes: UMUT MM3668, 3669

Higashinagano, Toyora-cho, Yamaguchi Prefecture

Higashinagano Formation

Lower Jurassic

***Neritopsis (Hayamiella) japonica* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 84, pl. 8, fig. 6

Holotype: UMUT MM15492

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Neritopsis mutabilis* Hayami, 1960**

Japan. Jour. Geol. Geogr., vol. 31, nos. 2-4, p. 101, pl. 9, fig. 10

Holotype: UMUT MM3663, Paratypes: UMUT MM3662b, 3664–3666

Higashinagano, Toyora-cho, Yamaguchi Prefecture

Higashinagano Formation

Lower Jurassic

***Neritopsis (Neritopsis) tanohatensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 82, pl. 8, fig. 7

Holotype: UMUT MM15486, Paratypes: UMUT MM15487–15490; NSM PM16142 (formerly GIYU-113)

Hiriga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Nipponitys inouei* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 571, figs. 4.1, 4.2

Holotype: NSM PM15437

River bed of Tsui River at Nakano, Seidan-cho, Hyogo Prefecture

Seidan Formation

Upper Cretaceous

***Nipponitys acutiangularis* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 571, fig. 3.15

Holotype: NSM PM154338

Shinike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

***Nododelphinua hiraigensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 100, pl. 11, fig. 14

Holotype: UMUT MM15527, Paratypes: UMUT MM15526, 15527, 15528–15530, 15690; NSM PM16143 (formerly GIYU-M-111)

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Nododelphinula elegans* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 232, pl. 33, fig. 1

Holotype: GMH, missing

Haipe, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Oligoptyxis pyramidaiformis* (Nagao, 1930)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 1, no. 1, p. 23,
pl. 3, figs. 4–8, 15
Syntypes: IGPS nos. 44301, 44305, more than five specimens
East coast of Goshonoura Island, Goshonoura-cho, Kumamoto
Prefecture
Goshonoura Group
Upper Cretaceous

***Onkospira haipensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 95, pl. 11, fig. 9
Holotype: UMUT MM15520, Paratypes: UMUT MM15421–
15424
Haipe, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Ophileta alta* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 9, p. 533, pl.
2, figs. 4–6
Syntypes: UMUT PM0813, 0814
Makkol and Saisho-ri, Taegaeksan (Taihakusan), Kangwon-do
(Kogen-do), South Korea
Chosen Group
Lower Ordovician

***Ophileta ichimurai* (Kobayashi, 1931)**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 34, pl. 2, fig. 4
Holotype: UMUT PM0187
Shotin-ti, Kenjiho, Kosu-gun, Huanghae-do (Kokai-do), North
Korea
Shorin bed, Chosen Group
Lower Ordovician

***Ophileta plana* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 9, p. 534, pl.
2, figs. 7–10
Syntypes: UMUT PM0815, 0816, 0817
Saisho-ri and Makkol, Taebaeksan (Taihakusan), Kangwon-do
(Kogen-do), South Korea
Chosen Group
Lower Ordovician

***Ophiletina* (?) *shokoriense* Kobayashi** [error of *shokoriensis*]
see *Euconia? shokoriensis* (Kobayashi)

***Orecoxia kobayashii* Kase and Nishida** see *Labrocoxispis*
kobayashii (Kase and Nishida)

***Otostoma japonicum* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 234,
pl. 36, fig. 21
Holotype: GMH no. 6763
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Oxynodiscus sigmoidalis* Kobayashi** [sic *Oxydiscus*] see
Tropidodiscus? sigmoidalis (Kobayashi)

***Ozodochilus cossmanni* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 65, pl. 5, fig. 1
Holotype: UMUT MM15445
Hiraiga, Tanohata-mura, Iwate Prefecture
Tanohata Formation
Lower Cretaceous

***Pachychilus? reticancellata* (Kobayashi and Suzuki, 1939)**

[=*Melania cancellata* Yabe and Nagao in Yabe, Nagao and
Shimizu, 1936; = non *Melania cancellata* Benson, 1833]
Sci. Rep. Tohoku Imp. Univ. Ser. 2, vol. 9, no. 2, p. 66, pl. 13,
figs. 43, 44
Syntypes: IGPS no. 22444, several specimens
Bomeki, Ohinata-mura, Nagano Prefecture.
“Shiroi Group”
Lower Cretaceous

***Pagodispira tetracarina* Kobayashi** see *Loxoplocus*
(*Donaldiella*) *tetracarina* (Kobayashi)

***Paracampeloma kumaensis* Iwasaki, 1980**

Kumamoto Jour. Sci. Geol., vol. 12, no. 1, p. 35, pl. 2, fig. 5
Holotype: KMSp 2014, Paratypes: KMSp 2015, 2016
River-side cliff, west of Kawaguchi, Sakamoto-mura,
Kumamoto Prefecture
Kawaguchi Formation
Lower Cretaceous

***Paraturbo kumasoana* (Matsumoto, 1938)**

Jour. Geol. Soc. Japan, vol. 45, p. 19, pl. 2, fig. 9
Lectotype: UMUT MM7743
Hokigahana, Goshonoura island, Goshonoura-cho, Kumamoto
Prefecture
Goshonoura Group
Upper Cretaceous

***Patella* (s. l.) *miyakoensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from
Japan, Nat. Sci. Mus., Tokyo, p. 54, pl. 2, fig. 4
Holotype: UMUT MM15427, Paratype: UMUT MM15428
Oshima islet, Moshi, Iwaizumi-cho, Iwate Prefecture
Hiraiga Formation

Lower Cretaceous

***Patella soyaensis* Kase and Shigeta, 1996**

Jour. Paleont., vol. 70, no. 5, p. 763, figs. 1. 1, 1. 2
Soya harbour at Soya, Wakkanai City, Hokkaido
Holotype: NSM PM15460, Paratypes: NSM PM15461, UMUT MM19016
Upper Cretaceous

***Patelloida obirensis* Kase and Shigeta, 1996**

Jour. Paleont., vol. 70, no. 5, p. 765, figs. 1.15, 1.16
Holotype: NSM PM15468
Southern bank of the Obirashibe River, at the junction with the Nakakinenbetsu Valley, Tappu, Obira-cho, Hokkaido
Middle Yezo Group
Upper Cretaceous

?***Patelloida miyauchii* Kase and Shigeta, 1996**

Jour. Paleont., vol. 70, no. 5, p. 765, figs. 1.13, 1.14
Holotype: NSM PM15468, Paratype: NSM PM15466.
Soya harbour at Soya, Wakkanai City, Hokkaido
Upper Cretaceous.

***Pelagiella* (?) *reversa* Kobayashi see *Protoscaevogyra reversa* (Kobayashi)**

***Perissoptera elegans* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no.118, p. 309, pl. 36, fig. 14
Holotype: NSM PM15045, Paratypes: NSM PM15046–15049
Kimigahama, Choshi City, Chiba Prefecture
Kimigahama Formation
Lower Cretaceous

***Pleurotomarina* (s. l.) *fausta* Kanie and Habe see *Peretrochus* (s. l.) *fausta* (Kanie and Habe)**

***Peretrochus* (s. l.) *fausta* (Kanie and Habe, 1973)**

The Venus, vol. 32, no. 1, p. 19, pl. 2, figs. 1–5, text-fig. 2
Holotype: NSM PM15067 (originally as PM100)
Sennai near Cape Soya, Wakkanai City, Hokkaido
Omisaki Formation
Upper Cretaceous

***Phaneroptyxis oshimensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 45, pl. 8, fig. 4
Lectotype: NSM PM15642 (formerly GIYU M-82)
Yokonuma, Oshima Island, Kesenuma City, Miyagi Prefecture
Nakanosawa Formation
Lower Cretaceous

***Phaneroptyxis sakamotoensis* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 46, pl. 8, fig. 6
Holotype: NSM PM15645 (formerly GIYU M-86)

South of Igo-misaki, Uminoura, Tanoura-cho, Kumamoto Prefecture
Sakamoto Formation
Upper Jurassic

***Pictavia toyorana* Hayami, 1960**

Japan. Jour. Geol. Geogr., vol. 31, no. 1–2, p. 104, pl. 9, fig. 2
Holotype: UMUT MM3672, Paratypes: UMUT MM3673, 3674
Southeast of Higashinagano, Toyora-cho, Yamaguchi Prefecture
Higashinagano Formation
Lower Jurassic

***Piestochilus laevigatus* Nagao see *Graphidula laevigata* (Nagao)**

***Pietteia cretacea* Kase in Kase and Maeda, 1980**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 118, p. 311, pl. 36, fig. 10
Holotype: NSM PM15050, Paratypes: NSM PM15051–15055
Kimigahama, Choshi City, Chiba Prefecture
Kimigahama Formation
Lower Cretaceous

***Pila fukamiensis* Iwasaki, 1980**

Kumamoto Jour. Sci. Geol., vol. 12, no. 1, p. 36, pl. 2, fig.3
Holotype: KMSP 2018, Paratypes: KMSP 2017, 2019–2025
River-side cliff, west of Kawaguchi, Sakamoto-mura, Kumamoto Prefecture
Kawaguchi Formation
Lower Cretaceous

***Pila* (*Turbinicola*?) *nipponica* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 1–2, p. 49, pl. 5, fig. 14
Holotype: UMUT MM4236 (missing), Paratype: UMUT MM4237 (missing)
Kurouti [=Kurouchi], Furukawa-cho, Gifu Prefecture
Tetori Group
Upper Jurassic

***Pleurotomarina* (s. l.) *fausta* Kanie and Habe see *Peretrochus* (s. l.) *fausta* (Kanie and Habe)**

***Pleurotomaria yokoyamai* Hayasaka see *Bathrotomaria yokoyamai* (Hayasaka)**

***Proconulus hiraigensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 64, pl. 4, fig. 11
Holotype: UMUT MM15432.
Paratypes: UMUT MM15433–15437; NSM PM16140 (formerly GIYU-111)
Haibe, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Protoscaevogyra reversa* (Kobayashi, 1935)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 4, no. 2, p. 72, pl. 11, figs. 4–6

Holotype: UMUT PM0944

Kasetsu-ji, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Seison slate, Chosen Group

Middle Cambrian

***Proturbo typicus* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 78, pl. 6, fig. 12

Holotype: UMUT MM15481, Paratypes: UMUT MM15482, 15483

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Pseudogaleodea tricarinata* Nagao, 1932**

Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, vol. 2, no. 1, p. 46, pl. 8, figs. 1–7

Syntypes: GNH no. 4591; IGPS no. 51249, eight specimens

Kawakami colliery, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Pseudomelania elegantula* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 238, pl. 37, figs. 1–10

Lectotype: GMH, no. 7063

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formations, Miyako Group

Lower Cretaceous

***Pseudoperissitys bicarinata* Nagao and Otatume, 1938**

Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, vol. 4, nos. 3–4, p. 53, pl. 4, fig. 3

Holotype: GMH no. 5981

Kiusu, Shimohobetu, Hobetsu-cho, Hokkaido

Hakobuchi Group

Upper Cretaceous

***Pseudozygopleura (Stephanozyga) nishimurai* Kase, 1988**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 149, p. 367, fig. 5. 1

Holotype: NSM PM15399, Paratypes: NSM PM15400, 15401

Onimaru Quarry, Onimaru, Ofunato City, Iwate Prefecture

Hikoroichi Formation

Lower Carboniferous

Pterodonta amaxensis* Matsumoto see *Tylostoma? amaxense* (Matsumoto)**Ptygmatis yabei* Shikama and Yui, 1973**

Sci. Rep. Yokohama Nat. Univ., Sec. 2, no. 29, p. 32, pl. 7, figs. 1, 2; text-fig. 6

Syntypes: NSM PM15615, 15616 (formerly GIYU M-62, 63)

2 km north of Uminoura, Tanoura-cho, Kumamoto Prefecture

Sakamoto Formation

Upper Jurassic

***Pugnellus (Gymnarus) yabei* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 226, pl. 20, figs. 1–8

Syntypes: GMH 6152, at least 100 specimens

Upper course of Tinomigawa, Urakawa-cho, Hokkaido

Trigonia Sandstone (Mikasa Formation)

Upper Cretaceous

Purpuroidea japonica* Nagao see *Microschiza japonica* (Nagao)**Pyrifusus (Neptunella) kawakamiensis* Nagao see *Rhombopsis kawakamiensis* (Nagao)*****Pyrazus scalariformis* Nagao, 1934**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 257, pl. 35, fig. 10

Holotype: GMH no. 7084

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

Pyrgulifera (?) japonica* Matsumoto see *Siragimelania japonica* (Matsumoto)**Pyrgulifera nodosa* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 129, pl. 14, fig. 2

Holotype: UMUT MM703, Paratypes: UMUT MM15704, 15705

Oshima islet, Moshi, Iwaizumi-cho, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

Raphistoma ichimurai* Kobayashi see *Ophileta ichimurai* (Kobayashi)**Raphistoma keizanense* Kobayashi see *Helicotoma keizanensis* (Kobayashi)*****Raphistoma katoi* Kobayashi see *Scalites katoi* (Kobayashi)*****Raphistoma coreanicum* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 371, pl. 8, figs. 10, 11

Holotype: UMUT PM0598, Paratype: UMUT PM0597

Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do),
South Korea
Chosen Group
Lower Ordovician

***Rhombopsis kawakamiensis* (Nagao, 1939)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 232, pl. 21, fig. 7
Holotype: GMH no. 8346
Kawakami, Toyohara-gun, Sakhalin
Upper Ammonite Bed (Upper Yezo Group)
Upper Cretaceous

***Rostellaria japonica* Nagao see *Tibia japonica* (Nagao)**

***Scala miyakoensis* Nagao see *Acirsa (Hemiacirsa) miyakoensis* (Nagao)**

***Scalites irregulare* Kobayashi, 1958 [error of *irregularis*]**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 11, no. 2, p. 87, pl. 5, fig. 7
Holotype: UMUT PM2302
Kan, Tot'ami-ni, Kaun-myon, Mus'gyong-kun, Kyongsang-bukto (Keisho-hoku-do), South Korea
Todon Formation
Upper Ordovician

***Scalites katoi* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. 2, vol. 3, no. 8, p. 87, pl. 8, figs. 7–9
Holotype: UMUT PM0602, Paratypes: UMUT PM0601, 0603, 0604
Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Chosen Group
Lower Ordovician

***Scurriopsis (Scurriopsis) aptiana* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 50, pl. 2, fig. 2
Holotype: UMUT MM15429, Paratypes: UMUT MM15430, NSP PM16139 (formerly GIYU-110)
Oshima islet, Moshi, Iwaizumi-cho, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Scurriopsis (Scurriopsis) oshimensis* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 51, pl. 2, fig. 11
Holotype: UMUT MM15424, Paratypes: UMUT MM15425, 15426
Oshima islet, Moshi, Iwaizumi-cho, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Semifusus (Mayeria?) sachalinensis* Nagao, 1932**

Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, vol. 2, no. 1, p. 47, pl. 8, figs. 8–10
Syntypes: IGPS no. 51248, eight specimens
Okukawakami, Toyohara-gun, Sakhalin
Upper Ammonite Bed (Upper Yezo Group)
Upper Cretaceous

***Semifusus (Trochofusus) tuberculatus* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3–4, p. 230, pl. 22, figs. 1–4
Syntypes: GMH nos. 8340–42, six specimens
Nakayama near Kawakami colliery, Toyohara-gun, Sakhalin
Upper Ammonite Bed (Upper Yezo Group)
Upper Cretaceous

***Semisolarium incrassatum* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 242, pl. 35, fig. 12
Holotype: IGPS no. 66600
Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation
Lower Cretaceous

***Semisolarium vistuloides* (Yabe and Nagao, 1928)**

Sci. Rep. Tohoku Imp. Univ. Ser. 2, vol. 9, no. 3, p. 93, pl. 17, fig. 20
Holotype: IGPS no. 22631
Upper course of Ikushumbetsu river, Mikasa City, Hokkaido
Upper Yezo Group
Upper Cretaceous

***Semitubina sakoi* Kase, 1986**

Lethaia, vol. 19, p. 337, figs. 5G, H
Holotype: NSM PM15270, Paratypes: NSM PM15271–15279
Mt. Yokokurayama, Kochi Prefecture
Silurian

***Sunuites (Sinuitopsis) kochiriensis* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 3, no. 8, p. 360, pl. 5, figs. 1–4
Syntypes: UMUT PM0570, 0571
Kochi-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Chosen Group
Middle Ordovician

***Sinuitopsis kochiriensis* Kobayashi see *Sunuites (Sinuitopsis) kochiriensis* (Kobayashi)**

***Siragimelania japonica* (Matsumoto, 1938)**

Jour. Geol. Soc. Japan, vol. 45, p. 21, text-fig. 23
Holotype: UMUT MM7722 (missing)
Aradachi, Goshonoura island, Goshonoura-cho, Kumamoto Prefecture

Goshonoura Group
Upper Cretaceous

***Shikamacirrus nipponicus* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 93, pl. 13, fig. 71

Holotype: UMUT MM15511, Paratypes: UMUT MM15512–1515519

Koikorobe, Tanohata-mura, Iwate Prefecture

Tanohata Formation

Lower Cretaceous

***Shikokuspira hamadai* Nishida, 1969**

Saga Daigaku Kyoikugakubu Kenkyu-ronbunshu, vol. 17, p. 88, pl. 3, fig. 1

Holotype: GS. D80, Paratypes: GS. D81–96

Ohirayama mine, 1 km southeast of Sakawa JR station, Sakawa-cho, Kochi Prefecture

Ohirayama Limestone

Middle Permian

***Siragimelania tateiwai acuticostata* (Suzuki, 1940)**

Japan. Jour. Geol. Geogr., vol. 17, nos. 3–4, p. 226, pl. 23, fig. 3

Holotype: UMUT MM6355, Paratypes: UMUT MM6354, 6356–6384

Northwest of Kunkoku-ri, Sei-men, Keishu-gun, Kyongsangbukdo (Keisho-hoku-do), South Korea

Kansenri Formation

Lower Cretaceous

***Siragimelania tateiwai tateiwai* (Suzuki, 1940)**

Japan. Jour. Geol. Geogr., vol. 17, nos. 3–4, p. 224, pl. 22, fig. 1

Holotype: UMUT MM6315, Paratypes: UMUT MM6316–6352

Hyakuan-do, Hokuan-men, Eisen-gun, Kyongsangbukdo (Keisho-hoku-do), South Korea

Taikyu Formation

Lower Cretaceous

***Sisenna* (?) *japonica* Kobayashi and Ichikawa, 1952**

Japan. Jour. Geol. Geogr., vol. 22, p. 79, pl. 2, fig. 7

Holotype: UMUT MM5408a, Paratypes: UMUT MM5408b, 5408c

Nukata, Yakuno-cho, Kyoto Prefecture

Oyugo Formation, Yakuno Group

Middle Triassic

***Solarium incrassatum* Nagao see *Semisolarium incrassatum* (Nagao)**

***Solenospira multicostata* Hayasaka see *Allocosmia?* *multicostata* (Hayasaka)**

***Spiromphalus yabei* Hayasaka, 1939**

Mem. Fac. Sci. Agr. Taihoku Imp. Univ., vol. 22, no. 2, p. 22, pl.

3, figs. 1–9

Syntypes: Taiwan National University (probably lost)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone Group

Middle Permian

***Straparollus (Euomphalus) asanoi* Kase, 1988**

Trans. Proc. Palaeont. Soc. Japan, New Ser., no. 149, p. 362, figs. 2. 1, 2. 2

Holotype: NSM PM15385, Paratypes: NSM PM15386, 15387

Onimaru Quarry, Onimaru, Ofunato City, Iwate Prefecture

Hikoroichi Formation

Lower Carboniferous

***Straparollus (Straparollus) otai* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, New Series, no. 70, p. 234, pl. 23, fig. 3

Holotype: ASM 5025

Ryugoho, Akiyoshi, Shuho-cho, Yamaguchi Prefecture

Akiyoshi Limestone Group

Carboniferous

***Straparollus (Euomphalus) uedai* Murata, 1969**

Saito Ho-on Kai Mus., Res. Bull., no. 38, p. 14, pl. 2, figs. 5–7

Holotype: IGPS no. 91368, Paratypes: IGPS nos. 91369A, B, 91387, one unregistered specimen

Senmatsu, Fujisawa-cho, Iwate Prefecture

Toyoma Formation

Upper Permian

***Straparollus shirakii* Kobayashi, 1931**

Bull. Geol. Surv. Chosen, vol. 11, no. 1, p. 34, pl. 2, fig. 6

Holotype: UMUT PM0186

Keiho-ri, Kenjiho, Kosu-gun, Huanghae-do (Kokai-do), North Korea

Shorin bed, Chosen Group

Lower Ordovician

***Surculites fusoides* Nagao, 1939**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, no. 3–4, p. 235, pl. 21, fig. 8

Holotype: GMH no. 8339

Omoshirushibetsu, Abeshinai, Nakagawa-cho, Hokkaido

Upper Yezo Group

Upper Cretaceous

***Symmetrocapulus hanaii* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 149, pl. 24, fig. 7

Holotype: UMUT MM15652, Paratypes: UMUT MM15653, 15654

Moshi, Iwaizumi-cho, Iwate Prefecture

Tanohata Formation

Lower Cretaceous

Taniella japonica Kase see *Tanimasanoria japonica* (Kase)

***Tanimasanoria japonica* (Kase, 1990)**

Jour. Paleont., vol. 64, no. 4, p. 573, figs. 5. 12, 5. 13

Holotype: NSM PM15440, Paratypes: 15441–15452.

Shinike, Izumisano City, Osaka Prefecture

Azenotani Mudstone Member, Matsuo Formation

Upper Cretaceous

Tectus crassus Nagao see *Discotectus crassus* (Nagao)

Tessarolax acutimarginatus Nagao see *Aporrhais* (*Tessarolax*) *acutimarginatus* (Nagao)

Tessarolax japonicus Yabe and Nagao see *Aporrhais* (*Tessarolax*) *japonicus* (Yabe and Nagao)

Thiara (*Siragimelania*) *tateiwai acuticostata* Suzuki see *Siragimelania tateiwai acuticostata* (Suzuki)

Thiara (*Siragimelania*) *tateiwai tateiwai* Suzuki see *Siragimelania tateiwai tateiwai* (Suzuki)

***Tibia japonica* (Nagao, 1932)**

Jour. Fac. Sci. Hokkaido Imp. Univ. Ser. 4, vol. 2, no. 1, p. 44, pl. 7, figs. 1–3, 5, 6

Syntypes: GMH no. 4554, several specimens

Kawakami colliery, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

***Torquesia yaegashii* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 249, pl. 36, fig. 11

Lectotype: GMH no. 6802

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

Trachydomia conica Hayasaka see *Trachyspira conica* (Hayasaka)

Trachydomia magna Hayasaka see *Trachyspira magna* (Hayasaka)

***Trachyspira conica* (Hayasaka, 1943)**

Mem. Fac. Sci. Taihoku Imp. Univ., Ser. 3, vol. 1, no. 2, p. 43, pl. 2, fig. 4

Holotype: Taiwan National University (probably lost)

Kinshozan, Akasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone

Middle Permian

***Trachyspira magna* (Hayasaka, 1938)**

Mem. Fac. Sci. Agr. Taihoku Imp. Univ., vol. 22, no. 1, p. 2, pl. 1, figs. 1, 2

Syntypes: National Taiwan University (probably lost)

Kinshozan, Akaasaka, Ogaki City, Gifu Prefecture

Akasaka Limestone Group

Middle Permian

***Trajanella japonica* Nagao, 1934** [= *Trajanella fraasi*, Dietrich, 1914]

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 239, pl. 39, fig. 5

Holotype: GMH, no. 7077

Haipe, Tanohata-mura, Iwate Prefecture

Hiraiga Formation, Miyako Group

Lower Cretaceous

***Trochonema ozawai* Kobayashi, 1930**

Japan. Jour. Geol. Geogr., vol. 7, nos. 3-4, p. 98, pl. 11, fig. 2

Holotype: UMUT PM0090

Shoko-ri, Bantatsu-men, Koto-gun, Pyongan-namdo (Heian-nan-do), North Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Trochopsidea japonica* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 76, pl. 7, fig. 8

Holotype: UMUT MM15474, Paratypes: UMUT MM15473, 15476–15480

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

Trochus vistuloides Yabe and Nagao see *Semisolarium vistuloides* (Yabe and Nagao)

***Tropidodiscus? sigmoidalis* (Kobayashi, 1934)**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 3, no. 8, p. 361, pl. 5, figs. 8, 9.

Holotype: UMUT PM0572

Makkol, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea

Unkaku bed, Chosen Group

Middle Ordovician

***Trypanotrochus cretaceus* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from Japan, Nat. Sci. Mus., Tokyo, p. 98, pl. 11, fig. 6

Holotype: UMUT MM15550, Paratypes: UMUT MM15551–15553

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Trypanotrochus rikuchuensis* (Nagao, 1934)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 256, pl. 35, fig. 7

Holotype: GMH?, missing

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Turbonitella ryugohoensis* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, New Series, no. 70, p. 236, pl. 23, fig. 10

Holotype: ASM 5030

Ryugoho, Akiyoshi, Shuho-cho, Yamaguchi Prefecture

Akiyoshi Limestone Group

Lower Carboniferous

***Turbonitella yanagidai* Nishida, 1968**

Trans. Proc. Palaeont. Soc. Japan, New Series, no. 70, p. 235, pl. 23, fig. 6

Holotype: ASM 5020

Uzura Limestone quarry, 1200 m east of Yobara, Ofuku, Mine City, Yamaguchi Prefecture

Akiyoshi Limestone Group

Lower Carboniferous

***Turritella (Zaria) goshorana* Matsumoto, 1938**

Jour. Geol. Soc. Japan, vol. 45, p. 20, pl. 2, fig. 6

Holotype: UMUT MM7742

Hokigahana, Goshonoura Island, Goshonoura-cho, Kumamoto Prefecture

Goshonoura Group

Upper Cretaceous

***Turritella saratiensis* Nagao, 1939 [typographical error of *soratiensis*]**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3-4, p. 222, pl. 21, fig. 6

Holotype: GMH no. 8343

Tomatsu-zawa, Mikasa City, Hokkaido

Mikasa Sandstone

Upper Cretaceous

Turritella yaegashii* Nagao see *Torquesia yaegashii* (Nagao)**Tylostoma? amaxense* (Matsumoto, 1938)**

Jour. Geol. Soc. Japan, vol. 45, p. 20, pl. 2, fig. 3

Holotype: UMUT MM7741

Hokigahama, Goshonoura Island, Goshonoura-cho, Kumamoto Prefecture

Goshonoura Group

Upper Cretaceous

***Tylostoma hanaii* Kase, 1984**

Early Cretaceous Marine and Brackish-water Gastropoda from

Japan, Nat. Sci. Mus., Tokyo, p. 159, pl. 27, fig. 3

Holotype: UMUT MM15586, Paratypes: UMUT MM15587, 15709-15711; NSM PM16147-16149 (formerly GIYU-118-120)

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Tylostoma miyakoensis* Nagao, 1934 [sic]**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 2, no. 3, p. 247, pl. 34, fig. 1

Holotype: IGPS no. 7129

Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation

Lower Cretaceous

***Tylostoma? sanchuense* (Yabe and Nagao in Yabe, Nagao and Shimizu, 1926)**

Sci. Rep. Tohoku Imp. Univ. Ser. 2, vol. 9, no. 2, p. 64, pl. 13, fig. 31

Holotype: IGPS no. 22508

Hachimanzawa, south of Kagahara, Nakazato-mura, Gumma Prefecture

Sebayashi Formation

Lower Cretaceous

***Ulrichospira kanekoi* Kase and Nishida, 1986**

Bull. Nat. Sci. Mus., Tokyo, Ser. C., vol. 12, no. 3, p. 83, figs. 5A-C

Holotype: NSM PM15328, Paratypes: NSM PM15329, 15331-15333

Higuchizawa, Ofunato City, Iwate Prefecture

Nakazato Formation

Middle Devonian

Vanicorora japonica* Nagao see *Gyrodes japonicus* (Nagao) [= *Gyrodes munitus* (Forbes)]**Vanikoropsis ainuana* (Nagao, 1939)**

Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 4, vol. 4, nos. 3-4, p. 219, pl. 21, fig. 11

Holotype: GMH no. 8324

Kawakami colliery, Toyohara-gun, Sakhalin

Upper Ammonite Bed (Upper Yezo Group)

Upper Cretaceous

Vernedia* (?) *uedai* Matsumoto see *Itruvia? uedai* (Matsumoto)**Viviparus (Sinotaia?) keishoensis* Suzuki, 1943**

Jour. Shigenkagaku Kenkyu-sho, vol. 1, no. 2, p. 199, pl. 14, fig. 1

Holotype: destroyed during the 2nd World War

Butsumendo, Gyokuso-men, Kato-gun, Kyongsang-namdo (Keisho-nan-do), South Korea

Kinbu Formation
Lower Cretaceous

***Volutilithes antiqua* Kase, 1990**

Jour. Paleont., vol. 64, no. 4, p. 572, figs. 3.4, 3.5
Holotype: NSM PM15431, Paratype: 15432
Shinike, Izumisano City, Osaka Prefecture
Azenotani Mudstone Member, Matsuo Formation
Upper Cretaceous

Gastropoda uncertain

***Pelagiella hana* Kobayashi, 1935**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 2, p. 72, pl. 2, figs. 15, 16
Holotype: UMUT PM0942, Paratype: UMUT PM0943
Kasetsuji, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Kasetsu Formation, Chosen Group
Upper Cambrian

Monoplacophora

***Palaeacmaea hampakuensis* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 3, no. 8, p. 359, pl. 4, figs. 3, 4
Holotype: UMUT PM0566, Paratypes: UMUT PM0565, 0567
Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon beds, Chosen Group
Middle Ordovician

***Palaeacmaea sohsanensis* Kobayashi, 1934**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 3, no. 8, p. 359, pl. 5, figs. 5, 6
Holotype: UMUT PM0566
Kochi-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon beds, Chosen Group
Middle Ordovician

***Propilina antiqua* Kobayashi, 1962** [typographical error of *Proplina*]

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 14, no. 1, p. 15, pl. 2, fig. 21
Holotype: UMUT PM3990, Paratype: UMUT PM3989a.
1.25 km west of Kok-kol, Puk-myon, NNE of Chung-san, South Korea
Chosen Group
Middle Cambrian

Hyolitha

***Hyolithus globiger* Saito, 1936** [typographical error of *Hyolithes*]

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 3, p. 361, pl. 3, figs. 16, 17
Holotype: UMUT PM1482, Paratype: UMUT PM1479–1482
Southern slope of Ch'ongnyongsan hill, 1.3 km ENE of Chung-hwa, Pyongan-namdo (Heian-nan-do), North Korea
Ptychoparia beds
Middle Cambrian

***Hyolithus katoi* Saito, 1936** [typographical error of *Hyolithes*]

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 3, p. 361, pl. 3, figs. 20–22
Holotype: UMUT PM1477, Paratype: UMUT PM1478
southern slope of Ch'ongnyongsan hill, 1.3 km ENE of Chung-hwa, Pyongan-namdo (Heian-nan-do), North Korea
Ptychoparia beds
Middle Cambrian

***Hyolithes subcarinatus* Kobayashi, 1935**

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 2, p. 73, pl. 3, figs. 17–22
Syntypes: UMUT PM0945–0947, three specimens
Saisho-ri, Taebaeksan (Taihakusan), Kangwon-do (Kogen-do), South Korea
Tsuibon beds, Chosen Group
Upper Cambrian

***Hyolithus teretapex* Saito, 1936** [typographical error of *Hyolithes*]

Jour. Fac. Sci. Imp. Univ. Tokyo, Ser. 2, vol. 4, no. 3, p. 362, pl. 3, figs. 26, 27
Holotype: UMUT PM1485, Paratypes: UMUT PM1483–1484, 1486–1489
South of the tunnel under Kuhyonch'I pass, 2.0 km north of Heukkyo, Kosu area, Huanghae-do (Kokai-do), North Korea
Protolenus shale
Lower Cambrian

***Joachimilites fukukjiensis* Kase, Hamada and Niko, 1987**

Bull. Nat. Sci. Mus., Tokyo, Ser. C, vol. 13, no. 1, p. 31, fig. 2C
Holotype: NSM PM15377, Paratype: 15378
Southeast flank of the Mt. Sorayama, west of Fukuji, Kamitakara-mura, Gifu Prefecture
Fukuji Formation
Devonian

Non-Marine Mollusca

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Non-Marine Gastropoda

Acusta despecta (Sowerby) reported by Habe (1983) from the Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Acusta despecta kikaiensis (Pilsbry) reported by Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Aegista (Plecototropis) kiusiuensis (Pilsbry) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Allopeas clavulinum kyotoense (Pilsbry and Hirase) reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Allopeas kyotoense (Pilsbry and Hirase) see *Allopeas clavulinum kyotoense* (Pilsbry and Hirase)

Allopeas pyrgula (Schmacker and Boettger) reported by Habe (1983) and Fujie (2000) from the Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Allopeas satsumense (Pilsbry) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Alocinma longicornis (Benson) reported by Matsuoka (1981) and Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Aphanoconia osumiensis (Pilsbry) reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Bellamyia celsispiralis* Gurung, Takayasu and Matsuoka, 1997**

Paleontological Research, vol. 1, no. 3, p. 169, figs. 4-1a, b
Holotype: TMNH no. 02098

About 500 m west of Dumkibas along the Mahendara Highway,

Nepal

Middle Member of the Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Bellamyia kosasana* (Ueji) see *Viviparus kosasanus* Ueji, 1934**

***Bellamyia suzukii* Matsuoka, 1985**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 139, p. 186-187, pl. 26, figs. 6a, b

Holotype: ESN no. 40062

Small exposure approximately 2 km north of Hojiro, Ueno City, Mie Prefecture (34° 44.8'N, 136° 13.3'E)

Iga Formation (Ueno Formation), Kobiwako Group
Pliocene

***Brotia palaeocostula* Gurung, Takayasu and Matsuoka, 1997**

Paleontological Research, vol. 1, no. 3, p. 173, fig. 5-17

Holotype: TMNH no. 02130

At the right bank of the Jhumsakhola river about 600 m east of the confluence with the Tinaukhola river, Nepal
Binai Khola Formation, Churia (Siwalik) Group
Mio-Pliocene

***Brotia wakinoensis* Kobayashi and Suzuki, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 256, pl. 29, fig. 14a

Holotype: UMUT no. MM7940a

Ryohori, Kinyo-men, Kato-gun, Keisho-do, Korea
Naktong Series (Naktong Subgroup)

Cretaceous

(*Brotiopsis wakinoensis* (Kobayashi and Suzuki) by Suzuki (1943))

***Brotiopsis kobayashii* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 207, pl. 17, fig. 11(B)a

Holotype: ?

Ryohori, Kinyo-men, Kato-gun, Keisyo-nan-do, Korea
Kinbu Formation, (Naktong Subgroup)

Cretaceous

(*Brotiopsis kobayashii* Suzuki by Ota (1960); *Brotiopsis kobayashii kobayashi* Suzuki by Hase (1960))

***Brotiopsis kobayashii kobayashi* Suzuki see *Brotiopsis kobayashii* Suzuki, 1943**

***Brotiopsis kobayashii sinsyuensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 208, pl. 16, fig. 13A

Holotype: ?

About 0.5–1 km north of Tokusanri, Nando-men, Sinsyu-gun, Keisyo-nan-do, Korea

Sinsyu Formation, (Naktong Subgroup)

Cretaceous

(*Brotiopsis kobayashii sinsyuensis* Suzuki by Ota (1960))

***Brotiopsis wakinoensis ryohoriensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 206, pl. 17, fig. 11c

Holotype: ?

Ryohori, Kinyo-men, Kato-gun, Keisyo-nan-do, Korea

Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Bulimus (Parafossarulus) osawaensis* Kanno, 1954**

Sci. Rep., Tokyo Kyoiku Daigaku, Sect. C, vol. 3, no. 19, p. 80, pl. 6, figs. 1-3

Holotype: (TKD no. ?)

Osawa-pass on the road leading from Nakamura-machi to Kakuda-machi, northeastern Fukushima Prefecture and Kakuda-machi in southeastern Miyagi Prefecture (Osawa pass, between Soma-cho, Fukushima Prefecture and Kakuda City, Miyagi Prefecture)

Osawa Formation (Ouchi Formation)

Lower Miocene

***Bulimus rakutoensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 202, pl. 14, fig. 23

Holotype: ?

About 1 km northeast of Syoryudo, Wakwanyu, Keisyo-hoku-do, Korea

Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Carychium cymatoplax* Pilsbry** reported by Habe (1983) and Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Cionella lubrica* (Müller)** see *Cochlicopa lubrica* (Müller)

***Cipangopaludina chinensis* (Griffith and Pidgeon)** (not *Cipangopaludina chinensis* (Gray)) reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture

***Cipangopaludina chinensis laeta* (v. Martens)** reported by Fossil Mollusc Research Group for Nojiri-ko Excavation (1987) from the late Pleistocene Nojiri-ko Formation, Nagano Prefecture; ***Cipangopaludina malleata* (Reeve)** reported by Omori and Ibaraki (1966) from the early Pliocene Okui Fomation, Nagano Prefecture; ***Viviparus malleatus* (Reeve)** reported by Shikama (1936) from the Pleistocene Akashi Formation, Osaka Group, Hyogo Prefecture

***Cipangopaludina* var. *iwakawai* (Pilsbry)** see *Cipangopaludina japonica* (v. Martens)

***Cipangopaludina japonica* (v. Martens)** reported by Matsuoka and Nakamura (1981) and Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Cipangopaludina japonica* (v. Martens)** reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture; ***Cipangopaludina* var. *iwakawai* (Pilsbry)** reported by Omori and Ibaraki (1966) from the early Pliocene Okui Fomation, Komoro Group, Nagano Prefecture; ***Cipangopaludina japonica* (v. Martens)** reported by Kameyama (1968) from the Pleistocene Kotozaki Formation, Yamaguchi Prefecture

***Cipangopaludina malleata* (Reeve)** see *Cipangopaludina chinensis laeta* (v. Martens)

***Cipangopaludina soratiensis* Oyama, 1950**

Jour. Geol. Soc. Japan, vol. 56, no. 652, p. 36, text-fig. 1

Holotype: ?

Left shore of Sorachi-gawa, Ashibetsu-mati (Ashibetsu City), Sorati-gun, Hokkaido

Upper *Corbicula*-bearing Formation, (Hiragishi Formation, Ishikari Group) (Eocene)

***Cochlicopa lubrica* (Müller)** reported by Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture; ***Cionella lubrica* (Müller)** reported by Habe (1983) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Cyclophorus herklotsi* v. Martens** reported by Suzuki (1937) from the Pleistocene fissure filling deposit of limestone cave, Tochigi Prefecture

***Cyclophorus hirasei* (Pilsbry)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Cyclophorus turgidus kikaiensis* (Pilsbry)** (probably ***Cyclophorus kikaiensis* (pilsbry)**) reported by Habe (1983) and Fujie (2000) from the Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Diplommatina (Sinica) dormitor* Pilsbry** reported by Habe (1983) and Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Discoconulus sinapidium* (Reinhardt) ?** reported by Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Euhadra pachya* (Pilsbry)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Euhadra quaesita* (Deshayes)** reported by Suzuki (1937) from the Pleistocene fissure filling deposit of limestone cave, Tochigi Prefecture

***Faunas (Melanatria) kahoensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 12, no. 1, p. 103, pl. 15, figs. 2, 2a, b

Holotype: IGPS no. ?

The shaft of the colliery in the Kamiyamada Mine, Yamada-machi, Kaho-gun, province of Chikuzen (Yamada City, Fukuoka Prefecture)

The Kamiyamada fossil bed (Tateya Formation (Uwaishi Formation), Nogata Group)

(Eocene)

***Faunas (Faunas) nipponicus* Nagano, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 9, no. 3, p. 123, pl. 21, figs. 5, 5a, b

Holotype: IGPS no. 35719

Road side cutting along the sea shore, Akase, Oda-mura, Amakusa-Kami-shima, province of Higo (Uto City, Kumamoto Prefecture)

The Lower *Orthaulax japonicus* Zone (Shiratake Formation, Kamishima Group)

(Eocene)

***Gastrocopta (Sinalbinula) armigerella* (Reinhardt)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Georissa japonica* Pilsbry** reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Hawaiia minuscula* (Binney)** reported by Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Heterogen longispira* (Smith)** reported by Matsuoka and Nakamura (1981), Research Group for Natural History of Lake Biwa (1986) and Tomoda (1984) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

***Hydrobia (Parhydrobia) gyokusoensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 201, pl. 14, fig. 17

Holotype: ?

Butumodo, Gyokuso-men, Kato-gun, Keisyo-nan-do, Korea Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Igapaludina stricta* (Araki) see *Viviparus strictus* Araki, 1960**

***Itomelania basicordata* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 203-204, pl. 14, fig. 26A

Holotype: ?

About 400 m north of Umatoge, Todo-men, Sinsyu-gun, Keisyo-nan-do, Korea

Sinsyu Formation, (Naktong Subgroup)

Cretaceous

***Kumania kawaguchiensis* Ota, 1960**

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, no. 1, p. 10, pl. 1, fig. 18

Holotype: GK. K no. 7111

Shimomatsukuma-mura (Sakamoto-mura), Yatsushiro-gun, Kumamoto Prefecture

Kawaguchi Formation

Lower Cretaceous

***Lanistes ? kobayshii* Suzuki, 1942**

Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 6, pts. 4-10, p. 98, pl. 1, figs. 11, 12

Holotype: UMUT no. MM6401

Aitukan, about 10km northeast of Fulungchuan, Nangan-hsien, China

Nengkiang Formation, Sungari Series

Cretaceous

***Lioplax ? sungariana* Suzuki, 1942**

Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 6, pts. 4-10, p. 96, pl. 1, fig. 16

Holotype: UMUT no. MM6396

Aitukan, about 10 km northeast of Fulungchuan, Nangan-hsien, China

Nengkiang Formation, Sungari Series

Cretaceous

***Luchuhadra largillierti* (Pilsbry)** (probably ***Satsuma (Luchuhadra) largillierti* (Pfeiffer)**) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Luchuhadra sororcula* (Pilsbry)** (probably ***Satsuma (Luchuhadra) sororcula* (Pilsbry)**) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Melania cancellata* Yabe and Nagao, 1926**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 9, no. 2, p. 66, pl. 8, figs. 43-44

Syntype: IGPS no. 22444

Bomeki, Ohinata-mura (Saku-machi), Minamisaku-gun, Nagano Prefecture

Shiroi Formation

Cretaceous

***Melania grossula* Yokoyama, 1928**

Rep. Imp. Geol. Surv. Japan, no. 101, p. 61, pl. 5, fig. 8

Holotype: UT no. ?

The upper course of the Nairin, Tainan Prefecture, Taiwan

Lower Byoritz Formation, Miaoli Group

Pliocene

***Melania ? miikensis* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 9, no. 3, p. 122, pl. 18, figs. 11-13, pl. 21, fig. 13

Lectotype: IGPS no. ?

Takesaki, Koyagi-jima, province of Hizen (Koyagijima, Koyagi-machi, Nishisonogi-gun, Nagasaki Prefecture)

The Lower *Orthaulax japonicus* Zone (Futagojima Formation, Takashima Group)

(Eocene)

***Melania saigo* Yokoyama, 1928**

Rep. Imp. Geol. Surv. Japan, no. 101, p. 60, pl. 5, fig. 10

Holotype: UT no. ?

Shiko, Koshun, Takao Prefecture, Taiwan

Upper Byoritz Formation

Pliocene

***Melania scabroides* Yokoyama, 1928**

Rep. Imp. Geol. Surv. Japan, no. 101, p. 58, pl. 5, fig. 1

Holotype: UT no. ?

Shiko, Koshun, Takao Prefecture, Taiwan

Upper Byoritz Formation

Pliocene

***Melania submadiunensis* Yokoyama, 1928**

Rep. Imp. Geol. Surv. Japan, no. 101, p. 59, pl. 5, figs. 2-5

Holotype: UT no. ?

Between Rokujukei and Sekibyō, the upper course of the Nairin, Tainan Prefecture, Taiwan

Lower Byoritz Formation

Pliocene

Melanoidea (Semisulcospira) fiscina* (Yokoyama) see *Thiara fiscina* Yokoyama, 1932**Melanoidea (Yoshimonia) katsukiensis* Ota, 1960**

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, no. 1, p. 9-10, pl. 2, fig. 16

Holotype: TGWu.K. no. 811

About 1 km south of Hata reservoir, Katsuki-machi, Yahatanishi-ku, Kitakyushu City, Fukuoka Prefecture,

Upper Formation, Wakino Subgroup

Cretaceous

***Melanoidea (Yoshimonia) kokurensis* Hase, 1960**

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, p. 310-311, pl. 36, figs. 9a, b

Holotype: GK. H no. 6074

About 1 km south of Hata-reservoir, Yahatanishi-ku, Kitakyushu City, Fukuoka Prefecture

Sengoku Formation, Kwanmon Group

Cretaceous

***Melanoidea vulgaris* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 1-2, p. 50, pl. 5, figs. 22a, b

Holotype: UMUT no. MM7023

Izumi, Shimo-anama-mura (Izumi-mura), Ono-gun, Fukui Prefecture

Tetori Group

Jurassic

***Melanoidea otatumei* Suzuki, 1944**

Jour. Geol. Soc. Japan, vol. 51, no. 606, p. 101-102 (Jour. Geol. Soc. Tokyo, vol. 49, no. 586, pl. 10, figs. 9-20, Otatume, 1942)

Holotype: (Reg. no. ?)

Ashibetsu-machi, Sorachi-gun (Ashibetsu City, Hokkaido)

The Upper *Corbicula*-bearing formation (Hiragishi Formation, Ishikari Group)

(Eocene)

***Melanoidea vulgaris minima* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 1-2, p. 51, pl. 5, figs. 18a, b

Holotype: UMUT no. MM7024

Izumi, Shimo-anama-mura (Izumi-mura), Ono-gun, Fukui Prefecture

Tetori Group

Jurassic

***Melanoidea (Yoshimonia) yoshimoensis* Ota, 1960**

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, no. 1, p. 7-9, pl. 2, fig. 15a

Holotype: TGTu. Y. no. 682(a)

Costal region near Yoshimo, Shimonoseki City, Yamaguchi Prefecture

Yoshimo Formation, Toyonishi Group

Cretaceous

***Metazaptyx daemonorum* (Pilsbry)**

reported by Habe (1983), Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Micromelania ? katoensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 204-205, pl. 14, fig. 27

Holotype: ?

Butumodo, Gyokuso-men, Kato-gun, Keisyo-nan-do, Korea

Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Miocenehadra mizunamiensis* Habe and Itoigawa, 1976**

Bull. Mizunami Fossil Mus., no. 3, p. 1-2, pl. 1, figs. 1a-c, 2a-c
Holotype: MFM no. 10050

The well of Mr. Fumio Hayase's house, near the eastern end of the tunnel from Tsukiyoshi to Shobasama-hora, Tsukiyoshi, Akeyo-cho, Mizunami City, Gifu Prefecture
Tsukiyoshi Formation, Mizunami Group
Middle Miocene

***Miocenehadra nakamurai* Habe and Itoigawa, 1978**

Bull. Mizunami Fossil Museum, no. 5, p. 111-112, pl. 4, figs. 1-3
Holotype: MFM no. 10079

Near Matsugase-bashi of the Toki River, Ymanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture
Felaniella Bed, the uppermost part of the Togari Member, Akeyo Formation, Mizunami Group
Early Miocene

***Mirus eucharistu oshimanus* (Pilsbry) (probably *Luchuenae oshimanus* (Pilsbry))** reported by Habe (1983) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Nakadaella micron* (Pilsbry)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Paludinella ? kusuuensis* Suzuki, 1937**

Jour. Geol. Soc. Japan, vol. 44, p. 439-441, pl. 18(7), figs. 2a, b
Holotype: ?

Tuizi, Kuzuu-machi, Aso-gun, Tochigi Prefecture
Pleistocene fissure filling deposit of limestone cave
Pleistocene

***Paracompeloma kumaensis* Iwasaki, 1980**

Kumamoto Jour. Sci. Geol., vol. 12, no. 1, p. 35-36, pl. 2, figs. 5, 7, text-fig. 3

Holotype: KMSP no. 2014
At a river side cliff, Kawaguchi, Sakamoto-mura, Yatsushiro-gun, Kumamoto Prefecture
Kawaguchi Foramtion
Neocomian to Cenomanian, Cretaceous

***Parakaliella kikaigashimae* (Pilsbry and Hirase)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Phaeohelix phaeogramma* (Ancey)** reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Phaeohelix submandarina* (Pilsbry)** reported by Habe (1983) and Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Physa nisidai* Suzuki, 1941**

Bull. Geol. Inst. Manchoukuo, no. 101, p. 80, text-figs. 5a, b
Holotype: UMUT no. MM4244
Tata-tzu, Hua-lung Prefecture, Chien-tao Province, China
Talatzu Series
Cretaceous

***Pila fukamiensis* Iwasaki, 1980**

Kumamoto Jour. Sci., Geol., vol. 12, no. 1, p. 36, pl. 2, figs. 3, 6, 9, 10, 12, text-fig. 4

Holotype: KMSP no. 2018
At a river-side cliff, Kawaguchi, Sakamoto-mura, Yatsushiro-gun, Kumamoto Prefecture
Kawaguchi Formation
Neocomian to Cenomanian, Cretaceous

***Pila (Turbinicola ?) nipponica* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos.1-2, p. 49, pl. 5, figs. 14a, b

Holotype: (missing)
Kurouti, Kotakari-mura (Kurouchi, Frukawa-cho), Yoshiki-gun, Province Hida (Gifu Prefecture)
Tetori Group
Jurassic

***Pupilla (Gibbulinopsis) cryptodon* (Heude)** reported by Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Satsuma (Coniglobus) oshimae daemonorum* (Pilsbry) (probably *Satsuma (Satsuma) lewisii daemonorum* (Pilsbry))** reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Semisulcospira fiscina* (Yokoyama) see *Thiara fiscina* Yokoyama, 1932**

***Semisulcospira fiscina yokoyamai* Suzuki, 1944**

Jour. Geol. Soc. Japan, vol. 51, no. 606, p. 101-102 (Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 3, pt. 6, p. 22, pl. 1, figs. 5, Suzuki, 1941 ; Jour. Geol. Soc. Tokyo, vol. 49, no. 586, p. 162, pl. 10, figs. 7, 8, Otatume, 1942)

Holotype: (missing)
Akamano-sawa, Akabira-mura, Sorachi-gun (Akabira City, Sorachi-gun, Hokkaido)
Lower *Corbicula*-bearing Formation (Ishikari Group)
Eocene

***Semisulcospira (Biwamelania) habei* Davis (probably *Semisulcospira habei* Burch)** reported by Research Group for

Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Semisulcospira libertina (Gould) reported by Fossil Mollusc Research Group for Nojiri-ko Excavation (1987) from the late Pleistocene Nojiri-ko Formation, Nagano Prefecture

Semisulcospira (*Biwamelania*) *praemultigranosa* Matsuoka, 1985

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 139, p. 190-191, pl. 27, figs. 14a, b

Holotype: ESN no. 40023

Silt bed exposed on the confluence of the Hattori and Takasu Rivers, Hirata, Ohyamada-mura, Ayama-gun, Mie Prefecture (34° 45.6'N, 136° 13.5'E)

Ohyamada clays, Iga Formation (Ueno Formation), Kobiwako Group

Pliocene

Semisulcospira (*Semisulcospira*) *reiniana* (Brot) reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture

Sinoennea oshimana (Pilsbry) (probably *Sinoennea oshimana* (Pilsbry and Hirase)) reported by Habe (1983) and Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Sitalina latissima (Pilsbry) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Thiara fiscina Yokoyama, 1932

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 3, pt. 6, p. 237, pl. 1, figs. 2, 3

Lectotype: UMUT no. CM26053

The Yoriki-zawa, a branch of the Urashima (Uryu-gun, Hokkaido)

The Lower Numata Beds (Tachibetsu Formation, Uryu Group)

Oligocene (Eocene)

(*Semisulcospira fiscina* (Yokoyama) by Suzuki (1941); *Melanoides* (*Semisulcospira*) *fiscina* (Yokoyama) by Otatume (1942))

Thiara (*Siragimelania*) *tateiwai* Suzuki, 1940

Japan. Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 224, pl. 22, figs. 1a-c

Holotype: UMUT no. MM6315

Hyakuan-do, Hokuan-men, Eisen-gun, Keisyo-hoku-do, Korea

Taikyu Formation, (Siragi Subgroup)

Cretaceous

Thiara (*Siragimelania*) *tateiwai acuticostata* Suzuki, 1940

Japan. Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 226-227, pl. 23, figs. 3a-c

Holotype: UMUT no. MM6355

northwest of Kunkoku-ri, Sei-men, Keisyo-gun, Keisyo-hoku-do, Korea

Kansenri Formation, (Siragi Subgroup)

Cretaceous

Thiara totomiensis Makiyama, 1927

Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, vol. 3, no. 1, p. 66, pl. 3, fig. 7

Syntype: JC no. 200049

Dainichi, Fukuroi-City, Shizuoka Prefecture

Dainichi sand

Pliocene

Tornatellides boeningi (Schmacker and Boettger) reported by Fujie (2000) from the late Pleistocene and Holocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Truncatellina insulivaga (Pilsbry and Hirase) reported by Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Turotomoides japonica Habe and Tomoda, 1980

Bull. Mizunami Fossil Mus., no. 7, p. 85, pl. 5, figs. 1a, b

Holotype: NSMT-MO no. 98466

Bottom of River Yasu near Mikumo Railway Station of Kusatsu Line in Kosei-cho, Koga-gun, Shiga Prefecture

Koga Formation, Kobiwako Group

Upper Pliocene

Tulotomoides sanaguensis Matsuoka, 1985

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 139,

p. 188-189, pl. 27, fig. 1-1

Holotype: ESN no. 40047

Southwest side of the Tuge River, 150 m downstream of the Toyama-bashi, Toyama, Sanagu-cho, Ueno City, Mie Prefecture (34° 47.9'N, 136° 9.9'E)

Kashikimura sands, Iga Formation, Kobiwako Group

Pliocene

Urazirochlamys doentizii (Reinhardt) ? reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Videnoida horiomphala cultrata (Pilsbry and Hirase) reported by Habe (1983) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

Vertigo hirasei Pilsbry reported by Fujie (2000) from the late Pleistocene Ancient sand dune, Kikaijima Island, Kagoshima Prefecture

***Viviparus ishikariensis* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 6, pt. 1, p. 4, pl. 1, figs. 1a-c

Holotype: (missing)

Junction of Rivers Penkeporonai and Sorachi, Ashibetsu-mati, Sorachi-gun, Province of Isikari (Ashibetsu City, Hokkaido)

The Ashibetsu coal-bearing Formation, (Ashibetsu Formation, Ishikari Group)

Oligocene (Eocene)

(*Viviparus (Cipangopaludina) ishikariensis* Suzuki by Fukuda (1950))

Viviparus (Cipangopaludina) ishikariensis* Suzuki see *Viviparus ishikariensis* Suzuki, 1941**Viviparus jimboi* Suzuki, 1941**

Trans. Proc. Palaeont. Soc. Japan, O. S., no. 138, p. 100, text-figs. 5a, b

Holotype: ?

Sorachi-gun, Ishikari Province, Hokkaido

(Ishikari Group)

Oligocene (Eocene)

(*Viviparus (Cipangopaludina) jimboi* Suzuki by Fukuda (1950))

Viviparus (Cipangopaludina) jimboi* Suzuki see *Viviparus jimboi* Suzuki, 1941**Viviparus (Sinotaia ?) keisyoensis* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 199-200, pl. 14, figs. 1a, b

Holotype: UMUT no. MM ?

Butumodo, Gyokuso-men, Kato-gun, Keisyo-nan-do, Korea

Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Viviparus kosasanus* Ueji, 1934**

Venus, vol. 4, no. 6, p. 347, pl. 5, fig. 5

Holotype: ?

Island Nojima, Kosasa-mura, Kitamatsuura District, Province of Hizen (Kosaza-cho, Kitamatsuura-gun, Nagasaki Prefecture)

The Oligocene strata (Oya Formation, Nojima Group)

Oligocene (Miocene)

(*Bellamya kosasana* (Ueji) by Nagahama and Mizuno (1965))

***Viviparus mabutii* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 6, pt. 1, p. 6, pl. 1, figs. 2a-c

Holotype: (missing)

Junction of Rivers Penkeporonai and Sorachi, Ashibetsu-mati, Sorachi-gun, Province of Isikari (Ashibetsu City, Hokkaido)

The Ashibetsu coal-bearing Formation, (Ashibetsu Formation, Ishikari Group)

Oligocene (Eocene)

(*Viviparus (Idiopoma) mabutii* Suzuki by Fukuda (1950))

Viviparus (Idiopoma) mabutii* Suzuki see *Viviparus mabutii* Suzuki, 1941**Viviparus malleatus* (Reeve) see *Cipangopaludina chinensis laeta* (v. Martens)*****Viviparus onogoensis* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos.1-2, p. 48, pl. 5, figs. 13a, b

Holotype: UMUT no. MM7022

Izumi, Shimo-anama-mura (Izumi-mura), Ono-gun, Province Hida (Fukui Prefecture)

Tetori Group

Jurassic

(*Viviparus onogoensis* Kobayashi and Suzuki by Ota (1960) ;

Viviparus (Sinotaia ?) onogoensis Kobayashi and Suzuki by Hase (1963))

***Viviparus strictus* Araki, 1960**

Bull. Lib. Arts Dep., Mie Univ., Spec. vol. 1, p. 106-107, pl. 9, fig. 8

Holotype: (missing)

Road side cliff in eastern part of Kambe, Tsu City, Mie Prefecture (34 ° 42.4 N, 136 ° 29.2 E)

Wakebe Formation (Kusuhara Formation), Agé Group

Pliocene

(*Igagaludina stricta* (Araki) by Matsuoka (1985))

***Viviparus (Tulotomoides) talatzensis* Suzuki, 1941**

Bull. Geol. Inst. Manchokuo, no. 101, p. 86, pl. 1, figs. 6a, b

Holotype: ?

San-tao-kou, Hua-lung, Chien-tao, China

Talatzu Series

Lower Cretaceous

***Viviparus uryuensis* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 3, pt. 6, p. 236, pl. 1, figs. 8-10

Lectotype: UMUT no. CM26018

The Akaganesawa, a branch of the Okadagawa, Uryu Coal-fields, Ishikari Province, Hokkaido

The Upper Tachibetsu Beds (Techibetsu Formation)

Oligocene (Eocene)

(*Viviparus (Idiopoma) uryuensis* Yokoyama by Fukuda (1950); *Viviparus (Sinotaia) uryuensis* Yokoyama by Kanno (1954))

Viviparus (Idiopoma) uryuensis Yokoyama see *Viviparus uryuensis* Yokoyama, 1932

Viviparus (Sinotaia) uryuensis Yokoyama see *Viviparus uryuensis* Yokoyama, 1932

Viviparus (Sinotaia) uryuensis kosasanus (Ueji) see *Viviparus kosasanus Ueji, 1934*, reported by Suzuki and Oyama (1948) from the early Miocene Kabuto Formation, Suzuka Group, Mie Prefecture

Non-Marine Bivalvia

Anodonta (Sinanodonta) calipygos Kobelt reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Anodonta iwakawai Suzuki reported by Omori and Ibaraki (1966) from the early Pliocene Okui Formation, Komoro Group, Nagano Prefecture

Anodonta (Sinanodonta) japonica Clessin (not *Anodonta (Sinanodonta) japonica v. Martens*) reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; *Anodonta cf. japonica Clessin* reported by Shikama (1936) from the Pleistocene Akashi Formation, Osaka Group, Hyogo Prefecture

Anodonta (Sinanodonta) lauta (v. Martens) see *Anodonta (Sinanodonta) woodiana (Lea)*

Anodonta muroii Suzuki, 1941
Japan. Jour. Geol. Geogr., vol. 18, nos. 1-2, p. 56, pl. 4, fig. 6a, b
Holotype: UMUT no. CM15248
The Migigono-sawa, a branch of the Takara-zawa, Nayoshi-mura, Nayoshi-gun, Saghalin, Russia
Esutoru coal-bearing formation
Middle Miocene
(*Cristaria muroii (Suzuki)* by Suzuki (1944))

Anodonta (Sinanodonta) ogurae Kuroda (Oguranodonta ogurae Kuroda and Habe) reported by Research Group for Natural History of Lake Biwa (1986) and Tomoda (1984) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Anodonta suavis Yokoyama, 1932
Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 3, pt. 6, p. 244, pl. 4, fig. 1
Syntype: UMUT nos. CM26280, 26281, 26282
Shimoda-zawa, a branch of the Shisengawa, Uryu-gun, Ishikari Province, Hokkaido
Morokoshi Beds (Uryu Formation, Uryu Group)
Oligocene (Eocene)

Anodonta subjapanensis (Yokoyama) see *Nodularia subjapanensis Yokoyama, 1932*

Anodonta subjapanensis yokoyamai Suzuki, 1941
Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 6, pt. 2, p. 29-30, pl. 2, figs. 2a-c
Lectotype: UMUT no. CM26280
The Takahashi-zawa, a branch of the Horoni-tatibetsu river, (Numata-cho, Uryu-gun, Hokkaido)
Middle Numata Formation, (Uryu Group)
Oligocene (Eocene)
(*Anodonta subjapanensis yokoyamai Suzuki* by Kanno (1954))

Anodonta (Sinanodonta) woodiana (Lea) reported by Iwamizawa Dantai Research Group (1976) from the late Pleistocene Kakuta Formation, Hokkaido; *Anodonta (Sinanodonta) lauta (v. Martens)* reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture

Arconaia hosonoi Suzuki and Oyama, 1948
Venus, vol. 15, nos. 1-4, p. 42-43, fig. 5
Holotype: ?
About 300 m west of Hagiwara, Ake-mura, Kawage-gun (Geino-cho, Age-gun), Mie Prefecture
Jinbu coal-bearing Formation, Kabuto Group (Suzuka Group) (Miocene)

Corbicula amagasiraensis Kobayashi and Suzuki, 1937
Japan. Jour. Geol. Geogr., vol. 14, p. 45, pl. 5, fig. 8
Holotype: UMUT no. MM7007a
Amagashiradani, Otani, Kami-anama-mura (Izumi-mura), Ono-gun, Province Etizen (Fukui Prefecture)
Tetori Group
Jurassic

Corbicula atrata tokudai (Yokoyama) see *Circe tokudai Yokoyama, 1932*

Corbicula (Leptesthes ?) coreanica Kobayashi and Suzuki, 1936
Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 255, pl. 29, fig. 1
Holotype: UMUT no. MM7935
Shinshu area, Korea
Naktong Series (Naktong Formation)
Cretaceous
(*Nakamuranaia chingshanensis (Grabau)* by Suzuki (1943))

Corbicula kobelti Yokoyama, 1922
Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 1, p. 166, pl. 13, figs. 18-19
Syntype: UMUT nos. CM21468, 21469
Shito, Ichihara City, Chiba Prefecture
Shimofusa Group

Pleistocene

(Synonym of *Corbicula japonica Prime*)

***Corbicula hizenensis* Ueji, 1934**

Venus, vol. 4, no. 6, p. 344, pl. 5, fig. 3, pl. 6, fig. 9

Holotype: JC no. 1210008

Utagara, Shishimachi-mura, Kitamatsuura District, Province of Hizen (Shikamachi-cho, Kitamatsuura-gun, Nagasaki Prefecture)

Sasebo group (Fukui Formation, Sasebo group)

Oligocene (Miocene)

(*Corbicula hizenensis* Ueji by Suzuki (1941); *Corbicula hizensis* Ueji by Matsuoka and Okamoto (1998))

***Corbicula hukayai* Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 26, pl. 4, figs. 10-17

Lectotype: UH. no. 9311

Nayoshi-mura, Nayoshi-gun, Saghalien, Russia

Nayoshi coal-bearing bed (Naibuchi Group)

Miocene

***Corbicula iburica* Yokoyama, 1931**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 3, pt. 4 p. 194, pl. 11, fig. 8

Holotype: UMUT no. CM25827

Junction of Shikerepe and Mukawa, Yufutsu-gun, (Iburi Province), Hokkaido

Unknown (Takinoue Formation ?)

Neogene

Corbicula leana Prime reported by Fossil Mollusc Research Group for Nojiri-ko Excavation (1987) from the late Pleistocene Nojiri-ko Formation, Nagano Prefecture; ***Corbicula leana Prime*** reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture; ***Corbicula (Corbiculina) leana Prime*** reported by Matsuoka and Nakamura (1981) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Corbicula leana Prime*** reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Corbicula (Corbiculina) leana Prime see ***Corbicula leana Prime***

***Corbicula matusitai* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 6, pt. 3, p. 58-61, pl. 4, figs. 8-11

Holotype: UMUT no. CM15243

Main gallery of the Matsuura mine, Sechibaru, Sechibaru-mura (Sechibaru-cho), Kitamatsuura-gun, Nagasaki Prefecture

Sechibaru Formation, Sasebo group

Latest Oligocene or Early Miocene (Miocene)

***Corbicula (Cyrenobatissa) cf. mirabilis* (Nagao) see *Cyrena mirabilis* Nagao, 1928**

***Corbicula (Cyrenobatissa) muratai* (Nagao and Otatume) see *Batissa muratai* Nagao and Otatume, 1943**

***Corbicula (Batissa) nagaoui* Suzuki, 1941 see *Batissa nagaoui* Suzuki, 1941**

***Corbicula nakayamana* Ueji, 1934**

Venus, vol. 4, no. 6, p. 346, pl. 7, fig. 15

Holotype: UMUT no. ?

Utagara, Shishimachi-mura, Kitamatsuura District, Province of Hizen (Shikamachi-cho, Kitamatsuura-gun, Nagasaki Prefecture)

Sasebo group (Sechibaru Formation, Sasebo group)

Oligocene (Miocene)

***Corbicula (Cyrenobatissa) nisikawai* (Otatume) see *Batissa nisikawai* Otatume, 1943**

***Corbicula sachalinensis* Suzuki, 1943**

Venus, vol. 12, nos. 3-4, p. 163-165, pl. 8, figs. 5a-c

Holotype: ?

Middle reach of River Tuimis, North Saghalien, Russia

Mach Group

Aquitanian, Miocene

***Coricula (Veloritina ?) sanchuensis* Yabe and Nagao, 1926**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 9, no. 2, p. 53, pl. 7, figs. 8, 8a,

pl. 8, figs. 8-10, 17, 17a

Holotype: ?

Bomeki, Ohinata-mura (Saku-machi), Minamisaku-gun, Nagano Prefecture

Shiroi Group

Cretaceous

Corbicula sandai Reinhardt reported by Research Group for Natural History of Lake Biwa (1986) and Tomoda (1984) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

***Corbicula sandaiformis* Yokoyama, 1922**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 1, p. 165, pl. 13, figs. 15-16

Syntype: UMUT nos. CM21463, 21464

Shito, Ichihara-gun (Ichihara City), Chiba Prefecture

Shimoso Group

Pleistocene

(Synonym with *Corbicula japonica Prime*)

***Corbicula shimizui* Suzuki, 1943**

Venus, vol. 12, nos. 3-4, p. 161, pl. 7, figs. 2a-c

Holotype: IGPS no. 8353a
Middle reach of River Tuimis, North Saghalien, Russia
Mach Group
Aquitanian, Miocene

***Corbicula sitakaraensis* Suzuki, 1941**

Japan. Jour. Geol. Geogr., vol. 18, nos. 1-2, p. 57-58, pl. 4, figs. 1a, b

Holotype: (missing)
Karisyo, Shiranuka-mura (Shiranuka-cho), Shiranuka-gun, Kushiro Province, Hokkaido
Shitakara Formation, (Uraho Group)
Oligocene (Eocene)
(*Corbicula (Batissa) sitakaraensis* Suzuki by Minato (1950))

***Corbicula (Batissa) sitakaraensis* Suzuki see *Corbicula sitakaraensis* Suzuki, 1941**

***Corbicula sunagawaensis* Nagao and Otatume, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 7, no. 1, p. 9, pl. 3, figs. 10, 10a

Holotype: UH. no. 9305
Kamisanagawa colliery, Sunagawa-machi (Kamisanagawa-cho), Sorachi-gun, Ishikari Province, Hokkaido
(Wakkanabe Formation, Ishikari Group)
Lower Oligocene (Eocene)
(*Corbicula sunagawaensis* Nagao and Otatume by Minato (1950))

***Corbicula takasago* Nomura, 1933**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 16, no. 1, p. 69, pl. 2, figs. 1a, b, 2a, b

Holotype: IGPS no. 45079
Wangwa, Koryu-sho, Chikunan-gun, Shinchiku-syu, Taiwan
Byoritsu beds
Pliocene

***Corbicula tetoriensis* Kobayashi and Suzuki, 1937**

Japan. Jour. Geol. Geogr., vol. 14, nos. 1-2, p. 46, pl. 4, figs. 9a, b

Holotype: ?
Izumi, Shimo-anama-mura (Izumi-mura), Ono-gun, Province Hida (Fukui Prefecture)
Tetori Group
Jurassic

***Corbicula tokudai* (Yokoyama) see *Circe tokudai* Yokoyama, 1932**

***Cristaria* ? sp. aff. "*Leptesthes*" *chingshanensis* Grabau** reported by Kobayashi and Suzuki (1936) from the Cretaceous Naktong Series (Naktong Subgroup), Korea

***Cristaria kuboii* Suzuki and Oyama, 1948**

Venus, vol. 15, nos. 1-4, p. 41-42, figs. 1, 2
Holotype: ?

Kitayama-pass, north of Kuga, Ake-mura, Kawage-gun (Geinou-cho, Age-gun), Mie Prefecture
Hagiwara coal-bearing Formation, (Suzuka Group)
(Miocene)

***Cristaria plicata* (Leach)** reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Cristaria plicata* (Leach)** reported by Iwamizawa Dantai Research Group (1976) from the late Pleistocene Kakuta Formation, Hokkaido; ***Cristaria plicatus spatiosa* (Clessin)** reported by Makiyama and Sakamoto (1957) from the Pleistocene Ogasa Group, Shizuoka Prefecture; ***Cristaria plicatus spatiosa* Clessin** reported by Nakamura *et al.* (1936) from the middle Pleistocene Otokun Formation, Osaka Group, Kyoto; ***Cristaria plicatus spatiosa* (Clessin)** reported by Araki (1960) from the Pliocene Toshima Formation (Kusuhara Formation, Age Group), Mie Prefecture

***Cristaria plicatus spatiosa* (Clessin) see *Cristaria plicata* (Leach)**

***Cristaria muroii* (Suzuki) see *Anodonta muroii* Suzuki, 1941**

***Cristaria sasai* Suzuki, 1948**

Venus, vol. 15, nos. 1-4, p. 45-46, figs. 1, 2
Holotype: RINR no registration

The Kocho-zawa, a branch of Banno-sawa, Mitsui-Ashibetsu coal-mine, (Ashibetsu City), Sorachi-gun, Hokkaido
Lower *Corbicula*-bearing formation (Akabira Formation), Ishikari Group
(Eocene)

***Cuneopsis (Cuneopsis) gracilentata* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 149, p. 423-425, fig. 5-1

Holotype: ESN no. 40023
A riverbed on the north side of the Hattori and Takasu Rivers, Hata, Ohyamada-mura, Ayama-gun, Mie Prefecture
(34° 46'N, 136° 12.1'E)
Ohyamada Clays, Iga Formation (Ueno Formation), Kobiwako Group
Pliocene

***Cuneopsis heudei nihowanensis* Otuka, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 8, p. 482, figs. 3-5

Syntype: UMUT nos. CM13177, 13176, 13179
Valley floor, SW of Liuchiashaopu, San-Kien-Ho Basin, Tsanan, Menchiang, Inner Mongolia, China
Nihowan beds
(Early Pleistocene)

***Cuneopsis nagahamai* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 9, pl. 1, figs. 1, 1a, b

Holotype: GSJ no. 5260

Kurosaki, (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Fukazuki Formation, Nojima Group

Miocene

***Cuneopsis (Cuneopsis) okuyamai* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 149, p. 425-426, figs. 5-5a, b

Holotype: ESN no. 40086

Hirata, Ohyamada-mura, Ayama-gun, Mie Prefecture (34° 46'N, 136° 12.1'E)

Ohyamada Clays, Iga Formation (Ueno Formation), Kobiwako Group

Pliocene

***Cuneopsis praeambiguus* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 9-10, pl. 1, figs. 3, 3a, b

Holotype: GSJ no. 5261

Kurosaki, (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Fukazuki Formation, Nojima Group

Miocene

***Cuneopsis (Tchangsinia) praemaxima* Matsuoka, 1988**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 149, p. 427, figs. 4-4a-c

Holotype: ESN no. 40081

Hojiro, Ohyamada-mura, Ayama-gun, Mie Prefecture (34° 44.4'N, 136° 12.9'E)

Ohyamada Clays, Iga Formation (Ueno Formation), Kobiwako Group

Pliocene

***Cuneopsis pseudobarbouri* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 10, pl. 1, fig. 4

Holotype: GSJ no. 5341

Yoshinoura, Sasamachi (Saza-cho), Kitamatsuura-gun, Nagasaki Prefecture

Ainoura Formation, Sasebo Group (Kashimae Formation ?, Ainoura Group)

Miocene (Oligocene)

***Hyriopsis matsuurensis* Ueji, 1934**

Venus, vol. 4, no. 6, p. 342, pl. 5, figs. 1, 2

Holotype: ?

Island Nojima, Kosasa-mura, Kitamatsuura District, Province of Hizen (Kosaza-cho, Kitamatsuura-gun, Nagasaki Prefecture)

The Oligocene strata (Oya Formation, Nojima Group)

Oligocene (Miocene)

***Hyriopsis mabutii* Oyama, 1950**

Jour. Geol. Soc. Japan, vol. 56, no. 652, p. 36, text-fig. 2

Holotype: no registration

Right shore of the Sorachi-gawa River, Ashibetsu-mati (Ashibetsu City), Sorachi-gun, Hokkaido

Upper *Corbicula*-bearing Formation (Hiragashi Formation, Ishikari Group)

(Eocene)

Hyriopsis schlegeli* (v. Martens) see *Limnoscapha schlegeli* (v. Martens)**Indonaia churia* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 162, fig. 4-1

Holotype: TMNH no. 02034

The right bank of the Narayani River, 500 m south of the confluence with the Binai Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Indonaia narayani* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 162-164, fig. 4-4

Holotype: TMNH no. 02037

The right bank of the Narayani River, 500 m south of the confluence with the Binai Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Indonaia jimuriensis* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 164, fig. 4-8

Holotype: TMNH no. 02041

About 1.3 km northwest of Dumkibas, at the left bank of the Jimuri Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Indonaia tenella* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 164, fig. 4-12

Holotype: TMNH no. 02047

South Dumkibas, along the Kedi Khola, about 800 m upstream from the confluence with the Binai Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

Inversidens brandti* (Kobelt)** reported by Matsuoka and Nakamura (1981) and Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga PrefectureInversidens hirasei* (Haas)** (synonym of *Inversiunio reinianus* (Kobelt)), reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata

Formation, Kobiwako Group, Shiga Prefecture; *Inversidens hirasei* (Haas) reported by Matsuoka (1982) from the middle Pleistocene Ama Formation, Tokai Group, Aichi Prefecture; *Inversidens cf. hirasei* (Haas) reported by Shikama (1936) from the Pleistocene Akashi Formation, Osaka Group, Hyogo Prefecture

***Inversidens isikariana* Suzuki, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 150, pl. 18, figs. 3a-c

Holotype: UH no.9052

Pirakesyomanai-zawa in the vicinity of Moziri, Akabira-mura (Akabira City), Sorati-gun, Ishikari Province, Hokkaido

Lower *Corbicula*-bearing Formation, (Ishikari Group)

Oligocene (Eocene)

Inversidens japonensis (Lea) reported by Matsuoka and Nakamura (1981) Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; *Inversidens japonensis* (Lea) reported by Fossil Mollusc Research Group for Nojiri-ko Excavation (1987) from the late Pleistocene Nojiri-ko Formation, Nagano Prefecture; *Inversidens japonensis* (Lea) reported by Matsuoka and Shimizu (1988) from the middle Pleistocene Toyono Formation, Nagano Prefecture; *Inversidens ? japonensis* (Lea) reported by Omori and Ibaraki (1966) from the early Pliocene Okui Formation, Komoro Group, Nagano Prefecture

***Inversidens kobayashiensis* (Otuka) see *Unio kobayashiensis* Otuka, 1934**

***Inversidens reinianus* (Kobelt) (*Inversiuinio reinianus* (Kobelt))** reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

***Koreanaia cheongi* Yang, 1976**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 102, p. 321, pl. 33, fig. 11

Holotype: KPE no. 1031

Myogog, Jaesan-myeon, Bonghwa-gun, Gyeongsang-buk-do, Korea

Myogog Formation

Upper Jurassic (?)

***Lamellidens arungensis* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 158-160, fig. 3-1

Holotype: TMNH no. 02027

About 700 m west of the confluence with the Murali Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Lamellidens longiformis* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 160-162, fig. 3-5

Holotype: TMNH no. 02031

The right bank of the Narayani River, 500 m south of the confluence with the Binai Khola, Nepal

Binai Khola Formation, Churia (Siwalik) Group

Mio-Pliocene

***Lamprotula divaricata* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 8-9, pl. 1, figs. 7, 7a

Holotype: GSJ no. 5251

Oya coast, Shikamachi (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation, Nojima Group

Miocene

***Lamprotula kusabi* Otuka, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 8, p. 480, figs. 6, 7

Holotype: UMUT no. CM13176

A valley floor, SW of Liuchiashiaopu, San-Kien-Ho Basin, Tsanan, Menchiang, Inner Mongolia, China

Lower Nihowan Beds

(Early Pleistocene)

***Lamprotula nagahamai* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 7-8, pl. 2, figs. 2, 2a

Holotype: GSJ no. 5257

Oya coast, Shikamachi (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation, Nojima Group

Miocene

***Lamprotula nojimensis* Ueji, 1934**

Venus, vol. 4, no. 5, p. 284, text-figs. 1, 2.

Holotype: ATJR no. MM ?

Nojima Island, Kosasa-mura (Kosaza-cho, Kitamatsuura-gun), Nagasaki Prefecture

The Oligocene strata (Oya Formation, Nojima Group)

Oligocene (Miocene)

(*Lamprotula nojimensis* Ueji by Ueji (1934))

***Lamprotula uejii* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 6-7, pl. 2, figs. 4, 4a

Holotype: GSJ no. 5265

Oya coast, Shikamachi (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation, Nojima Group

Miocene

***Lanceolaria gladiolus* (Heude)** see ***Lanceolaria grayana* (Lea)**
***Lanceolaria grayana* (Lea)** reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Lanceolaria grayana gladiolus* (Heude)** reported by Shikama (1936) from the Pleistocene Akashi Formation, Osaka Group, Hyogo Prefecture

***Lanceolaria oxyrhyncha* (v. Martens)** reported by Omori and Ibaraki (1966) from the early Pliocene Okui Formation, Komoro Group, Nagano Prefecture; ***Lanceolaria oxyrhyncha* (v. Martens)** reported by Research Group for Natural History of Lake Biwa (1986), from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Lanceolaria oxyrhyncha* ? (v. Martens)** reported by Nakamura *et al.* (1936) from the middle Pleistocene Otokun Formation, Osaka Group, Kyoto

***Lanceolaria pisciformis* (Yokoyama)** see ***Nodularia pisciformis* Yokoyama, 1932**

***Lanceolaria sakaii* Suzuki, 1942**

Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 6, pts. 4-10, p. 100, pl. 1, figs. 3a, b

Holotype: UMUT no. MM6406

Chengtzukow, 10 km southeast of Fulungchuan, Nungan-hsien, China

Sungari Series (Fulung Foramtion)

Cretaceous

***Lepidodesma japonica* Mizuno, 1966**

Rep., Geol. Sur. Japan, no. 215, p. 11, pl. 2, fig. 8, text-fig. 4

Holotype: GSJ nos. 5267 (left valve), 5268 (right valve)

Oya coast, Shikamachi (Shikamachi-cho), Kitamatsuura-gun, Nagasaki Prefecture

Oya Formation, Nojima Group

Miocene

***Lepidodesma septemtrionale* Suzuki, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 154, pl. 18, figs. 2a, b

Holotype: UH no. 9051

Nisimata, Otaai-zawa, Bibai-mati (Utashinai City), Sorachi-gun, Hokkaido

Yubari coal-bearing Formation (Yubari Formation, Ishikari Group)

Oligocene (Eocene)

***Lepidodesma uejii* Kuroda, 1939**

Venus, vol. 9, no. 2, p. 64 (Venus, vol. 4, no. 6, p. 344, pl. 5, figs. 6, 7 ; pl. 7, fig. 13, Ueji, 1934)

Holotype: ?

Kase, Shishimati-mura, Kitamatsuura District, Province Hizen (Shikamachi-cho, Kitatatsuura-gun, Nagasaki Prefecture)

The Oligocene strata (Oya Formation, Nojima Group)
 Oligocene (Miocene)

(***Lepidodesma uejii* Kuroda** by Mizuno (1965))

***Limnoperna* (?) *sengokuensis* Hase, 1960**

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, p. 318-319, pl. 36, fig. 23

Holotype: IGSB no. HA 161

Along the coast near Yoshimo and Yoshimi, (Shimonoseki City), Yamaguchi Prefecture

Sengoku Formation, Wakino Subgroup, Kwanmon Group

Cretaceous

***Limnoscapha schlegeli* (v. Martens)** reported by Matsuoka

(1983) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Hyriopsis schlegeli* (v. Martens)** reported by Makiyama and Sakamoto (1957) from the Pleistocene Ogasa Group, Shizuoka Prefecture; ***Limnoscapha***

(*Nipponihyria*) *schlegeli* (v. Martens) reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; ***Hyriopsis schlegeli* (v. Martens)** reported by Tomoda (1984) from the middle Pleistocene Katata Formation, Kobiwako Group; ***Hyriopsis schlegeli* (v. Martens)** reported by Nakamura *et al.* (1936) from the middle Pleistocene Otokun Formation, Osaka Group, Kyoto; ***Hyriopsis schlegeli* (v. Martens)** reported by Shikama (1936) from the Pleistocene Akashi Formation, Osaka Group, Hyogo Prefecture

***Limnoscapha* (*Nipponihyria*) *schlegeli* (v. Martens)** see ***Limnoscapha schlegeli* (v. Martens)**

***Lymnium douglasiae nipponensis* (v. Martens)** see ***Unio* (*Nodularia*) *douglasiae* (Griffith and Pidgeon)**

***Margaritifera margaritifera* (Linnaeus)** (probably ***Margaritifera laevis* (Haas)**) reported by Omori and Ibaraki (1966) from the early Pliocene Okui Formation, Komoro Group, Nagano Prefecture

***Margaritifera otatumei* Suzuki, 1942**

Japan. Jour. Geol. Geogr., vol. 18, no. 4, p. 148-149, pl. 17, figs. 4a-c

Holotype: UH. no. 9047

Utashinai, Utashinai-mati (Utashinai City), Sorachi-gun, Hokkaido

Wakkanappe Formation, Ishikari Group

Oligocene (Eocene)

***Margaritifera owadaensis* Noda, 1970**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 77, p. 240, pl. 25, figs. 3a-c

Holotype: IGPS no.86893

Exposure along the national road side near Owada, Rumoi City,

Hokkaido
Owada Formation
Eocene

Margaritifera perdahurica (Yokoyama) see *Margaritana perdahurica* Yokoyama, 1932

***Margaritana perdahurica* Yokoyama, 1932**

Jour. Fac. Sci. Imp. Univ. Tokyo, Sect. 2, vol. 3, pt. 6, p. 244, pl. 4, fig. 2

Lectotype: UMUT no. CM26277

Rakkwanzawa, a branch of the Shisengawa, Uryu coal-fields, Ishikari Province, Hokkaido

Upper Tachibetsu Beds (Tachibetsu Formation, Uryu Group)

Oligocene (Eocene)

(*Margaritifera perdahurica* (Yokoyama) by Suzuki (1941))

Nakamuraia chingshanensis (Grabau) see *Corbicula* (*Leptesthes* ?) *coreanica* Kobayashi and Suzuki, 1936

“*Nippononaia*”(?) *obsoleta* Hase, 1960

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, p. 317-318, pl. 37, figs. 10a-d

Holotype: IGSB no. HA166

Nearly halfway between Okochi and Jiyoshi, Nishiichi-cho (Toyota-machi), Toyoura-gun, Yamaguchi Prefecture

Shiohama Formation, Shimonoseki Subgroup, Kwanmon Group

Cretaceous

(*Trigonioides* (*Wakinoa*) *obsoleta* (Hase) by Ota (1963))

Nippononaia ryosekiana (Suzuki) see *Unio* (*Nippononaia*) *ryosekiana* Suzuki, 1941

“*Nippononaia*” *sengokuensis* Ota, 1959

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 34, p. 108, pl. 11, fig. 8

Holotype: WI. S. no. 5053

Rikimaru, Miyata-machi, Kurate-gun, Fukuoka Prefecture

Sengoku Formation, Wakino Subgroup, Kwanmon Group

Early Cretaceous

(*Trigonioides* (*Wakinoa*) *sengokuensis* (Ota) by Ota (1963))

***Nippononaia tetoriensis* Maeda, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 245-247, pl. 38, fig. 2

Holotype: R. no. 61801

Yanagidani, Shiramine-mura, Ishikawa-gun, Ishikawa Prefecture

Kuwajima alternation, Itoshiro Subgroup, Tetori Group

probably Late Jurassic

“*Nippononaia*” *wakinoensis* Ota, 1959

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 34, p. 107, pl. 11, fig. 1

Holotype: WI. S. no. 5060

Rikimaru, Miyata-machi, Kurate-gun, Fukuoka Prefecture

Sengoku Formation, Wakino Subgroup, Kwanmon Group

Early Cretaceous

(“*Nippononaia*” *wakinoensis* Ota by Hase (1960); *Trigonioides* (*Wakinoa*) *wakinoensis* (Ota) by Ota (1963))

“*Nippononaia*” *wakinoensis intermedia* Hase, 1960

Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, p. 316, pl. 37, fig. 5

Holotype: IGSB-HA no. 136

On the coast of Knda-misaki, Kantama-mura (Shimonoseki City), Yamaguchi Prefecture

Upper Wakamiya Formation, Kwanmon Group

Cretaceous

(*Trigonioides* (*Wakinoa*) *wakinoensis intermedia* (Hase) by Ota (1963))

***Nodularia pisciformis* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 3, pt. 6, p. 243, pl. 3, figs. 1-2

Lectotype: UMUT no. CM26266

Sasakizawa River, (Uryu-gun, Ishikari Province, Hokkaido)

Upper Tachibetsu Beds (Tachibetsu Formation, Uryu Group)

Oligocene (Eocene)

(*Lanceolaria pisciformis* (Yokoyama) by Suzuki (1941))

***Nodularia subjapanensis* Yokoyama, 1932**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 3, pt. 6, p. 242-243, pl. 4, figs. 3a-c

Syntype: CM nos. 26264, 26265

The Sasaki River, Uryu-gun, Ishikari Province, Hokkaido

The Upper Tachibetsu Beds (Tachibetsu Formation, Uryu Group)

Oligocene (Eocene)

(*Anodonta subjapanensis* (Yokoyama) by Suzuki (1942), Kanno (1954))

***Nogdongia leei* Yang, 1976**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 102, p. 324, pl. 34, fig. 19

Holotype: KPE no. 1219

Myogog, Jaesan-myeon, Bonghwa-gun, Gyeongsang-buk-do, Korea

Myogog Formation

Upper Jurassic (?)

***Nogdongia soni* Yang, 1975**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 100, p. 180, pl. 16, fig. 1

Holotype: KPE no. 1111

South of Geummu-san, Waegwanub, Chilgok-gun, Gyeongsang-buk-do, Korea

Yeonhwadong Formation, Nagdong Subgroup, Gyeongsang Group

Upper Mesozoic

(*Nogdongia soni* Yang by Ogasawara (1988))

***Paranodonta otai* Kobayashi & Suzuki, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 253, pl. 27, fig. 7
Holotype: UMUT no. MM7921

East of Rikimaru, Miyata-mura, Anzyu-gun (Miyata-machi, Kurate-gun), Fukuoka Prefecture
Rikimaru black shale (Sengoku Formation), Wakino Subgroup, Kwanmon Group
Cretaceous

***Parreysia binaiensis* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 165, fig. 5-1
Holotype: TMNH no. 02050

About 700 m west of the confluence of the west-east flowing Arung Khola and the north-south flowing Murai Khola, Nepal
Binai Khola Formation, Churia (Siwalik) Group
Mio-Pliocene

***Parreysia zigzagicostata* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 165-166, fig. 5-6

Holotype: TMNH no. 02058
About 700 m west of the confluence of the west-east flowing Arung Khola and the north-south flowing Murai Khola, Nepal
Binai Khola Formation, Churia (Siwalik) Group
Mio-Pliocene

***Physonia chitwanensis* Takayasu, Gurung and Matsuoka, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 179, p. 166-168, fig. 5-11

Holotype: TMNH no. 02063
The right bank of the Narayani River, 500 m south of the confluence with the Binai Khola, Nepal
Binai Khola Formation, Churia (Siwalik) Group
Mio-Pliocene

***Plicatounio kobayashii* Maeda, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 347, pl. 53, fig. 1

Holotype: R. no. 61102702
Kitadani-mura, Ono-gun (Katsuyama City), Fukui Prefecture
Kitadani alternation, Akaiwa Subgroup, Tetori Group
Early Cretaceous

“*Plicatounio*” *kwanmoensis* Ota, 1959

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 33, p. 17, pl. 3, figs. 1-3

Holotype: WI. S. no. 5100
Sengoku, Miyata-machi, Kurate-gun, Fukuoka Prefecture
Sengoku Formation, Wakino Subgroup, Kwanmon Group
Early Cretaceous

(*Plicatounio* (*Kwanmonia*) *kwanmoensis* Ota by Ota (1963))

***Plicatounio* (*Kwanmonia*) *kwanmoensis* Ota see “*Plicatounio*” *kwanmoensis* Ota, 1959**

***Plicatounio naktongensis* Kobayashi and Suzuki, 1936**

Japan. Jour. Geol. Geogr., vol. 13, p. 252, pl. 28, figs. 1a, b
Holotype: UMUT no. MM7926

Ryohori, Kinyo-men, Kato-gun, Keisyo-nan-do, Korea
Rakuto Bed (Naktong Subgroup)
Cretaceous

(*Plicatounio naktongensis* Kobayashi and Suzuki by Suzuki (1943); *Plicatounio* (*Kwanmonia*) *naktongensis* Kobayashi and Suzuki by Ota (1963))

***Plicatounio* (*Kwanmonia*) *naktongensis* Kobayashi and Suzuki see *Plicatounio naktongensis* Kobayashi and Suzuki, 1936**

***Plicatounio naktongensis multiplicatus* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 211, pl. 16, fig. 1.

Holotype: UMUT no. MM ?
Umatoge, Gyokuhoty, Sinsyu-hu, Keisyo-nan-do, Korea
Sinsyu Formation, (Naktong Subgroup)
Cretaceous

(*Plicatounio naktongensis* Kobayashi and Suzuki by Tamura (1977))

***Plicatounio* (*Tamuraia*) *tamurai* Gou, 1981**

On Trigonoidaceans (Non-Marine Cretaceous Bivalves) and Asian non-marine Cretaceous system, p. 120-122, text-figs. 11, (Mem. Fac. Educ., Kumamoto Univ., Nat. Sci., no. 26, p.115, pl. 3, figs. 3a, b, Tamura, 1977)

Holotype: KE no. 2514
Kamimashiki-gun, Kumamoto Prefecture
Mifune Group
Cretaceous

***Plicatounio tetoriensis* Maeda, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 348, pl. 53, fig. 5

Holotype: R. no. 61102501
Kitadani-mura, Ono-gun (Katsuyama City), Fukui Prefecture
Kitadani alternation, Akaiwa Subgroup, Tetori Group
Early Cretaceous

***Plicatounio triangularis* Kobayashi and Suzuki, 1936**

Japan. Jour. Geol. Geogr., vol. 13, p. 252, pl. 28, figs. 5a-b
Holotype: UMUT no. MM7931

East of Rikimaru, Miyata-mura, Anzyu-gun (Miyata-machi, Kurate-gun), Fukuoka Prefecture
Rikimaru black shale (Sengoku Formation), Wakino Subgroup, Kwanmon Group

Cretaceous

***Pseudodon pingi* Otuka, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 8, p. 483, figs. 1, 1a, 2

Holotype: (missing)

Valley floor, SW of Liuchiashaopu, San-Kien-Ho Basin, Tsanan, Mechiang, Inner Mongolia, China

Nihowan beds

(Early Pleistocene)

***Pseudohyria matsumotoi* Yang, 1979**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 116, p. 229-230, pl. 28, fig. 1

Holotype: KPE no. 2163

Weolmagdong, Ssangrim-myeon, Goryeong-gun, Gyeongsangbuk-do, Korea

Yeonhwadong Formation, Gyeongsang Group

Cretaceous

(*Pseudohyria matsumotoi* Yang by Ogasawara (1988))

***Schistodesmus antiquus* Suzuki, 1943**

Jour. Sigenkagaku Kenkyusyo, vol. 1, no. 2, p. 216, pl. 18, figs. 7a, b

Holotype: UMUT no. MM ?

Butumodo, Gyokuso-men, Kato-gun, Keisyo-nan-do, Korea

Kinbu Formation, (Naktong Subgroup)

Cretaceous

***Sphaerium anderssoni anderssoni* (Grabau)** reported by Hase (1960) from the Cretaceous Wakamiya Formation, Kwanmon Group, Fukuoka Prefecture

***Sphaerium anderssoni jeholense* (Grabau)** reported by Hase (1960) from the Cretaceous Wakamiya Formation, Kwanmon Group, Fukuoka Prefecture

***Sphaerium chientaense* Suzuki, 1941**

Bull. Geol. Inst. Manchokuo, no. 101, p. 84, pl. 1, fig. 2

Holotype: ?

Tung-fo-ssu, Hua-lung, Chien-tao, China

Talatzu Series

Lower Cretaceous

***Sphaerium fulungchuanense* Suzuki, 1942**

Jour. Fac. Sci., Imp. Univ. Tokyo, vol. 6, pts. 4-10, p. 103, pl. 1, fig. 7

Holotype: UMUT no. MM6408

Chengtzukow, 10 km southeast of Fulungchuan, Nungan-hsien, China

(Fulung Formation), Sungari Series

Cretaceous

***Torigonioides (Kumamotoa) amakusensis* Kikuchi and Tashiro, 1999**

Mem. Fac. Sci. Kochi Univ., Ser. E, Geol., vol. 19, p. 26, pl. 1, fig. 1

Holotype: GCM-D no. 1005

Eboshi, Goshonoura Island, Goshonoura-machi, Kumamoto Prefecture

Lower Goshonoura Group

Late or latest Albian (Cretaceous)

***Torigonioides (Koreanaia) bongkyuni* Yang, 1979**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 116, p. 227, pl. 27, fig. 9

Holotype: KPE no. 2190

Weolmagdong, Ssangrim-myeon, Goryeong-gun, Gyeongsangbuk-do, Korea

Yeonhwadong Formation, Gyeongsang Group

Cretaceous

***Trigonioides kitadaniensis* Maeda, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 51, p. 83, pl. 12, figs. 10, 11

Holotype: R. no. 61121716

A point on the right bank of the Nakanomata River, North of Sugiyama, Kitadani-mura (Katsuyama City), Fukui Prefecture

Kitadani alternation, Akaiwa Subgroup, Tetori Group

Early Cretaceous

***Trigonioides kobayashii* Matumoto, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 532, p. 14, pl. 2, fig. 2

Lectotype: (missing)

Kyodomari, Gosyonoura Island, (Gosyonoura-machi, Amakusagun), Kumamoto Prefecture

Gosyonoura Group

Cretaceous

(*Trigonioides matsumotoi* Kobayashi and Suzuki by Ota (1959))

***Trigonioides kodairai* Kobayashi and Suzuki, 1936**

Japan. Jour. Geol. Geogr., vol. 13, p. 249, pl. 27, figs. 1a, b

Holotype: (missing)

Suimondo, Nan-men, Kato-gun, Keisyo-nan-do, Korea

Naktong Series (Naktong Subgroup)

Cretaceous

(*Trigonioides kodairai* Kobayashi and Suzuki by Suzuki (1943))

***Trigonioides kodairai pauciculcatus* Suzuki, 1940**

Japan. Jour. Geol. Geogr., vol. 17, nos. 3-4, p. 229-231, pl. 24, figs. 3a-d

Holotype: UMUT no. MM6388

Hyakuan-do, Hokuan-men, Eisen-gun, Keisyo-hoku-do, Korea

Taikyu Formation, Siragi Series

Cretaceous

(*Trigonioides paucisulcatus* Suzuki, 1940, (emend) by Ota (1959); *Plicatounio naktongensis* Kobayashi and Suzuki by Tamura (1977))

Trigonioides matsumotoi Kobayashi and Suzuki see *Trigonioides kobayashii* Matumoto, 1938

Trigonioides mifunensis Tamura, 1970

Mem. Fac. Educ. Kumamoto Univ., no. 18, Sec. 1, p. 47, pl. 1, figs. 1, 2

Holotype: KE no. 1941

500 m southeast of Tashiro, Kosa-machi, Kamimashiki-gun, Kumamoto Prefecture

Basal Formation, Mifune Group

Turonian-Cenomanian, Cretaceous

(*Trigonioides (Kumamotoa) mifunensis* Tamura by Yang (1974))

Trigonioides (Kumamotoa) mifunensis Tamura see *Trigonioides mifunensis* Tamura, 1970

Trigonioides paucisulcatus Suzuki, 1940 (emend) see *Trigonioides kodairai paucisulcatus* Suzuki, 1940

Trigonioides paucisulcatus suzukii Ota, 1959

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 34, p. 102, pl. 11, fig. 12

Holotype: Gu. K no. ?

Hata, Katsuki-machi, Yahata City (Yahatanishi-ku, Kitakyushu City), Fukuoka Prefecture

Wakino Subgroup, Kwanmon Group

Early Cretaceous

(*Trigonioides (Kumamotoa) paucisulcatus suzukii* Ota by Yang (1974))

Trigonioides (Kumamotoa) paucisulcatus suzukii Ota see *Trigonioides paucisulcatus suzukii* Ota, 1959

Trigonioides (Wakinoa) sengokuensis (Ota) see “*Nippononaia*” *sengokuensis* Ota, 1959

Trigonioides tetoriensis Maeda, 1963

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 51, p. 81, pl. 12, figs. 6, 7

Holotype: R. no. 61121701

A point on the right bank of the Nakanomata River, North of Sugiyama, Kitadani-mura (Katsuyama City), Fukui Prefecture

Kitadani alternation, Akaiwa Subgroup, Tetori Group

Early Cretaceous

(*Wakinoa tetoriensis* (Maeda) by Tamura (1970); *Trigonioides (Kumamotoa) tetoriensis* Maeda by Yang (1974))

Trigonioides (Kumamotoa) tetoriensis Maeda see *Trigonioides tetoriensis* Maeda, 1963

Trigonioides (Wakinoa) wakinoensis (Ota) see “*Nippononaia*” *wakinoensis* Ota, 1959

Trigonioides (Wakinoa) wakinoensis intermedia (Hase) see “*Nippononaia*” *wakinoensis intermedia* Hase, 1960

Unio (Nodularia) biwae Kobelt reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture

Unio (Nodularia) douglasiae (Griffith and Pidgeon) reported by Research Group for Natural History of Lake Biwa (1986) from the middle Pleistocene Katata Formation, Kobiwako Group, Shiga Prefecture; *Unio douglasiae nipponensis* v. *Martens* reported by Fossil Mollusc Research Group for Nojiri-ko Excavation (1987) from the late Pleistocene Nojiri-ko Formation, Nagano Prefecture; *Lymnium douglasiae nipponensis* (v. *Martens*) reported by Kameyama (1968) from the Pleistocene Kotozaki Formation, Yamaguchi Prefecture; *Unio douglasiae nipponensis* v. *Martens* reported by Nakamura *et al.* (1936) from the middle Pleistocene Otokun Formation, Osaka Group, Kyoto

Unio douglasiae nipponensis v. *Martens* see *Unio (Nodularia) douglasiae* (Griffith and Pidgeon)

Unio kobayasiensis Otuka, 1934

Bull. Earthquake Res. Inst., Tokyo Imp. Univ., vol. 12, pt. 3, p. 611, pl. 47, fig. 24

Holotype: (missing)

Exposure along the River Mabeti-gawa, Fukuoka-cho, Ninohe-gun (Ninohe City), Iwate Prefecture (Yotsuyaku Formation)

Miocene

(*Inversidens kobayasiensis* (Otuka) by Suzuki (1944))

“*Unio*” *cf. menkei* Dunker reported by Kobayashi and Suzuki (1936) from the Cretaceous Rakuto Bed (Naktong Subgroup), Korea

Unio moraiensis Suzuki, 1941

Japan Jour. Geol. Geogr., vol. 18, nos. 1-2, p. 55-56, pl. 4, figs. 2-5

Holotype: UMUT no. CM15246

Oil well no. 2, Syunbetu, Ishikari-mati (Ishikari City), Atuta-gun, Hokkaido

Morai “hard shale” Formation (?)

Pliocene

Unio ogamigoensis Kobayashi and Suzuki, 1937

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 41, pl. 4, fig. 16

Holotype: ?

Ogami-go, Shokawa-mura, Ono-gun, Province Hida (Gifu)

Prefecture)
 (Okurouchi Formation), Tetori Group
 Jurassic

***Unio (Nippononaia) ryosekiana* Suzuki, 1941**

Jour. Geol. Soc. Japan, vol. 48, no. 575, p. 411-412, text-figs. 1-3

Holotype: UMUT no. MM7000

Komo, Hanoura-machi, Naka-gun, Tokushima Prefecture, or Santyu graben, Kwanto mountainland

(Hayami and Ichikawa (1965) found *Nippononaia ryosekiana* (Suzuki) from the Aptian-Albian (Cretaceous) Sebayashi Formation, Gunma Prefecture)

Ryoseki Group, Monobegawa Series

Early Cretaceous

(*Nippononaia ryosekiana* (Suzuki) by Hayama and Ichikawa (1965))

***Unio thailandica* Hayami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 101, pl. 19, figs. 10a-d

Holotype: UMUT no. MM3895

Wat Raeri, Amphoe Khonsan, Changwat Chaiyapum, Thailand

Phu Kadung Formation, Khorat Group

Jurassic

***Unio uryuensis* Suzuki, 1941**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sect. 2, vol. 6, pt. 2, p. 25, pl. 1, figs. 11a-c

Holotype: UMUT no. ?

The Tomi-zawa, a branch of the Nasu-zawa which is a tributary of the Urasima-gawa river, (Numata-cho, Uryu-gun, Hokkaido)

The Upper Tachibetsu Formation, (Uryu Group)

Oligocene (Eocene)

(*Unio uryuensis* Suzuki by Suzuki (1942); *Unio aff. uryuensis* Suzuki by Kanno (1954))

***Wakinoa tamurai* Yang, 1976**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 102, p. 324, (Mem. Fac. Educ. Kumamoto Univ., no. 8, Sec.1, pl. 2, fig. 1, Tamura, 1970)

Holotype: KE no. ?

A point on the right bank of the Nakanomata River, North of Sugiyama, Kitadani-mura (Katsuyama City), Fukui Prefecture

Akaiwa Subgroup, Tetori Group

Early Cretaceous

Conchostraca

Shigeyuki Suzuki¹ and Pei-Ji Chen²

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Academia Sinica, Nanjing 210008, P. R. China

Asmussia symmetrica Kobayashi, 1975

Geol. Palaeont. Southeast Asia, vol. 16, p. 82, pl. 7, figs. 1-2.

Holotype: UMUT, not numbered.

Nam Phrom Dam, NW Khret Plateau, Thailand

Upper Nam Pha Formation, Khorat Group

Norian, Triassic

Cyclestherioides bunopasi Kobayashi, 1975

Geol. Palaeont. Southeast Asia, vol. 16, p. 81-82, pl. 7, fig. 4.

Holotype: UMUT, not numbered.

Nam Phrom Dam, NW Khret Plateau, Thailand

Upper Nam Pha Formation, Khorat Group

Norian, Triassic

Estheria kawasaki Ozawa and Watanabe, 1923

Japan Jour. Geol. Geogr., vol. 2, p. 41-42, pl. 5, figs. 3b-4b.

Holotype: UMUT, not numbered.

Koyangni, Tonjin, Kyonguito, Korea

Shale bed below the anthracite-bearing beds of the upper-most
Tonjin Series.

Rhaeto-Liassic

(*Euestheria kawasaki* (Ozawa and Watanabe) by Zhang *et al.*
(1976))

Estheria koreana Ozawa and Watanabe, 1923

Japan Jour. Geol. Geogr., vol. 2, p. 41, pl. 5, figs. 3a-4a.

Holotype: UMUT, not numbered.

Koyangni, Tonjin, Kyonguito, Korea

Shale bed below the anthracite-bearing beds of the upper-most
Tonjin Series.

Rhaeto-Liassic

(*Estherites koreana* (Ozawa and Watanabe) by Kobayashi
(1951))

Estheriina koreanica Ozaki, 1970

Sci. Rep. Yokohama Nat. Univ. Ser. 2, No. 16, p. 76, pl. 12, fig.
3, textfig. 2.

Holotype: GIYU, not numbered.

Jangseong Coal Mine, Janseong-ri, Samchuk, Kanbweon-do,
South Korea (37° 6.5' N, 129° 1.5' E)

D bed of the Sadong Series

Permian

Estherites asanoi Kobayashi and Kido, 1953

Japan Jour. Geol. Geogr., vol. 23, p. 31-32, pl. 2, figs. 4-5.

Holotype: UMUT, no. 161, Paratype: UMUT, no. 152.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *asanoi* (Kobayashi and Kido) by Zhang *et al.*
(1976))

Estherites atsuensis Kobayashi, 1952

Trans. Proc. Palaeont. Soc. Japan N.S., No. 6, p. 175-177, pl. 16,
fig. 1.

Holotype: UMUT, no. 1, Paratype: UMUT, no. 2 (fig. 2)

Hamada of Tsubuta in Habu Town, Asa-gun, Yamaguchi
Prefecture, Japan (34° 1' N, 131° 7' E)

Tsubuta Formation, Mine Group

Ladino-Carnic or early Carnic, Triassic

(*Euestheria* (?) *atsuensis* (Kobayashi) by Zhang *et al.* (1976))

Estherites cycloides Kobayashi, 1951

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 7, p. 434, pl. 1, figs.
1-2.

Holotype: UMUT, not numbered.

Kakurori near Pyongyang, North Korea

Kurori beds, Daido Series

Lower Mesozoic

Estherites endoi Kobayashi and Kido, 1947

Japan Jour. Geol. Geogr., vol. 20, p. 95, pl. 19, fig. 8.

Holotype: UMUT, not numbered.

Latzukou, Wangchinhshien, Chi-lin, NE China

The basal part of the Talatzu Series

Lower Cretaceous

(*Yanjiestheria* (?) *endoi* (Kobayashi and Kido) by Zhang *et al.*
(1976))

Estherites halobiformis Kobayashi and Kido, 1953

Japan Jour. Geol. Geogr., vol. 23, p. 30-31, pl. 1, fig. 21, text-fig.
3.

Holotype: UMUT, no. 163, Paratype: UMUT, no. 241.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *halobiformis* (Kobayashi and Kido) by
Zhang *et al.* (1976))

Estherites kantoensis Kobayashi and Kido, 1947

Japan Jour. Geol. Geogr., vol. 20, p. 94-95, pl. 19, fig. 11.

Holotype: UMUT, not numbered.

Latzukou, Wangchinhshien, Chi-lin, NE China

The basal part of the Talatzu Series

Lower Cretaceous

(*Yanjiestheria kantoensis* (Kobayashi and Kido) by Zhang *et al.*
(1976))

***Estherites khinganensis* Kobayashi, 1951**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 7, p. 435-436, pl. 1, fig. 3.

Holotype: UMUT, not numbered.

Heitingshan on the eastern slope of the central part of the Great Khingan range, Chilin, NE China

Gray mudstone of Heitingshan

Jurassic

(*Eoestheria khinganensis* (Kobayashi) by Zhang *et al.* (1976))

***Estherites kyöngsangensis* Kobayashi and Kido, 1947**

Japan Jour. Geol. Geogr., vol. 20, p. 86-88, pl. 18, figs. 1, 10.

Holotype: UMUT, no. R2.

Rakusando, Shisen-men, Shikkoku-gun, Keisho-hoku-do, South Korea

The Shikkoku Formation of the Naktong Series

Lower Cretaceous

(*Yanjiaestheria kyongsangensis* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites kyöngsangensis* var. *huzitai* Kobayashi and Kido, 1947**

Japan Jour. Geol. Geogr., vol. 20, p. 88, pl. 18, fig. 6.

Holotype: UMUT, no. S4'.

Kotan-ri, Bunsanmen, Shinshu-gun, Keisho-nan-do, South Korea

The Shikkoku Formation of the Naktong Series

Lower Cretaceous

(*Yanjiaestheria huzitai* (Kobayashi and Kido) by Chen and Shen (1982))

***Estherites kyöngsangensis* var. *medialis* Kobayashi and Kido, 1947**

Japan Jour. Geol. Geogr., vol. 20, p. 88-89, pl. 19, figs. 1-3.

Syntype: UMUT, no. D1, no. D4, no. S7.

Railway cliff at Sanki, near Akari, Seimen, Keishu-gun, Keisho-nan-do, South Korea

The Kansanri Formation of the Shiragi Series

Lower Cretaceous

***Estherites kyöngsangensis* var. *paucilineata* Kobayashi and Kido, 1947**

Japan Jour. Geol. Geogr., vol. 20, p. 89-90, pl. 19, figs. 4-6.

Syntype: UMUT, no. A2, no. A3, no. A8.

Railway cliff at Sanki, near Akari, Seimen, Keishu-gun, Keisho-nan-do, South Korea

The Kansanri Formation of the Shiragi Series

Lower Cretaceous

(*Yanjiaestheria* (?) aff. *paucilineata* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites middendorffii* var. *chii* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 20-21, pl. 1, fig. 10.

Holotype: UMUT, no. 122, Paratype: UMUT, no. 18 (pl. 1, fig. 11).

Tapingkou in the Beipiao coal-field, Liaoning, NE China (41° 40~50' N, 120° 30~45' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Eoestheria chii* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* var. *elongata* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 19-20, pl. 1, fig. 5.

Holotype: UMUT, no. 96, Paratype: UMUT, no. 32 (pl. 1, fig. 6, pl. 2, fig. 17).

Fangshen, 20km E of Chaoyang, Liaoning, NE China (41° 33' N, 120° 40' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Eoestheria elongata* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* forma *intermedia* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 22, pl. 1, figs. 16-17.

Syntype: UMUT, no. 82, no. 33.

Fangshen, 20km E of Chaoyang, Liaoning, NE China (41° 33' N, 120° 40' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Eoestheria intermedia* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* var. *jeholensis* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 17-19, pl. 1, figs. 2-4, pl. 2, figs. 15-16.

Syntype: UMUT, no. 228, no. 229, no. 262, no. 265, no. 266.

Shangyuang, on the railway line between Chinsi and Kupeikou, Liaoning, NE China (41° 36.1' N, 120° 59.3' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Diastheria jeholensis* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* forma *peipiaoensis* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 21-22, pl. 1, fig. 15.

Holotype: UMUT, no. 121.

Tapingkou in the Beipiao coal-field, Liaoning, NE China (41° 40~50' N, 120° 30~45' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Eoestheria peipiaoensis* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* forma *subelongata* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 20, pl. 1, fig. 9, pl. 2, fig. 18.

Holotype: UMUT, no. 45.

Shangyuang, on the railway line between Chinsi and Kupeikou, Liaoning, NE China (41° 36.1' N, 120° 59.3' E)

Jehol Group (Yixian Formation)

Upper Jurassic

(*Eosestheria subelongata* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites middendorffii* forma *takechenensis* Kobayashi and Kusumi, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 22-23, pl. 1, fig. 21.

Holotype: UMUT, no. 14.

Takechen, W of Fengning, Hopeh, NE China

Jehol Group (Take Formation)

Upper Jurassic

(*Eosestheria takechenensis* (Kobayashi and Kusumi) by Zhang *et al.* (1976))

***Estherites mitsuishii* Kobayashi and Huzita, 1942**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 6, p. 108-118, pl. 2, fig. 2.

Lectotype: UMUT, Kobayashi and Huzita, 1942, pl. 2, fig. 2

Fulungchuan, Chilin, NE China

Sungari Series

Upper Cretaceous

(*Estherites* (*Estherites*) *mitsuishii* Kobayashi and Huzita by Chang and Chen (1964))

***Estherites nakazawai* Kobayashi, 1952**

Trans. Proc. Palaeont. Soc. Japan N.S., No. 6, p. 177-178, pl. 16, fig. 8.

Holotype: UMUT, no. 7

Hamada of Tsubuta in Habu Town, Asa-gun, Yamaguchi Prefecture, Japan (34° 1' N, 131° 7' E)

Tsubuta Formation, Mine Group

Ladino-Carnic or early Carnic, Triassic

***Estherites naktongensis* Kobayashi and Kido, 1947**

Japan Jour. Geol. Geogr., vol. 20, p. 90, pl. 18, fig. 7.

Holotype: UMUT, no. S8.

Rakusando, Shisen-men, Shikkoku-gun, Keisho-hoku-do, South Korea

The Shikkoku Formation of the Naktong Series

Lower Cretaceous

***Estherites nenkiagensis* var. *kutsangkouensis* Kobayashi and Kido, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 33, pl. 2, fig. 9.

Holotype: UMUT, no. 173, Paratype: UMUT, no. 235.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *kutsangkouensis* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites proamurensis* Kobayashi and Kido, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 32, pl. 2, fig. 6.

Holotype: UMUT, no. 166, Paratype: UMUT, no. 159.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *proamurensis* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites proamurensis* var. *lata* Kobayashi and Kido, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 32-33, pl. 2, fig. 8.

Holotype: UMUT, no. 205, Paratype: UMUT, no. 202.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *proamurensis lata* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites rampoensis* Kobayashi, 1951**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, Vol. 7, p. 435, pl. 1, fig. 13.

Holotype: UMUT, not numbered, Paratype: UMUT, not numbered. (fig. 12c)

Kinkoan, Rampo area, South Korea

Gabisan Formation, Daido Series

Lower Mesozoic

(*Euestheria* aff. *rampoensis* (Kobayashi) by Zhang *et al.* (1976))

***Estherites saitoi* Kobayashi and Kido, 1953**

Japan Jour. Geol. Geogr., vol. 23, p. 29-30, pl. 2, fig. 3.

Holotype: UMUT, no. 203, Paratype: UMUT, no. 149.

Kutsangkou, Fusung, Chi-lin, NE China

The top bed of lower Mesozoic formation

Lower Cretaceous

(*Yanjiestheria* (?) *saitoi* (Kobayashi and Kido) by Zhang *et al.* (1976))

***Estherites septentrionalis* Kobayashi and Huzita, 1942**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 6, p. 118-120, pl. 2, fig. 6.

Lectotype: UMUT, Kobayashi & Huzita, 1942, pl. 2, fig. 6

Taochiao, N of Peian, NE China

Sungari Series

Upper Cretaceous

(*Estherites* (*Euestherites*) *septentrionalis* Kobayashi and Huzita by Chang and Chen (1964))

***Estherites shimamurai* Kobayashi, 1951**

Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 7, p. 437-438, pl. 1, figs.

- 6, 14.
Holotype: UMUT, not numbered, Paratype: UMUT, not numbered. (figs. 7, 8)
Shindo, Kenjiho area, North Korea
Chudo Formation, Daido Series
Upper Triassic
(*Euestheria shimamurai* (Kobayashi) by Zhang *et al.* (1976))
- Estherites tanii* Kobayashi, 1951**
Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 7, p. 437, pl. 1, figs. 11, 15.
Holotype: UMUT, not numbered, Paratype: UMUT, not numbered. (fig. 5)
Kakurori near Pyongyang, North Korea
Kurori beds, Daido Series
Lower Mesozoic
- Estherites tatientzuensis* Tani, 1943**
Jour. Geol. Soc. Japan, vol. 50, no. 500, p. 305-307, Fig. 1b.
Holotype: UMUT, not numbered, Paratype: UMUT, not numbered. (Fig. 1a)
In the vicinity of Tatientzu, about 30km SE of Tiehling in the Province of Fengtien, Liaoning, NE China
Sungari Series
Mesozoic
("*Estherites* " *tatientzuensis* Tani by Zhang *et al.* (1976))
- Estherites tunghuensis* Kobayashi and Kido, 1953**
Japan Jour. Geol. Geogr., vol. 23, p. 28-29, pl. 2, fig. 1.
Holotype: UMUT, no. 117, Paratype: UMUT, no. 156.
Kutsangkou, Fusung, Chi-lin, NE China
The top bed of lower Mesozoic formation
Lower Cretaceous
(*Yanjiestheria* (?) *tunghuensis* (Kobayashi and Kido) by Zhang *et al.* (1976))
- Euestheria buravasi* Kobayashi, 1975**
Geol. Palaeont. Southeast Asia, vol. 16, p. 80-81, pl. 7, figs. 8-9.
Holotype: UMUT, not numbered.
Nam Phrom Dam, NW Khret Plateau, Thailand
Upper Nam Pha Formation, Khorat Group
Norian, Triassic
- Euestheria imamurai* Kusumi, 1960**
Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, no. 1, p. 20-22, pl.4, fig. 4.
Holotype: TNM, no. 30, Paratypes: TNM, no. 32 (figs. 5, 11).
An exposure along road side, 1.7km S of Minamikokura station of the Nippou Line, Kumagai, Kokura-kita-ku, Kitakyushu City, northern Kyushu, Japan (33° 51.0' N, 130° 52.0' E)
Upper Wakamiya Formation (W4) of the Wakino Sub-group, Kwanmon Group.
Lower Cretaceous
(*Orthestheriopsis imamurai* (Kusumi) by Chen (1996))
- Euestheria kokurensis* Kusumi, 1960**
Jour. Sci. Hiroshima Univ., Ser. C, vol. 3, no. 1, p. 17-20, pl.4, fig.1.
Holotype: TNM, no. 1, Paratypes: TNM, no. 91 (pl.4, fig. 2).
An exposure along road side, 1.7km S of Minamikokura station of the Nippou Line, Kumagai, Kokura-kita-ku, Kitakyushu City, northern Kyushu, Japan (33° 51.0' N, 130° 52.0' E)
Upper Wakamiya Formation (W4) of the Wakino Sub-group, Kwanmon Group.
Lower Cretaceous
(*Orthestheria kokuraensis* (Kusumi) by Chen (1996))
- Euestheria mansuyi* Kobayashi, 1954**
Jour. Fac. Sci. Univ. Tokyo, Sec. 2, vol. 9, no. 6, p.60-65, text-fig. 16-1.
Holotype: UMUT, not numbered.
Nam Phrom Dam, NW Khret Plateau, Thailand
Upper Nam Pha Formation, Khorat Group
Norian, Triassic
- Euestheria thailandica* Kobayashi, 1975**
Geol. Palaeont. Southeast Asia, vol. 16, p. 80, pl. 7, figs. 6.
Holotype: UMUT, not numbered.
Nam Phrom Dam, NW Khret Plateau, Thailand
Upper Nam Pha Formation, Khorat Group
Norian, Triassic
- Khoratestheria macroumbo* Kobayashi, 1975**
Geol. Palaeont. Southeast Asia, vol. 16, p. 81, pl. 7, fig. 5.
Holotype: UMUT, not numbered.
Nam Phrom Dam, NW Khret Plateau, Thailand
Upper Nam Pha Formation, Khorat Group
Norian, Triassic
- Koreolimnadiopsis tokioi* Ozaki, 1970**
Sci. Rep. Yokohama Nat. Univ. Ser. 2, No. 16, p. 76-77, pl. 12, figs. 1, 2, textfig. 3.
Holotype: GIYU, not numbered.
Jangseong Coal Mine, Janseong-ri, Samchuk, Kanbweon-do, South Korea (37° 6.5' N, 129° 1.5' E)
D bed of the Sadong Series
Permian
- Nemestheria aidaensis* Chen & Suzuki, 1998**
Paleontological Research, vol. 2, no. 1, p. 25, 28, figs. 3(1-3), 4(1-5).
Holotype: the Nanjing Institute of Geology and Palaeontology, no. 128939*
An exposure along road side, about 0.7km SW of Nakaiso, western Aida Town, Aida-gun, Okayama Prefecture, Japan (34° 54.5' N, 134° 8.4' E)
Kagami Member of the Tsurukame Upper Formation, Aioi Group
Cenomanian, Upper Cretaceous

***Neodiestheria yamajiensis* Chen, 1996**

Bull. Kitakyushu Mus. Nat. Hist., vol. 15, p. 7-8, pl. 2, figs. 3, 5-6.

Holotype: KMNH, no. IvP 500,013*, Paratypes: KMNH, no. IvP 500,014*-500,017* (figs. 4, 7: same locality).

An exposure at southern end of Yamaji village, just 6.1km S of Ibara City Office, Ibara City, Cyugoku, Japan (34° 32.3' N, 133° 27.9' E)

Inakura Formation

Lower Cretaceous

***Orthestheriopsis wakinoica* Chen, 1996**

Bull. Kitakyushu Mus. Nat. Hist., vol. 15, p. 11, pl. 3, figs. 6-7.

Holotype: KMNH, no. IvP 500,024*, Paratypes: KMNH, no. IvP 500,025*-500,043* (pl. 3, figs. 8-9, pl. 4, figs. 1-6: same locality).

An exposure along road side, 1.7km S of Minamikokura station of the Nippou Line, Kumagai, Kokura-kita-ku, Kitakyushu City, northern Kyushu, Japan (33° 51.0' N, 130° 52.0' E)

Upper Wakamiya Formation (W4) of the Wakino Sub-group, Kwanmon Group.

Lower Cretaceous

***Pseudestheriella kangwondoensis* Ozaki, 1970**

Sci. Rep. Yokohama Nat. Univ. Ser. 2, No. 16, p. 77-78, pl. 12, figs. 4, textfig. 4.

Holotype: GIYU, not numbered.

Jangseong Coal Mine, Janseong-ri, Samchuk, Kanbweon-do, South Korea (37° 6.5' N, 129° 1.5' E)

D bed of the Sadong Series

Permian

Barnacles

Toshiyuki Yamaguchi

Chiba University, Chiba 263-8522, Japan

Balanus amaraquaticus Yamaguchi 1980

Jour. Paleont., vol. 54, no. 5, p. 1084-1101, pl. 1, figs. 1a-20b, pl. 2, figs. 1a-22b, pl. 3, figs. 1a-24b

Holotype: UMUT CA9950

Paratypes: UMUT CA9951-9969

A cliff (35°20'22.7"N, 139°30'41.0"E) building to prepare a housing site behind the Chofuku-ji Temple, situated about 2.05 km N70°E of Fujisawa Station, Muraoka-Higashi 3-29, Fujisawa City, Kanagawa Prefecture

Naganuma Formation

Pleistocene

Balanus sendaicus Hatai, Masuda and Noda 1976

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 125, pp. 277-295, pls. 44-48, figs. 1-2, tabs. 1-2

Holotype: SHM 22083 (missing)

An outcrop situated about 200 m south of the Oide Bridge across the Natori River, near Moniwa, Sendai City, Miyagi Prefecture

Moniwa Formation

Early Middle Miocene

Chionelasmus darwini cantelli Yamaguchi 1998

Species Diversity, vol. 3, no. 1, p. 117-131, fig. 6

Holotype: Natural History Museum, London, reg. no. 1928.5.23.84

A telegraph cable in the western Indian Ocean at 526 m, 15.3 km north and 64.4 km west of Port Mathurin, Rodrigues Island

Living

Eochionelasmus ohtai Yamaguchi 1990

Pacific Science, vol. 44, no. 2, p. 135-155

Holotype: UMUT RA-18631

Paratypes: UMUT RA-18632, RA-18633, RA-18634

An abyssal hydrothermal field at 1,990 m in the North Fiji Basin, the West Pacific (16°59.4'S., 173°54.9'E.) by the Japan-France KAIYO 87 Cruise (Site B of Station 4)

Living

Eochionelasmus ohtai manusensis Yamaguchi and Newman 1997

Zoosystema, vol. 19, no. 4, p. 623-649

Holotype: NSMT-Cr11954

Paratypes: NSMT-Cr11953, 11955

3°10' S., 150°17'E., about 2500 m in depth, Manus Back-Arc Basin

Living

Eochionelasmus paquensis Yamaguchi and Newman 1997

Jour. Crustacean Biol., vol. 17, no. 3, pp. 488-496

Paratype: NSMT-Cr11433

Rehu site (17°24.85'S, 113°12.15'W, 2378 m) on the East Pacific Rise (EPR) off Easter Island, in the eastern Pacific

Living

Imbricaveruca yamaguchi Newman 2000

Zoosystema, vol. 22, no. 1, p. 71-84, Fig. 1A, Figs. 2-6, tabs. 1-3

Holotype: MNHN-Ci2710

Paratype: MNHN-Ci2711

Station 1 (Hine Hina, 22°32'S, 176°43'W, at 1900m depth), BIOLAU Cruise of 1989 to the Lau Basin, Tonga, West Pacific

Living

Neobrachylepas relicha Newman and Yamaguchi 1995

Bulletin du Museum national d'histoire naturelle, Paris, 4^e ser., vol. 17, p. 221-243

Paratype: NSMT Cr-14111

Station Hine Hina (station without smokers), 22°32'S, 176°43'W, 1832-1887 m

Living

Decapoda, Isopoda and Stomatopoda

Hiroaki Karasawa¹ and Hisayoshi Kato²

¹ Mizunami Fossil Museum, Mizunami 509-6132, Japan

² Natural History Museum and Institute,
Chiba 260-0852, Japan

Decapoda

Achaeus nomurai Takeda and Fujiyama, 1984

Bull. Natn. Sci. Mus. Ser. C, vol. 10, no. 2, p. 50, fig. 1

Holotype: NSM no. 12235*

Suganuma, Kawamoto-cho, Osato-gun, Saitama Prefecture

Tsuchishio Formation, Matsuyama Group

Middle Miocene

Anatolikos itoigawai (Karasawa) see *Cancer (Glebocarcinus) itoigawai* Karasawa

Anisospinos odosensis (Imaizumi) see *Cancer odosensis* Imaizumi

Archaeopus ezoensis (Nagao) see *Plagiolophus ezoensis* Nagao

Asthenognathus globosa (Karasawa) see *Tritodynamia globosa* Karasawa

Arges parallelus De Haan, 1835

Fauna Japonica, Crustacea, p. 52, pl. 5, fig. 4

Holotype: Nationaal Natuurhistorisch Museum, lost ?

Japan

Unknown

Unknown (Holocene see Kaneko (1958), Jub. Publ. Commen.

Prof. H. Fujimoto, p. 333)

Actumnus guinotae Karasawa and Inoue, 1992

Tertiary Res., vol. 14, no. 2, p. 84, pl. 2, figs. 2, 4a-c, 12

Holotype: MFM no. 83017* (pl. 2, fig. 12); Paratype: MFM no.

83018* (pl. 2, fig. 2), no. 83019* (pl. 2, figs. 4a-c) (same locality)

Loc. KO-5, Cliff, northwest of Osaki launching pad, Kakinaga, Minamitane-cho, Kagoshima Prefecture (30° 24'50"N, 130° 57'46"E)

Hirota alternation Member of the Osaki Formation, Kakinaga Group

Middle middle Miocene

Branchioplax pentagonalis (Yokoyama) see *Xanthilites pentagonalis* Yokoyama

Callianassa bona Imaizumi, 1959

Jap. Jour. Geol. Geogr., vol. 30, p. 31, pl. 4, figs. 1-8

Syntype: PS no. 74306*

IGPS loc. no. Mi-93, Northeastern shore of Goishi river, east of Goishi, south of Kawakubo, Tomioka-mura, Shibata-gun,

Miyagi Prefecture (38° 11'45"N, 140° 43'33"E) (Northern bank of the river cliff of the Goishigawa River, Goishi, Kawasaki-cho,

Shibata-gun, Miyagi Prefecture)

Moniwa and Hatatate Formations

Miocene (Early middle Miocene)

Callianassa elongatodigitata Nagao, 1941

Jour. Fac. Sci., Hokkaido Imp. Univ., Ser. 4, vol. 6, no. 2, p. 89,

pl. 26, figs. 12-20

Lectotype: GH no. 4601* (pl. 26, fig. 16)

Okumuri, Onbetsu-mura, Shiranuka-gun, province of Kushiro

Shitakara beds (Poronai Formation)

Lower Neogene (Late Eocene)

(The lectotype was designated by Hanzawa et al. (1961). The

present species was synonymous with *Callianopsis muratai*

(Nagao) by Kato (2000))

Callianassa ezoensis Nagao, 1932

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 2, no. 1, p. 20,

pl. 4, figs. 1, 2, 4-8, 15

Holotype: GH no. 4602* (pl. 4, fig. 2)

Nakahobets along the Hobetsu-gawa, Hobetsumura, Yûfutu-gun,

province of Iburi (West of Kiusu-bashi, Nakahobetsu,

Hobetsu-cho, Yufutsu-gun, Hokkaido)

Hakobuchi Sandstone (Hakobuchi Group)

Upper Senonian (Campanian-Maastrichtian); late Cretaceous

Callianassa inornata Nagao and Huzioka, 1938

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 4, nos. 1-2, p.

63, pl. 4, figs. 1-5

Holotype: GH no. 7807d* (pl. 4, figs. 4, 4a); Paratype: GH no.

7807a*, b*, c*, e*, f* (pl. 4, figs. 1, 2, 3, 5) (same locality)

Momiziyama, Yûbari-gun, province of Ishikari (Takenosawa

River, Tomisato, Yubari City, Hokkaido)

Lower Kawabata series (Takinoue Formation); basal conglomerate

Probably Miocene (Early Miocene)

Callianassa ishikariensis Nagao and Ôtatsume, 1938

Jour. Geol. Soc. Japan, vol. 45, no. 540, p. 101, figs. 1-3

Holotype and Paratype: missing

Akama-Akabira district, Sorati-gun, province of Isikari (Akabi City, Hokkaido)

Wakkanabe bed of the Isikari series (Wakkanabe Formation, Ishikari Group)

Palaeogene (Middle Eocene)

***Callianassa kushiroensis* Nagao, 1941**

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 6, no. 2, p. 92, pl. 26, fig. 21

Holotype: GH no. 31693*

Koikata-horokatyaro, a small tributary of the Tyaro-gawa, Shiranuka-gun, province of Kusiro.

Shitakara beds (Poronai series) (Charo Formation, Onbetstu Group)

Lower Neogene (Late Eocene)

(The present species was synonymous with *Callianopsis muratai* (Nagao) by Kato (2000))

***"Callianassa" (s.l.) masanorii* Karasawa, 1998**

Paleont. Res., vol. 2, no. 4, p. 220, figs. 3.1a-7

Holotype: HMNA no. D1-000495* (figs. 3.5, 6); Paratype:

HMNA no. D1-000506* (fig. 3.3), no. D1-000507* (fig. 3.2),

MFM no. 247007* (figs. 3.1a, b), no. 247008* (fig. 3.4),

247009* (fig. 3.7) (same locality)

Mitsukawa, Sumoto City, Hyogo Prefecture

Kita-ama Formation, Izumi Group

Maastrichtian, late Cretaceous

***Callianassa muratai* Nagao, 1932**

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 2, no. 1, p. 17, pl. 4, figs. 9-13

Holotype: GH no. 31701* (pl. 4, fig. 11)

Along the Yubarigawa River, Momijiyama, Yubari City, Hokkaido

Poronai series (Poronai Formation)

Lower Neogene (Late Eocene)

***Callianassa nishikawai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 32, pl. 3, figs. 4a-9

Holotype: MFM no. 39007* (pl. 3, fig. 7); Paratype: MFM no.

39008* (pl. 3, figs. 4a-c), no. 39009* (pl. 3, figs. 6a, b), no.

39010* (pl. 3, fig. 8), no. 39011* (pl. 3, fig. 9), no. 39012* (pl.

3, fig. 5) (same locality)

Okuda, Masuda City, Shimane Prefecture (34°43'00"N, 131°49'45"E)

Toyoda Formation, Masuda Group

Early middle Miocene

***Callianassa (s. l.) sakakuraorum* Karasawa, 2000**

Paleont. Res., vol. 4, no. 4, p. 236, figs. 1.3-5

Holotype: MFM no. 247015* (figs. 1.4, 5); Paratype: MFM no.

247016* (fig. 1.3)

Suhara, Yuasa-cho, Wakayama Prefecture

Arida Formation

Barremian, early Cretaceous

***Callianassa shikamai* Imaizumi, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 27, p. 81, pl. 14, figs. 1-5

Paratype: PS no. 79486*

IGPS loc. no. No-6, Higashi-zawa, southwest of Furushiro, Tomikusa-mura, Shimoina-gun, Nagano Prefecture (35°21'19"N, 137°47'32"E) (Anan-cho, Shimoina-gun, Nagano Prefecture)

Arakida Formation, Tomikusa Group

Middle Miocene (Early Miocene)

(Imaizumi (1957) did not designate the holotype. Subsequently, Hanzawa et al. (1961) designated "syntypes". This species is synonymous with *Callianassa titaensis* Nagao by Karasawa (1989))

***Callianassa tanakai* Imaizumi, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 27, p. 83, pl. 14, figs. 6-9, text-figs. 1-2

Syntype: PS no. 79487*

IGPS loc. no. Nn-7, Nishinomiya, Gojo, Siga-mura, Higashichikuma-gun, Nagano Prefecture (36°20'54"N, 137°58'9"E)

Lowermost Ogawa Formation

Middle Miocene

(Imaizumi (1957) did not designate the holotype. Subsequently, Hanzawa et al. (1961) designated "syntype")

***Callianassa titaensis* Nagao, 1941**

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 6, no. 2, p. 93, pl. 26, figs. 3-7

Syntype: GH no. 47299* (pl. 26, figs. 4-7), 37086* (not illustrated), 22194* (pl. 26, fig. 3) (UHR nos. ?)

No. 47299: Kosa, Toyohama-mura, Tita-gun, Aiti Prefecture (Oza, Minamichita-cho, Chita-gun, Aichi Prefecture); no. 37086: the southern part of Tita Peninsula (Minamichita-cho, Aichi Prefecture); no. 22194: Tomita, Hongo-mura, Ena-gun, Gifu Prefecture (Tomita, Iwamura-cho, Ena-gun, Gifu Prefecture)

Nos. 47299, 37086: Morosaki bed (Toyohama Formation, Morozaki Group; no. 22194: Iwamura Group (Toyama Formation, Mizunami Group)

Miocene (Early Miocene)

***Callianassa yagii* Imaizumi, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 27, p. 84, pl. 14, figs. 10-15, text-figs. 3-8

Holotype: PS no. 79488*

IGPS loc. no. Nn-8, Nigorizawa, near Konabe-tanaka, Otagiri, Nagano City, Nagano Prefecture (36°39'19"N, 138°7'25"E)

Ronji Mudstone Member, Ogawa Formation.

Latest Miocene.

***Callianassa yatsuoensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 33, pl. 3, figs. 2, 3

Holotype: MFM no. 83055* (pl. 3, fig. 2); Paratype: MFM no. 83056* (pl. 3, fig. 3) (same locality)

Loc. YTO-2, Dry river bed of Iguridani, Yatsuo-cho, Nei-gun, Toyama Prefecture (36°34'00"N, 137°E)

Kurosedani Formation, Yatsuo Group

Middle Miocene

Callianopsis elongatodigitata (Nagao) see *Callianassa elongatodigitata* Nagao

Callianopsis muratai (Nagao) see *Callianassa muratai* Nagao

Callianopsis titaensis (Nagao) see *Callianassa titaensis* Nagao

Calliax okamotoi Karasawa, 1993

Bull. Mizunami Fossil Mus., no. 20, p. 36, pl. 4, figs. 8, 10

Holotype: MFM no. 218509* (pl. 4, fig. 10); Paratype: MFM no. 218510* (pl. 4, fig. 8), no. 218511* (not illustrated) (same locality)

Loc. HOK-1, Nabe-jima, Hosoi, Houhoku-cho, Toyoura-gun, Yamaguchi Prefecture (33° 20'N, 130° 60'10"E)

Taoyama Formation, Hioki Group

Late Oligocene

Calliax bona (Imaizumi) see *Callianassa bona* Imaizumi

Cancer (Cancer) fujinaensis Sakumoto, Karasawa and Takayasu, 1992

Bull. Mizunami Fossil Mus., no. 19, p. 448, pl. 61, figs. 2a-c

Holotype: Shimane University, no. T.3301*

Locality 6, Kagami, Shinji-cho, Yatsuka-gun, Shimane Prefecture (35° 25'12"N, 132° 55'35"E)

Fujina Formation, Izumo Group

Middle Miocene

Cancer ? imamurae Imaizumi, 1962

Sci. Rep. Tohoku Univ., 2nd ser. (Geol.), spec. vol. 5, p. 239, pl. 40, figs. 18, 19

Holotype: PS no. 79495*

IGPS loc. no-Tm-6, Kamishin, Kurosedani-mura, Nei-gun, Toyama Prefecture (36° 34'17"N, 137° 7'15"E) (Kamishin, Yatsuo-cho, Nei-gun, Toyama Prefecture)

Yatsuo Formation (Higashibessho Formation, Yatsuo Group)

Miocene (Early middle Miocene)

Cancer (Glebocarcinus) itoigawai Karasawa, 1990

Bull. Mizunami Fossil Mus., no. 17, p. 7, pl. 1, fig. 10

Holotype: MFM no. 9025*

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

Cancer (Metacarcinus) izumoensis Sakumoto, Karasawa and Takayasu, 1992

Bull. Mizunami Fossil Mus., no. 19, p. 447, pl. 60, figs. 5a-c; pl. 61, fig. 1

Holotype: Shimane University, no. T.3130* (pl. 60, figs. 5a-c); Paratype: no. T.3131* (pl. 61, fig. 1) (same locality)

Locality 9, Ijimi, Shinji-cho, Yatsuka-gun, Shimane Prefecture (35° 23'41"N, 132° 52'58"E)

Fujina Formation, Izumo Group

Middle Miocene

Cancer (Glebocarcinus) kaedei Karasawa, 1990

Bull. Mizunami Fossil Mus., no. 17, p. 9, pl. 1, figs. 4a-c, 7a, b, 13, 14

Holotype: MFM no. 9026* (pl. 1, fig. 13); Paratype: MFM no. 9027* (pl. 1, fig. 14), no. 9028* (pl. 1, figs. 7a, b), no. 9029* (pl. 1, figs. 4a-c) (same locality)

Loc. 54, Matsugase, Matsugase-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

Cancer minutoserratus Nagao, 1940

Jour. Fac. Sci., Hokkaidō Imp. Univ., ser. 4, vol. 6, no. 1, p. 69, pl. 23, figs. 1-10

Syntype: UH no. 3303*, PS no. 51939*

Hyojogawa, Sendai (Right stream side of the Hirosegawa River, Hyojogawara, Aoba-ku, Sendai City, Miyagi Prefecture) (38° 15'N, 140° 52'4"E)

Tatsunokuchi Formation

Upper Pliocene (Early Pliocene)

Cancer odosensis Imaizumi, 1962

Sci. Rep. Tohoku Univ., 2nd ser. (Geol.), spec. vol. 5, p. 239, pl. 40, fig. 15

Holotype: PS no. 79494*

IGPS loc. no. Ao-32, In front of Odoose Station, west of Tanosawa, Odoose-mura, Nishitsugaru-gun, Aomori Prefecture (40° 45'22"N, 140° 2'9"E)

Odoose Formation (Tanosawa Formation)

Miocene (Early middle Miocene)

Cancer sakamotoi Kato, 1996

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 183, p. 510, Figs. 5.5-9

Holotype: PS no. 102807* (fig. 5.7); Paratype: PS no. 102808* (fig. 5.6), no. 102809* (fig. 5.8) (same locality)

Loc. Ng-9, left bank of the Arakawa River, Terao-Hagidaira, Chichibu City, Saitama Prefecture (36° 2'45"N, 139° 5'35"E)

Nagura Formation, Chichibumachi Group

Early middle Miocene

Cancer sanbonsugii Imaizumi, 1962

Sci. Rep. Tohoku Univ., 2nd ser. (Geol.), spec. vol. 5, p. 233, pl. 40, figs. 1-12

Holotype: PS no. 79493* (pl. 40, fig. 1, Text-fig. 1); Paratype: unnumbered paratype no. I-VII (pl. 40, figs. 2-12, Text-figs. 2-7) (same locality)

Right cliff of the left branch of Nametani-zawa River, tributary of the Karasu-gawa River, Odaira, Iizaka-cho, Fukushima City (37° 51'13"N, 140° 17'7"E)
Odaira Formation (Matsukawa Formation)
Miocene (Late early Miocene)

***Cancer (Cancer) tomowoi* Karasawa, 1990**

Bull. Mizunami Fossil Mus., no. 17, p. 11, pl. 1, figs. 2a-d, 3a-d, 8, 16a, b

Holotype: MFM no. 9022* (pl. 1, figs. 8, #16a, b); Paratype: MFM no. 9023* (pl. 1, figs. 2a-d), no. 9024* (pl. 1, figs. 3a-d) (same locality)

Loc. I-2, Higashihora, Yamaoka-cho, Ena-gun, Gifu Prefecture
Higashihora Member of the Toyama Formation, Mizunami Group
Early Miocene

***Carcinoplax antiqua* (Ristori) see *Curtonotus antiquus* Ristori**

***Carcinoplax granulimanus* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 85, pl. 2, figs. 8, 10, 11a-c, 13, 15, 16

Holotype: MFM no. 83007* (pl. 2, figs. 8, 13); Paratype: MFM no. 83008* (pl. 2, figs. 10, 15), no. 83009* (pl. 2, fig. 16), no. 83010* (pl. 2, figs. 11a-c) (same locality)

Loc. KO-2, Road cut, southwest of Osaki launching pad, Kakinaga, Minamitane-cho, Kagoshima Prefecture (30° 23'30"N, 130° 57'34"E)

Hirota alternation Member of the Osaki Formation, Kakinaga Group
Late middle Miocene

***Carcinoplax imperfecta* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 86, pl. 2, fig. 5

Holotype: MFM no. 83020*

Loc. KO-7, Beach, northeast of Hirota, Hirayama, Minamitane-cho, Kagoshima Prefecture (30° 24'25"N, 130° 57'46"E)

Hirota alternation Member of the Osaki Formation, Kakinaga Group
Late middle Miocene

***Carcinoplax prisca* Imaizumi, 1961**

Sci. Rep. Tohoku Univ., 2nd ser. (Geol.), vol. 32, no. 2, p. 171, pl. 13, figs. 12, 13, pl. 16, figs. 1-3, pl. 17, figs. 1, 12-16, pl. 18, figs. 4-14, pl. 19, figs. 1-8, pl. 20, figs. 1-25, pl. 21, figs. 7-9

Syntype?: PS no. 51116*, 79481*

IGPS loc. no. My-3, Haigano, Horiguchi, and Hirano, Tano-machi, Miyazaki-gun, Miyazaki Prefecture (31° 57'50"N, 131° 4'58"E); loc. no. My-4, Kariyabara, Tano-machi, Miyazaki Prefecture (31° 57'1"N, 131° 4'58"E)

Miyazaki Group

Late Miocene

(Imaizumi (1961) did not designate the type specimens)

***Carcinoplax senecta* Imaizumi, 1961**

Sci. Rep. Tohoku Univ., 2nd ser. (Geol.), vol. 32, no. 2, p. 172, pl. 18, figs. 1-3

Holotype: PS no. 79474*

IGPS loc. no. Ig-1, Izura, Ôtsu-machi, Kitaibaragi City, Ibaragi Prefecture (26° 49'51"N, 140° 48'45"E)

Kokozura Sandstone

Miocene (Middle Miocene)

***Carinaranina fudoujii* Karasawa, 2000**

Proc. Biol. Soc. Washington, vol. 113, no. 3, p. 806, figs. 2.1-8b, 3.1, 2

Holotype: MFM no. 83061* (fig. 2.3); Paratype: MFM no. 83062* (fig. 2.4), no. 83063* (figs. 2.5a-c), no. 83064* (fig. 2.7), no. 83065* (figs. 2.8a, b); KMNH IvP no. 300024* (fig. 2.1), no. 300025* (fig. 2.2), no. 300026* (figs. 2.6a, b) (same locality)

Loc. KS-1, a cliff about 1.2 km east of Motogaura, Shikano-cho, Kitamatsuura-gun, Nagasaki Prefecture (33° 16'28"N, 129° 37'03"E)

Kase Formation

Earliest Miocene

***Carinocarcinoides angustifrons* (Karasawa) see *Varuna angustifrons* Karasawa**

***Carinocarcinoides carinatus* Karasawa and Fudouji, 2000**

Paleont. Res., vol. 4, no. 4, p. 247, figs. 5.1a-d, 2, 4

Holotype: MFM no. 218513* (figs. 1a-d); Paratype: MFM no. 218514* (figs. 2, 4) (same locality)

Loc. KSM-9, Wakagi, Takeo City, Saga Prefecture.

Kishima Formation, Kishima Group

Early Oligocene

***Charybdis (Minohellenus) quinquentata* Karasawa, 1990**

Bull. Mizunami Fossil Mus., no. 17, p. 21, pl. 6, figs. 7a, b, 8a, b

Holotype: MFM no. 9030* (pl. 6, figs. 8a, b); Paratype: MFM no. 9031* (pl. 6, figs. 7a, b) (same locality)

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Cicarnus fumiae* Karasawa and Fudouji, 2000**

Paleont. Res., vol. 4, no. 4, p. 244, figs. 4.2a-c

Holotype: MFM no. 218512*

Aze, Iojima-cho, Nagasaki City, Nagasaki Prefecture

Okinoshima Formation, Okinoshima Group

Middle Eocene

***Collinsius simplex* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 73, pl. 21, figs. 3-5, 7, 8

Holotype: MFM no. 218502* (pl. 21, fig. 5); Paratype: no. 218503* (pl. 21, fig. 4), no. 218504* (pl. 21, fig. 3), no. 218505* (pl. 21, fig. 7), no. 218506* (pl. 21, fig. 8)

Loc. KSM-2, Cliff of Hatada, Ohmachi-cho, Kishima-gun, Saga Prefecture (33° 13'N, 129° 35'40"E); Paratype (MFM218503): Loc. KSM-5, Cliff of Tachikawa, Okawa-cho, Imari City, Saga Prefecture (33° 19'00"N, 129° 59'57"E); Paratype (MFM218504): Loc. KSM-2, Cliff of Hatada, Ohmachi-cho, Kishima-gun, Saga Prefecture (33° 13'N, 129° 35'40"E); Paratype (MFM218505 and MFM218506): Loc. KSM-4, Cliff of Umagami, Osaki, Ohmachi-cho, Kishima-gun, Saga Prefecture (33° 13'50"N, 130° 4'17"E) (Magami, Osaki, Kitagata-cho, Kishima-gun, Saga Prefecture)

Kishima Formation, Kishima Group

Early Oligocene

***Ctenocheles sujaku* Imaizumi, 1958**

Trans. Proc. Palaeont. Soc. Japan, N. S. no. 32, p. 391, pl. 44, figs. 2-5

Syntype: PS no. 79567*, 79568*

IGPS loc. no. Sa-002, the boring cores of the well of the Kogayama coal mines, Mitsubishi Mining Company, at the western extremity of Nagao, Minami-Taku-mura, Ogi-gun, Saga Prefecture (22° 17'18"N, 130° 7'E) (Nagao, Taku City, Saga Prefecture)

Kishima Formation, Ashiya Group (Kishima Formation, Kishima Group)

Oligocene (Early Oligocene)

***Curtonotus antiquus* Ristori, 1889**

Atti Soc. Toscana Sci. Nat., vol. 7, p. 7

Holotype: unknown

Japan

Unknown (Miocene?)

Remarks: Glaessner (1933) and Imaizumi (1961) discussed the locality and geologic age of this species.

***Cyclograpsus directus* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 22, pl. 3, fig. 15

Holotype: MFM no. 9021*

Loc. 27, Obora, Kawai, Toki City, Gifu Prefecture

Kujiri Facies of the Akeyo Formation, Mizunami Group

Early Miocene

***Cyclograpsus rectangularis* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 21, pl. 3, figs. 14, 16a-d

Holotype: MFM no. 9019* (pl. 3, fig. 14); Paratype: MFM no. 9020* (pl. 3, figs. 16a-d) (same locality)

Loc. 07, Oginoshima, Kamado-cho, Mizunami City, Gifu Prefecture

Shukunohora Facies of the Akeyo Formation, Mizunami Group

Early middle Miocene

***Daldorfia nagashimai* Karasawa and Kato, 1996**

Proc. Biol. Soc. Washington, vol. 109, no. 1, p. 46, figs. 2-4

Holotype: KMNH IvP no. 300,022* (fig. 2); Paratype: MFM no. 83058* (fig. 3), no. 83059* (fig. 4) (same locality)

MYZ-4, Akatani, Uranona, Takaoka-cho, Higashimorogata-gun, Miyazaki Prefecture (38° 20'22"N, 140° 55'56"E)

Aya Formation, Miyazaki Group

Late Miocene

***Dardanus muelleri* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 81, pl. 1, figs. 4a, b, 5

Holotype: MFM no. 83015* (pl. 1, figs. 4a, b); Paratype: MFM no. 83016* (pl. 1, fig. 5) (same locality)

Loc. KO-5, Cliff, northwest Osaki launching pad, Kakinaga, Minamitane-cho, Kagoshima Prefecture (30° 24'25"N, 130° 57'46"E)

Hirota alternation Member of the Osaki Formation, Kakinaga Group

Late middle Miocene

***Diaulax yokoi* Collins, Kanie and Karasawa, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 172, 295, figs. 2.4, 5a-c

Holotype: MFM no. 247001* (figs. 2.5a-c); Paratype: MCM no. A373* (fig. 2.4)

Locality YEZ-2, Kasekizawa, Nakagawa-cho, Nakagawa-gun, Hokkaidô; Paratype: Locality YEZ-11, Kumaizawa, Ikushunbetsu, Mikasa City, Hokkaido

Nigorizawa Formation, Upper Yezo Group; Paratype: Upper Yezo Group

Santonian, late Cretaceous

***Dynomene shinobui* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 41, pl. 6, figs. 12, 15, 16

Holotype: MFM no. 83033* (pl. 6, fig. 15); Paratype: MFM no. 83034* (pl. 6, fig. 16), MFM no. 83035* (pl. 6, fig. 12) (same locality)

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Ebalia kakegawaensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 75, pl. 22, figs. 6a, b

Holotype: MFM no. 142017*

Loc. KKG-8, Nakamura, Ukari, Kakegawa City, Shizuoka Prefecture (43° 47'35"N, 138° 55'15"E)

Ten-no Sand, Kakegawa Group

Late Pliocene

***Eodorippe binodosa* Collins, Kanie and Karasawa, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 172, p. 303, fig. 2.6

Holotype: MFM no. 247003*

Locality YEZ-10, Katsurazawa, Ikushunbetsu, Mikasa City, Hokkaidô
Mikasa Formation, Middle Yezo Group
Cenomanian, late Cretaceous

***Eomunidopsis kojimai* Karasawa and Hayakawa, 2000**

Paleont. Res., vol. 4, no. 2, p. 144, fig. 4.2
Holotype: MFM no. 247011*
Loc. YEZ-20, Wakkaubenbetsugawa, Nakagawa-cho, Hokkaidô
Nigorikawa Formation, Upper Yezo Group
Santonian, late Cretaceous

***Ethusa chibai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 44, pl. 8, fig. 12
Holotype: MFM no. 142002*
Loc. TMR-1, Kinjo, Kakegawa City, Shizuoka Prefecture (34° 46'20"N, 138° 2'15"E)
Tamari Formation
Early Pliocene

***Eucalliax yatsuoensis* (Karasawa) see *Callianassa yatsuoensis* Karasawa**

***Eucalliax miyazakiensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 35, pl. 4, fig. 12
Holotype: MFM142007 (pl. 4, fig. 12); Paratype: MFM142008
Loc. MYZ-10, Cliff of Shirodaira, Saito City, Miyazaki Prefecture (32° 6'35"N, 131° 25'40"E)
Tsuma Formation, Miyazaki Group
Early Pliocene

***Eucalliax yoshihiro* Karasawa, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 167, p. 1248, figs. 2.2a-6, 3.1-4
Holotype: KMNH IvP no. 300,001* (fig. 2.5); Paratype: KMNH IvP no. 300,002* (figs. 2.2a, b), 300,003* (fig. 2.3), no. 300,004* (fig. 2.4), no. 300,005* (fig. 2.6), no. 300,006* (fig. 3.1), no. 300,007* (fig. 3.2), no. 300,008* (fig. 3.3), no. 300,009* (fig. 3.4) (same locality)
Kattachi, Omuta City, Fukuoka Prefecture (33° 00'45"N, 130° 28'52"E)
Kattachi Formation, Manda Group
Bartonian, middle Eocene

***Eucorystes japonicus* Jimbô, 1894**

Paläont. Abh., N. F., vol. 2, no. 3, p. 101, pl. 9, fig. 7
Holotype: GT. I-159 (MA7483)*
Pankemoyubari River, a left-hand tributary of the Yubari, Ishikari Province, Hokkaidô (Yubari City, Hokkaidô)
Scaphites beds (Middle-Upper Yezo Group)
Turonian-Coniacian, late Cretaceous

***Euryozius angustus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 67, pl. 17, fig. 5

Holotype: MFM no. 83028*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)
Megami Formation
Middle Miocene

***Euryozius bidentatus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 67, pl. 17, figs. 1, 2, 4
Holotype: MFM no. 83030* (pl. 17, fig. 4); Paratype: MFM no. 83031* (pl. 17, fig. 1), no. 83032* (pl. 17 fig. 2) (same locality)
Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)
Megami Formation
Middle Miocene

***Galathea keijii* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 39, pl. 6, figs. 1-3, 10
Holotype: MFM no. 83036* (pl. 6, fig. 1); Paratype: MFM no. 83037* (pl. 6, fig. 3), no. 83038* (pl. 6, fig. 10), no. 83039* (pl. 6, fig. 2) (same locality)
Loc. MFM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)
Megami Formation
Middle Miocene

***Glabropilumnus kamiyai* Karasawa, 1991**

Bull. Mizunami Fossil Mus., no. 18, p. 16, pl. 11, fig. 2-1
Holotype: MFM no. 9038*
Loc. 07, Oginoshima, Kamado-cho, Mizunami City, Gifu Prefecture
Shukonohora Facies of the Akeyo Formation, Mizunami Group
Early middle Miocene

***Hexapus nakajimai* Imaizumi, 1959**

Jap. Jour. Geol. Geogr., vol. 30, p. 26, pl. 3, fig. 1
Holotype: PS no. 79466*
Southwest of Kamiyamada, Yamada-cho, Iwaki City, Fukushima Prefecture (36° 57'8"N, 140° 45'41"E)
IGPS loc. no. Fs-39, southwestern part of Kamiyamada-yashiki, Yamada-mura, Iwaki-gun, Fukushima Prefecture
Nakayama Formation
Miocene (Early middle Miocene)

***Homolopsis hachiyai* Takeda and Fujiyama, 1983**

Bull. Natn. Mus., Tokyo, ser. C, vol. 9, no. 4, p. 131, fig. 2, pl. 1, fig. 4, pl. 2, figs. 5-8
Holotype: NSM no. 12226* (fig. 2, pl. 2, fig. 5); Paratype: NSM no. 12224a* (pl. 2, fig. 8), no. 12227* (pl. 1, fig. 4), paratype A (MFM no. 247012*) (pl. 2, fig. 6), paratype B (MFM no. 247013*) (pl. 2, fig. 7) (same locality)
Tokuzo, northern shore of the small cape southeast of Hiraiga, Tanohata-mura, Iwate Prefecture
Hiraiga Formation, Miyako Group; lower part

Late Aptian, early Cretaceous

***Homolopsis japonicus* Yokoyama, 1911**

Jour. Coll. Sci., Univ. Tokyo, Sec. 2, vol., 27, art. 20, p. 12, pl. 3, fig. 4

Holotype: UMUT no. ?

Manda, Miike coal-field (from a depth of 489 feet) (Miike, Omuta City, Fukuoka Prefecture)

Non (Manda Group)

Eocene (Bartonian, middle Eocene)

***Hoplitocarcinus brevis* (Collins, Kanie and Karasawa) see *Metahomola brevis* Collins, Kanie and Karasawa**

***Hoploparia kamuy* Karasawa and Hayakawa, 2000**

Paleont. Res., vol. 4, no. 2, 139, figs. 1.1, 2, 1.5, 6

Holotype: MCM no. A609* (figs. 1.2, 6); Paratype: MCM no. A536 (figs. 1.1, 5)

Loc. YEZ-16, Oyubari, Yubari City, Hokkaido; Paratype: Loc. YEZ-17, Ponbetsuzawa, Mikasa City, Hokkaido

Upper Yezo Group

Santonian, late Cretaceous; Paratype: Turonian, late Cretaceous

***Hoploparia miyamotoi* Karasawa, 1998**

Paleont. Res., vol. 2, no. 4, p. 217, figs. 1.1-4, 2.1-4

Holotype: HMHA no. D1-015001* (figs. 1.1, 2.1); Paratype: MFM no. 247004* (figs. 1.2, 2.3), no. 247005* (figs. 1.4, 2.4), no. 247006* (figs. 1.3, 2.2)

Mitsukawa, Sumoto City, Hyogo Prefecture; Paratype (MFM247004): Sobura, Kaizuka City, Osaka Prefecture; Paratype (MFM247005 and MFM247006): Mitsukawa, Sumoto City, Hyogo Prefecture

Kita-ama Formation, Izumi Group; Paratype (MFM247004): Shindachi Formation, Izumi Group; Paratype (MFM247005 and MFM247006): Kita-ama Formation, Izumi Group

Maastrichtian, late Cretaceous

***Hyas tsuchidai* Imaizumi, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S. no. 5, p. 179, Text-figs. 1-4

Holotype: PS no. 74001*

IGPS loc. no. Te-10. Under the derick of the boring Toyotomi Well no. 2 of the Teikoku Oil Co. at Saro on the bank of the Sarubetsu, tributary of the Pankeepkorobetsu-gawa, Sarobetsu, Saro, Toyotomi-mura, Teshio Province, Hokkaido

Wakkanai Formation

Late Miocene

***Imaizumila sexdentata* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 53, pl. 11, figs. 1-3

Holotype: MFM no. 218507* (pl. 11, figs. 1, 3); Paratype: MFM no. 218508* (pl. 11, figs. 2a, b) (same locality)

Loc. KSM-1, Beach of Takasakiyama, Usunoura, Kosasa-cho, Kitamatsuura-gun, Saga Prefecture

Nagashima Sandstone of the Haiki Formation, Kishima Group
Early Oligocene

***Itoigawaia chichibuensis* Kato, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S. no. 183, p. 512, figs. 5.11, 6.7-12

Holotype: PS no. 102837* (fig. 5-11); Paratype: PS no. 102840* (fig. 9), 102843* (fig. 12) (same locality)

Loc. NG-4, left bank of the Arakawa River, Terao-Hagidaira, Chichibu City, Saitama Prefecture (36° 2'45"N, 139° 5'35"E)

Nagura Formation, Chichibumachi Group

Early middle Miocene

***Itoigawaia minoensis* (Karasawa) see *Portunites minoensis* Karasawa**

***Itoigawaia umemotoi* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 53, pl. 11, fig. 6

Holotype: MFM no. 9039*

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Laeviranina nodai* (Karasawa) see *Raninoides nodai* Karasawa**

***Laomedia praeastacina* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 11, pl. 1, figs. 8, 9

Holotype: MFM no. 9003* (pl. 1, fig. 9); Paratype: MFM no. 9004* (pl. 1, fig. 9) (same locality)

Loc. 32, Shomasamahora, Tsukiyoshi, Akeyo-cho, Mizunami City, Gifu Prefecture

Tsukiyoshi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Laurentiella imaizumii* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 30, pl. 1, figs. 2-4; pl. 2, fig. 6

Holotype: MFM no. 39003* (pl. 2, fig. 6); Paratype: MFM no. 39004* (pl. 1, fig. 2), MFM no. 39005* (pl. 1, fig. 3), MFM no. 39006* (pl. 1, fig. 4) (same locality)

Loc. MSD-1, Okuda, Masuda City, Shimane Prefecture (34° 43'N, 131° 49'45"E)

Toyoda Formation, Masuda Group

Early middle Miocene

***Leptodius crosnieri* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 60, pl. 16, fig. 9

Holotype: MFM no. 83029*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Leptodius morrisi* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 61, pl. 15, fig. 7

Holotype: MFM no. 83047*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Leucosia takamii* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 79, pl. 23, figs. 12a, b

Holotype: MFM no. 142016*

Loc. KKG-6, Umagadani, Ukari, Kakegawa City, Shizuoka Prefecture

Ten-no Sand, Kakegawa Group

Late Pliocene

***Linuparus japonicus* Nagao, 1931**

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 1, no. 2, p. 212, pl. 14, figs. 1-3

Syntype: GH. no. ?

Pombets, a tributary of the Ikushumbetsu, Province of Ishikari, Hokkaido (Ikushumbetsu, Mikasa City, Hokkaido); railway cutting at Kunitan near Kuji, Province of Rikuchu (Kunitan, Kuji City, Iwate Prefecture)

Scaphites Bed of the Upper Ammonites Beds (Upper Yezo Group); Kunitan Beds (Kunitan Formation, Kuji Group)

Senonian, late Cretaceous (Turonian-Maastrichtian, late Cretaceous)

***Lophoranina toyosimai* Yabe and Sugiyama see *Ranina* (*Lophoranina*) *toyosimai* Yabe and Sugiyama**

***Luisogalatea tomitai* Karasawa and Hayakawa, 2000**

Paleont. Res., vol. 4, no. 2, p. 143, fig. 4.1

Holotype: MFM no. 247010*

Loc. YEZ-19, Nakafutamatagawa, Haboro-cho, Tomamae-gun, Hokkaidō

Upper Yezo Group

Santonian, late Cretaceous

***Lupocyclus tuberculosus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 57, pl. 13, figs. 2, 4, 6

Holotype: MFM no. 142011* (pl. 13, fig. 4); Paratype: MFM no. 142012* (pl. 13, fig. 2), MFM no. 142013* (pl. 13, fig. 6) (same locality)

Loc. MYZ-7, Road cut of Kamiyamaji, Saito City, Miyazaki Prefecture (32° 7'25"N, 131° 22'20"E)

Kawabara Formation, Miyazaki Group

Early Pliocene

***Lyreidus teshimai* (Fujiyama and Takeda) see *Ranidina teshimai* Fujiyama and Takeda**

***Macroacaena teshimai* (Fujiyama and Takeda) see *Ranidina teshimai* Fujiyama and Takeda**

***Macrocheira ginzanensis* Imaizumi, 1965**

Res. Crust. no. 2, p. 30, pl. 4, figs. 1-5

Holotype: PS no. 90010*

Middle stream of the Okamami-zawa, a tributary of Yakushi-sawa River, Ginzan Hotsprings, Obanazawa City, Yamagata Pref. (38° 33'18"N, 140° 33'35"E)

Ginzan Formation

Miocene (Middle Miocene)

***Macrocheira yabei* (Imaizumi) see *Paratymolus yabei* Imaizumi**

***Macrophthalmus (Mareotis) viai* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 88, pl. 3, figs. 6-10

Holotype: MFM no. 83001* (pl. 3, fig. 7); Paratype: MFM no. 83002* (pl. 3, fig. 10), no. 83003* (pl. 3, fig. 6), no. 83004* (pl. 3, figs. 8, 9) (same locality)

Loc. KK-1, Beach, south of Sato, Shimonaka, Minamitane-cho, Kumage-gun, Kagoshima Prefecture (30° 21'50"N, 130° 55'E)

Kawachi Formation, Kakinaga Group

Early middle Miocene

***Maja morii* Kato, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S. no. 183, p. 518, figs. 8.8, 9

Holotype: PS no. 103100* (fig. 8.9); Paratype: PS no. 103101* (fig. 8.8) (same locality)

Loc. Ng-13, left side cliff of the Akahiragawa River, about 50 m downstream from the Akahirabashi Bridge, Matsuida, Ogano-machi, Chichibu-gun, Saitama Prefecture (36° 0'39"N, 139° 2'35"E)

Nagura Formation, Chichibumachi Group

Early middle Miocene

***Medaeops megamiensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 59, pl. 15, figs. 1, 2, 4

Holotype: MFM no. 83040* (pl. 15, fig. 4); Paratype: MFM no. 83041* (pl. 15, fig. 1), MFM no. 83052* (pl. 15, fig. 2) (same locality)

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Medorippe tanabei* Karasawa, 2000**

Proc. Biol. Soc. Washington, vol. 113, no. 3, p. 811, fig. 2

Holotype: MFM no. 39019*

Loc. KTT-1, Shinden, Tsuyama City, Okayama Prefecture (35° 3'5"N, 134° 4'1"E)

Yoshino Formation, Katsuta Group

Early middle Miocene

Megakkos hexagonalis (Nagao) see *Portunites hexagonalis* Nagao

***Megamia anaglypta* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 64, pl. 15, fig. 3

Holotype: MFM no. 83026*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Metahomola brevis* Collins, Kanie and Karasawa, 1993**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 172, p. 297, figs. 2.2, 3

Holotype: YCMGP no. 854* (fig. 2.2); Paratype: MFM no. 247002* (fig. 2.3)

Loc. YEZ-7, Junction of the Kanajirisawa and the Obirashibe-gawa, Tappu, Obira-cho, Rumoi-gun, Hokkaido; Paratype: Loc. YEZ-5, Horotatezawa, Haboro-cho, Tomamae-gun, Hokkaido

Holotype: M1? Member of the Middle Yezo Group; Paratype: Middle Haborozawa Formation of the Upper Yezo Group

Holotype: Turonian, late Cretaceous; Paratype: Santonian, late Cretaceous

Minohellenus chichibuensis (Kato) see *Itoigawaia chichibuensis* Kato

***Minohellenus macrocheilus* Kato and Karasawa, 1994**

Bull. Kitakyushu Mus. Nat. Hist., no. 13, p. 55, figs. 2-1a, b; pl. 4, figs. 1-4

Holotype: KMNH IvP no. 300,020* (pl. 4, figs. 1-4); Paratype: KMNH IvP no. 300,021* (figs. 2-1a, b)

Sezaki, Ainoshima Island, Kokurakita-ku, Kitakyushu City, Fukuoka Prefecture; Paratype: Arige, Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture

Yamaga Formation, Ashiya Group

Late Oligocene

Minohellenus minoensis (Karasawa) see *Portunites minoensis* Karasawa

Minohellenus quinquentatus (Karasawa) see *Charybdis (Minohellenus) quinquentata* Karasawa

***Miosesarma japonica* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 24, pl. 3, figs. 10-13

Holotype: MFM no. 9015* (pl. 3, fig. 10); Paratype: MFM no. 9016* (pl. 3, fig. 13), no. 9017* (pl. 3, figs. 12a, b), no. 9018* (pl. 3, figs. 11a, b) (same locality)

Loc. 25, Asano, Tokitsu-cho, Toki City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

Miosesarma japonicum Karasawa, 1989 see *Miosesarma japonica* Karasawa

***Miosesarma nagureense* Kato, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 183, p. 518, Figs. 8.1-7

Holotype: PS no. 102976* (Fig. 8.5); Paratype: PS no. 102974* (fig. 8.3), no. 103081* (fig. 8.4)

Loc. Ng-9, Yobake Cliff. Right side cliff of the Akahiragawa River, Nagura, Ogano-machi, Chichibu-gun, Saitama Prefecture (36° 0'53"N, 139° 3'2"E); Paratype: Loc. Ng-13, left side cliff of the Akahiragawa River, about 50 m downstream from the Akahirabashi Bridge, Matsuida, Ogano-machi, Chichibu-gun, Saitama Prefecture (36° 0'39"N, 139° 2'35"E); Loc. Nk-2, right side cliff of the Akahiragawa River, near the Goheibashi Bridge, Obashira, Chichibu City, Saitama Prefecture (36° 3'50"N, 139° 5'18"E)

Nagura Formation, Chichibumachi Group; Nenokami Sandstone Member of the Ushikubitoge Formation

Early middle Miocene

***Munida nishioi* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 38, pl. 5, fig. 5

Holotype: MFM no. 83054*

Loc. YTO-1, Dry river bed of Murasugi, Yatsuo-cho, Nei-gun, Toyama Prefecture (36° 44'15"N, 137° 9'30"E)

Joyama Member of the Higashibessho Formation, Yatsuo Group

Early middle Miocene

Munida ogaensis (Hatai and Kotaka) see *Kazuioia ogaensis* Hatai and Kotaka (see Isopoda)

Mursia circularis (Karasawa) see *Paramursia circularis* Karasawa

***Mursia minuta* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 45, pl. 8, fig. 14

Holotype: MFM no. 142003* (pl. 8, fig. 14); Paratype: MFM no. 142004* (pl. 8, fig. 13) (same locality)

Loc. MYZ-7, Road cut of Kamiyamaji, Saito City, Miyazaki Prefecture (32° 7'25"N, 131° 22'20"E)

Kawabara Formation, Miyazaki Group

Early Pliocene

***Mursia takahashii* Imaizumi, 1952**

Short Papers Inst. Geol. Paleont., Tohoku Univ., no. 4, p. 90, figs. 1-4

Holotype: PS no. 74305* (figs. 1, 1a, 2); Paratype: no. ? (figs. 3, 4) (same locality)

IGPS loc. no. Mi-93; northern bank along the river cliff of the Goishi River opposite Goishi, Tomioka-mura, Shibata-gun, Miyagi Prefecture (38° 11'45"N, 140° 43'55"E) (Northern bank of the river cliff of the Goishigawa River, Goishi, Kawasaki-cho, Shibata-gun, Miyagi Prefecture)

Hatatate Formation
Miocene (Middle Miocene)

***Necrocarcinus undecimtuberculatus* Takeda and Fujiyama, 1983**

Bull. Natn. Mus., Tokyo, ser. C, vol. 9, no. 4, p. 133, fig. 3, pl. 1, figs. 1, 2

Holotype: NSM no. 12223*

Tokuzo, northern shore of the small cape southeast of Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation, Miyako Group; lower part

Late Aptian, early Cretaceous

'*Neocallichirus*' bona (Imaizumi) see *Callianassa bona* Imaizumi

***'Neocallichirus'* grandis Karasawa and Goda, 1996**

Sci. Rep. Toyohashi Mus. Nat. Hist., no. 6, p. 1, figs. 1-1a-8

Holotype: TMNH no. 02502* (figs. 1-1a, b); Paratype: TMNH no. 02503* (figs. 1-2a-d), no. 02504* (fig. 1-3), no. 02505* (figs. 1-4a-d), no. 02506* (figs. 1-5a, b), no. 02507* (figs. 1-6a, b), no. 02508* (fig. 1-7), no. 02509* (fig. 1-8) (same locality)

Takamatsu, Akabane-cho, Atsumi-gun, Aichi Prefecture

Takamatsu silty Sandstone of the Toyohashi Formation, Atsumi Group

Middle Pleistocene

'*Neocallichirus*' okamotoi (Karasawa) see *Calliax okamotoi* Karasawa

***Neocallichirus sakiae* Karasawa and Fudoujii, 2000**

Paleont. Res. vol. 4, no. 4, p. 243, figs. 3.5-8, 10, 11

Holotype: MFM no. 218515* (figs. 3.6, 8); Paratype: MFM no. 218516* (fig. 3.5), no. 218517* (fig. 3.11), no. 218518* (fig. 3.10), no. 218519* (fig. 3.7)

Loc. KSM-12, Komanaki, Okawa-cho, Imari City, Saga Prefecture; Paratype: Loc. KSM-12, Komanaki, Okawa-cho, Imari City, Saga Prefecture; KSM-16, Sosorogawachi, Genkai-cho, Saga Prefecture

Yukiaino Sandstone Member of the Kishima Group

Early Oligocene

***Notopocorystes intermedius* Nagao see *Notopocorystes (Eucorystes) intermedius* Nagao**

***Notopocorystes (Eucorystes) intermedius* Nagao, 1931**

Jour. Fac. Sci., Hokkaidō Imp. Univ., Ser. 4, vol. 1, no. 2, p. 207, pl. 14, figs. 4, 4a

Holotype: GH no. 3184*

Southeast of the Ikushumbetsu colliery and along the Ikushubetsu, Province of Ishikari, Hokkaido (Ikushunbetsu, Mikasa City, Hokkaido)

Trigonia Sandstone (Mikasa Formation, Middle Yezo Group)

Cenomanian-Turonian, late Cretaceous

***Notopocorystes (Eucorystes) japonicus* (Jimbo) see *Eucorystes japonicus* Jimbô**

***Ozius collinsi* Karasawa, 1992**

Tertiary Res., vol. 14, no. 1, p. 20, pl. 1, figs. a, b

Holotype: MFM no. 39001* (pl. 1, fig. a); Paratype: MFM no. 39002* (pl. 1, fig. b) (same locality)

Niida, Tsuyama City, Okayama Prefecture (35° 3'05"N, 134° 4'1"E)

Yoshino Formation, Katsuta Group

Early middle Miocene

***Padocatactes ujiharai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 48, pl. 8, figs. 3, 5

Holotype: MFM no. 142005* (pl. 8, fig. 3); Paratype: MFM no. 142006* (pl. 8, fig. 5) (same locality)

Loc. MYZ-11, Dry river-bed of Mouke, Takanabe-cho, Koyu-gun, Miyazaki Prefecture (32° 6'45"N, 131° 29'30"E)

Takanabe Formation, Miyazaki Group

Late Pliocene

***Paki rurkonsimpu* Karasawa and Hayakawa, 2000**

Paleont. Res., vol. 4, no. 2, p. 142, figs. 1.3, 4, 7; figs. 2.1-3; fig. 3

holotype: MCM no. A539*

Loc. YEZ-18, Kotanbetsu, Tomamae-cho, Tomamae-gun, Hokkaido

Upper Yezo Group

Campanian, late Cretaceous

***Palaeoxanthops minutus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 62, pl. 16, figs. 4, 8

Holotype: MFM no. 83044* (pl. 16, fig. 8); Paratype: MFM no. 83045* (pl. 16, fig. 4) (same locality)

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Palaeoxanthops okumurai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 63, pl. 16, figs. 5, 7

Holotype: MFM no. 83050* (pl. 16, fig. 5); Paratype: MFM no. 83051* (pl. 16, fig. 7) (same locality)

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Palagalathea miyakoensis* Takeda and Fujiyama, 1983**

Bull. Natn. Mus., Tokyo, ser. C, vol. 9, no. 4, p. 130, fig. 1, pl. 1, fig. 3

Holotype: NSM no. 12225*

Tokuzo, northern shore of the small cape southeast of Hiraiga, Tanohata-mura, Iwate Prefecture

Hiraiga Formation, Miyako Group; lower part
Late Aptian, early Cretaceous

***Pandalus orientalis* Niino, 1951**

Jour. Tokyo Univ. Fish., vol. 38, no. 1, pl. 6, fig. 2, pl. 7, fig. 1
Syntype: Reg. no. 123, 124 (lost)
Orita, Nakanojyo-machi, Azuma-gun, Gunma Prefecture
Orita Formation
Miocene (Middle Miocene)

***Paramursia circularis* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 16, pl. 3, figs. 7, 8
Holotype: MFM no. 9013* (pl. 3, fig. 7); Paratype: MFM no. 9014* (pl. 3, fig. 8) (same locality)
Loc. 07, Oginoshima, Kamado-cho, Mizunami City, Gifu Prefecture
Shukunohora Facies of the Akeyo Formation, Mizunami Group
Early middle Miocene

***Parathranites shibatai* Karasawa, 1990**

Bull. Mizunami Fossil Mus., no. 17, p. 21, pl. 6, figs. 7a, b
Holotype: MFM no. 9032*
Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture
Yamanouchi Member of the Akeyo Formation, Mizunami Group
Early Miocene

***Paratymolus yabei* Imaizumi, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 25, p. 27, pl. 5, figs. 2-8, text-fig. 1
Lectotype: PS no. 79485*
IGPS loc. no. N-5, north cliff in the ground of the Chiyo Primary School, Yonekawa, Chiyo-mura, Shimoina-gun, Nagano Prefecture (35° 25'2"N, 137° 51'58"E) (Yonekawa, Chiyo, Iida City, Nagano Prefecture)
middle part of Yonekawa Formation, Tomikusa Group
Miocene (Early Miocene)
(The lectotype was designated by Hanzawa et al. (1961))

***Paraxanthias fujiyamai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 61, pl. 15, figs. 8, 9
Holotype: MFM no. 83042* (pl. 15, fig. 9); Paratype: MFM no. 83043* (pl. 15, fig. 8) (same locality)
Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)
Megami Formation
Early middle Miocene

***Pariphiculus inconditus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 77, pl. 23, fig. 2
Holotype: MFM no. 142014*
Loc. MYZ-7, Road cut of Kamiyamaji, Saito City, Miyazaki Prefecture (32° 7'25"N, 131° 22'20"E)

Kawabara Formation, Miyazaki Group
Early Pliocene

***Paromola japonicus* (Yokoyama) see *Homolopsis japonicus* Yokoyama**

***Petrolisthes miocaenicus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 39, pl. 6, figs. 5, 7-9, 13
Holotype: MFM no. 83021* (pl. 6, fig. 7); Paratype: MFM no. 83022* (pl. 6, fig. 5), no. 83023* (pl. 6, fig. 9), no. 83024* (pl. 6, fig. 8), no. 83025* (pl. 6, fig. 13) (same locality)
Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)
Megami Formation
Early middle Miocene

***Philyra hayasakai* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 86, pl. 3, figs. 3, 4
Holotype: MFM no. 83005* (pl. 3, fig. 3); Paratype: MFM no. 83006* (pl. 3, fig. 4) (same locality)
Loc. KK-1, Beach, south of Sato, Shimonaka, Minamitane-cho, Kumage-gun, Kagoshima Prefecture (30° 21'50"N, 130° 55'E)
Kawachi Formation, Kakinaga Group
Early middle Miocene

***Philyra miyamotoi* Karasawa and Kishimoto, 1996**

Bull. Mizunami Fossil Mus., no. 22, p. 37, fig. 4
Holotype: MFM no. 39016*
Shinden, Tsuyama City, Okayama Prefecture
Yoshino Formation, Katsuta Group
Early middle Miocene

***Philyra nishimotoi* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 19, pl. 3, figs. 5a-6b, 9a, b
Holotype: MFM no. 9008* (pl. 3, figs. 5a, b); Paratype: MFM no. 9009* (pl. 3, figs. 6a, b), no. 9010* (pl. 3, figs. 9a, b) (same locality)
Loc. 22, Inkyoyama, Kawai, Toki City, Gifu Prefecture
Kujiri Facies of the Akeyo Formation, Mizunami Group
Early Miocene

***Philyra plana* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 19, pl. 3, figs. 2, 3a, b
Holotype: MFM no. 9011* (pl. 3, figs. 3a, b); Paratype: MFM no. 9012* (pl. 3, fig. 2) (same locality)
Loc. 07, Oginoshima, Kamado-cho, Mizunami City, Gifu Prefecture
Shukunohora Facies of the Akeyo Formation, Mizunami Group
Early middle Miocene

***Philyra tanakai* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 78, pl. 22, fig. 1
Holotype: MFM no. 142001*

Loc. KKG-1, Road cut of Hongohigashi, Kakegawa City, Shizuoka Prefecture (34° 48'10"N, 138° 57'50"E)
Dainichi Sand, Kakegawa Group
Late Pliocene

***Philyra tridentata* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 79, pl. 22, fig. 7

Holotype: MFM no. 142018*

Loc. KKG-2, Road cut of Kamiida, Mori-machi, Suchi-gun, Shizuoka Prefecture (34° 48'30"N, 137° 51'20"E)

Dainichi Sand, Kakegawa Group

Late Pliocene

***Pilodius parvus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 65, pl. 18, fig. 15

Holotype: MFM no. 83027*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Pithonotus inflatum* Collins and Karasawa, 1993**

Sci. Rep. Toyohashi Mus. Nat. Hist., no. 3, p. 17, figs. 1a-c

Holotype: TMNH no. 01530*

Hokkaido

Upper Yezo Group

Turonian-Campanian, late Cretaceous

***Platepistoma imamuræ* (Imaizumi) see *Cancer ? imamuræ* Imaizumi**

***Platepistoma kaedei* (Karasawa) see *Cancer (Glebocarcinus) kaedei* Karasawa**

***Plagiolophus ezoensis* Nagao, 1941**

Jour. Fac. Sci., Hokkaidô Univ., Ser. 4, vol. 6, no. 2, p. 97. pl. 26, figs. 1, 2

Holotype: GH no. 31699* (pl. 26, fig. 2); paratype: GH no. 31700* (pl. 26, fig. 1) (same locality)

Sanusibezawa, Hobetu-mura, Yuhutu-gun, province of Ibari, Hokkaido (Sanushibezawa, Hobetsu-cho, Yufutsu-gun, Hokkaido)

Hakobuti beds (Hakobuchi Group)

Senonian, late Cretaceous (Campanian-Maastrichtian, late Cretaceous)

***Portunites hexagonalis* Nagao, 1932**

Jour. Fac. Sci., Hokkaidô Imp. Univ., Ser. 4, vol. 2, no. 1, p. 16, pl. 4, figs. 3, 14

Holotype: GH no. 4456* (pl. 4, fig. 14); Paratype: GH no. 4605* (pl. 4, fig. 3)

A cliff of the Ikushumbets, near the yayoi Colliery, Sorachi-gun, province of Ishikari (Yayoi, Ikusyunbetsu, Mikasa City, Hokkaido)

Poronai series (Poronai Formation)

Lower Neogene (Late Eocene)

***Portunites kattachiensis* Karasawa, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 167, p.1252, fig. 5.3

Holotype: KMNH IvP no. 300,016*

Kattachi, Omuta City, Fukuoka Prefecture (33° 00'45"N, 130° 28'52"E)

Kattachi Formation, Manda Group

Bartonian, middle Eocene

***Portunites minoensis* Karasawa, 1990**

Bull. Mizunami Fossil Mus., no. 17, p. 14, pl. 2, figs. 1, 3-5

Holotype: MFM no. 9035* (pl. 2, fig. 3); Paratype: MFM no. 9036* (pl. 2, fig. 1), no. 9037* (pl. 2, figs. 4, 5) (same locality)

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Prohomola japonica* (Yokoyama) see *Homolopsis japonicus* Yokoyama**

***Randallia saitoensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 76, pl. 22, fig. 2

Holotype: MFM no. 142015*

Loc. MYZ-7, Road cut of Kamiyamaji, Saito City, Miyazaki Prefecture (32° 7'25"N, 131° 22'20"E)

Kawabara Formation, Miyazaki Group

Early Pliocene

***Ranidina teshimai* Fujiyama and Takeda, 1980**

Prof. S. Kanno Memr. Vol., p. 340, pl. 39, figs. 1-5, pl. 40, figs. 1-4

Holotype: NSM no. 12047* (pl. 39, figs. 1, 2); Paratype: NSM no. 12048* (pl. 40, figs. 1, 2), no. 12049* (pl. 39, figs. 4, 5), no. 12050* (pl. 39, fig. 3)

Main stream of Pankemaya River, Yubari City, Hokkaidô

Poronai Formation

Late Eocene

***Ranina (Lophoranina) toyosimai* Yabe and Sugiyama, 1935**

Jap. Jour. Geol. Geogr., vol. 12, nos. 1-2, p. 2, pl. 1, figs. 1-11

Holotype: PS coll. cat. no. 43384*

Nishiura, near Oki-mura, Hahajima, Ogasawara Group (Bonin Is.)

Nummulites bed (Okimura Formation)

Eocene (Middle Eocene)

***Raninoides nodai* Karasawa, 1992**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 167, 1252, figs. 4.2-7

Holotype: KMNH IvP no. 300,011* (figs. 4.2, 7); Paratype: KMNH IvP no. 300,012* (fig. 4.3), no. 300,013* (fig. 4.4), no. IvP300,014* (fig. 4.5), no. IvP300,015* (fig. 4.6) (same locality)

Kattachi, Omuta City, Fukuoka Prefecture (33° 00'45"N, 130° 28'52"E)

Kattachi Formation, Manda Group

Batsonian, middle Eocene

***Scylla miocenica* Inagaki, 1938**

Jour. Geol. Soc. Japan, vol. 46, no. 3, p. 35, pl. 3 (1), figs. 1, 2

Holotype: Seventh Middle School of Tokyo, no. ? (pl. 3 (1), fig. 1); Paratype: Seventh Middle School of Tokyo, no. ? (pl. 3 (1), fig. 2) (same locality)

Yuda, Kintaiti-mura (near Hukuoka-mati), Ninohe-gôri, Iwate Prefecture (Yoda, Ninohe City, Iwate Prefecture)

Lower Kadonosawa Formation

Miocene (Early middle Miocene)

(The present species was synonymous with *Scylla ozawai* Glaessner, 1933 by Karasawa (1990))

***Scylla ozawai* Glaessner, 1933**

Ann. Mag. Nat. Hist., 10th ser., no. 67, p. 20, pl. 4, fig. 2

Holotype: BM no. I. 3469*

Near Akita, North Japan (? Yuda, Ninohe City, Iwate Prefecture)

Vicarya-beds (Kadonosawa Formation)

Early Miocene (Early middle Miocene)

***Tillocheles kaoriae* Yokoi and Karasawa, 2000**

Bull. Mizunami Fossil Mus., no. 27, p. 192, figs. 1-1-6

Holotype: MFM no. 247017 (figs. 1-1-3); Paratype: MFM no. 24018 (figs. 1-4-6)

Holotype: Loc. YEZ-21, Watanabenzawa, Obira-cho, Tomamae-gun, Hokkaido Paratype: Loc. YEZ-10, Katsurazawa, Ikushunbetsu, Mikasa City, Hokkaido

Holotype: Mn Member of the Middle Yezo Group; Paratype: Mikasa Formation of the Middle Yezo Group

Cenomanian-Turonian, late Cretaceous

***Trachycarcinus huziokai* Imaizumi, 1951**

Short Papers Inst. Geol. Paleont., Tohoku Univ., no. 3, p. 33, pl. 6, figs. 1-10

Holotype: PS no. 73235* (figs. 1, 2); Paratype: Same number (figs. 3-6) (same locality)

IGPS loc. no. Yt-1; southern stream cliff of the Yoko-gawa, 1.4 km EES of Akashiba-bashi, Ogunimoto-mura, Nishioitama-gun, Yamagata Prefecture (38° 4'10" N, 139° 44'17"E)

Oguni Group (Numazawa Formation); lower part Miocene (middle Miocene)

***Trachycarcinus inflatus* Kato, 1996**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 183, p. 510, fig. 5.1-4

Holotype: PS. no. 102783* (fig. 5.3); Paratype: PS. no. 102781* (figs 5.1a, b), no. 102784* (figs. 5.2) (same locality)

Loc. Ng-4, left bank of the Arakawa River, Terao-Hagidaira, Chichibu City, Saitama Prefecture (36° 2'45"N, 139° 5'35"E)

Early middle Miocene

Nagura Formation, Chichibumachi Group

***Trapezia brebispinosa* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 66, pl. 16, fig. 10

Holotype: MFM no. 83046*

Loc. MGM-1, Megamiyama, Sagara-cho, Haibara-gun, Shizuoka Prefecture (34° 42'16"N, 138° 11'E)

Megami Formation

Early middle Miocene

***Trichopeltarion huziokai* (Imaizumi) see *Trachycarcinus huziokai* Imaizumi**

***Trichopeltarion inflatus* (Kato) see *Trachycarcinus inflatus* Kato**

***Tritodynamia globosa* Karasawa, 1990**

Bull. Mizunami Fossil Mus., no. 17, p. 30, pl. 8, figs. 12, 15

Holotype: MFM no. 9033* (pl. 8, fig. 12); Paratype: MFM no. 9034* (pl. 8, fig. 15) (same locality)

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Trypaea mizunamiensis* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 34, pl. 4, figs. 1, 2

Holotype: MFM no. 9040* (pl. 4, fig. 1); Paratype: MFM no. 9041* (pl. 4, fig. 2)

Loc. 45, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of the Akeyo Formation, Mizunami Group

Early Miocene

***Tymolus ingens* Takeda and Tomida, 1984**

Bull. Mizunami Fossil Mus., no. 11, p. 43, pl. 13, figs. 1a-2b

Holotype: MFM no. 9001* (pl. 13, figs. 1a, b); Paratype: NSM no. 12247* (pl. 13, figs. 2a, b)

Loc. 46, Hesoyama, Yamanouchi, Akeyo-cho, Mizunami City, Gifu Prefecture; Paratype: Loc. 54, Togari, Akeyo-cho, Mizunami City, Gifu Prefecture

Yamanouchi Member of Akeyo Formation, Mizunami Group

Early Miocene

***Tymolus itogawai* Takeda and Tomida, 1984**

Bull. Mizunami Fossil Mus., no. 11, p. 45, pl. 13, figs. 5a, b, 6

Holotype: MFM no. 9002* (pl. 13, figs. 5a, b); Paratype: NSM no. 12248* (pl. 13, fig. 6) (same locality)
 Loc. 07, Oginoshima, Kamado-cho, Mizunami City, Gifu Prefecture
 Shukunohora Facies., Akeyo Formation, Mizunami Group
 Early middle Miocene

***Tymolus kamadai*, Imaizumi, 1952**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 7, p. 201, text-figs. 1-4

Holotype: PS no. 74002*

IGPS loc. no. Fs-14; east cliff of Kosuganotsutsumi, Takaku-mura, Iwaki City, Fukushima Prefecture (36° 55'56"N, 140° 55'19"E)

Numanouchi Formation, Takaku Group
 Miocene (Early middle Miocene)

***Typhlocarcinus obtusus* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 72, pl. 21, figs. 1a-2b

Holotype: MFM no. 142009* (pl. 21, figs. 1a, b); Paratype: MFM no. 142010* (pl. 21, figs. 2a, b) (same locality)

Loc. KKG-3, Goudaijimashita, Toyooka-mura, Iwata-gun, Shizuoka Prefecture (34° 49'20"N, 137° 51'20"E)

Dainichi Sand, Kakegawa Group
 Late Pliocene

***Typilobus kishimotoi* Karasawa, 1998**

Proc. Biol. Soc. Washington, vol. 111, no. 1, p. 97, figs. 2-1a-2c

Holotype: MFM no. 39017* (figs. 2-1a-c); Paratype: MFM no. 39018* (figs. 2-2a-c)

Tanaka, Katsuou-cho, Katsuta-gun, Okayama Prefecture;
 Paratype: Mino, Katsuou-cho, Katsuta-gun, Okayama Prefecture
 Yoshino Formation, Katsuta Group

Early middle Miocene

***Upogebia mizunamiensis* Karasawa, 1989**

Bull. Mizunami Fossil Mus., no. 16, p. 11, pl. 2, figs. 2, 4a-5c

Holotype: MFM no. 9005* (pl. 2, figs. 5a-c); Paratype: MFM no. 9006* (pl. 2, figs. 4a-e), no. 9007* (pl. 2, fig. 2) (same locality)

Loc. 32, Shomasamahora, Tsukiyoshi, Akeyo-cho, Mizunami City, Gifu Prefecture

Tsukiyoshi Member of the Akeyo Formation, Mizunami Group
 Early Miocene

***Upogebia striata* Karasawa and Kishimoto, 1996**

Bull. Mizunami Fossil Mus., no. 22, p. 36, figs. 1-3

Holotype: MFM no. 39014* (figs. 1, 2); Paratype: MFM no. 39015* (fig. 3) (same locality)

Shinden, Tsuyama City, Okayama Prefecture
 Yoshino Formation, Katsuta Group

Early middle Miocene

***Upogebia tanegashimensis* Karasawa and Inoue, 1992**

Tertiary Res., vol. 14, no. 2, p. 78, pl. 1, figs. 1-3, 8a, b

Holotype: MFM no. 83011* (pl. 1, fig. 3); Paratype: MFM no. 83012* (pl. 1, fig. 1), no. 83013* (pl. 1, fig. 2), 83014* (pl. 1, figs. 8a, b) (same locality)

Loc. KK-5, Cliff, south of Suigo, Hirayama, Minamitane-cho, Kumage-gun, Kagoshima Prefecture (30° 25'29 "N, 130° 56'53"E)

Kawachi Formation, Kukinaga Group
 Early middle Miocene

***Varuna angustifrons* Karasawa, 1993**

Bull. Mizunami Fossil Mus., no. 20, p. 81, pl. 23, fig. 13

Holotype: MFM no. 218501*

Loc. KSM-2, Cliff of Hatada, Ohmachi, Ohmachi-cho, Kishima-gun, Saga Prefecture (33° 13'N, 129° 35'40"E)

Kishima Formation, Kishima Group
 Early Oligocene

***Xanthilites pentagonalis* Yokoyama, 1911**

Jour. Coll. Sci., Univ. Tokyo, Sec. 2, vol., 27, art. 20, p. 13, pl. 3, fig. 3

Holotype: UMUT no. ?

Manda, Miike coal-field (from a depth of 489 feet) (Miike, Omuta City, Fukuoka Prefecture)

Non (Manda Group)

Eocene (Bartonian, middle Eocene)

***Zygostrocarcinus japonicus* (Yokoyama) see *Homolopsis japonicus* Karasawa**

Isopoda

***Bathynomus undecimspinosus* (Karasawa, Nobuhara and Matsuoka) see *Palaega undecimspinosus* Karasawa, Nobuhara and Matsuoka**

***Kazuoia ogaensis* Hatai and Kotaka, 1970**

Saito Ho-on Kai Mus. Res. Bull., no. 39, p. 2, figs. 1, 2

Holotype: PS no. 86726*

Daijima, Oga City, Akita Prefecture

Nishikurosawa Formation

Middle Miocene

***Palaega undecimspinosus* Karasawa, Nobuhara and Matsuoka, 1992**

Sci. Rep. Toyohashi Mus. Nat. Hist., no. 2, p. 6, figs. 5-1, 2

Holotype: ESN no. 90001* (fig. 5-1); Paratype: ESN no. 90002* (fig. 5-2) (same locality)

Murasugi, Yatsuo-cho, Nei-gun, Toyama Prefecture (36° 44'15"N, 137° 9'30"E)

Joyama Member of the Higashibessho Formation, Yatsuo Group
 Early middle Miocene

Stomatopoda

Shako tomidai Karasawa, 1996

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 182, p. 415, figs. 1.1-5, 2, 3.1a-2

Holotype: MFM no. 39013* (figs. 1.1-5, 2, 3.2); Paratype: MFM no. 9042* (figs. 3.1a, b)

A road cut of Nishino, Ayukawa, Tsuchiyama-cho, Koga-gun, Shiga Prefecture (34° 56'32"N, 136° 19'24"E); Paratype: Loc. 36, dry riverbed southeast of Shomasamahora, Tsukiyoshi, Akeyo-cho, Mizunami City, Gifu Prefecture (35° 22'42"N, 137° 14'E)

Sendani Sandstone Mudstone Member of Tsuchiyama Formation, Ayukawa Group; Paratype: Tsukiyoshi Member of the Akeyo Formation, Mizunami Group
Early Miocene

Cenozoic Brachiopoda

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***Anomia picta* Dillwyn, 1817**

Descriptive Catalogue of Recent Shells, vol. 1, p. 295.

Type: place of preservation unknown.

Simosaki, Japan, 20-80 fathoms.

Recent

(*Picthyris picta* (Dillwyn, 1817) by Thomson, 1927, New Zealand Board of Science and Art, Manual, no. 7, p. 260-262, fig. 86.)

Basiliola lucida* (Gould, 1860) see *Rhynchonella lucida* Gould, 1860**Basiliola nitida* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 7, pl. 1, figs. 17-23.

Holotype: USNM Cat. No. MO 549314*.

Quarry on east side of Highway 5 near foot of long hill, about 0.3 mile north of intersection of Highways 5 and 130, USGS Loc. 17521.

Naha Limestone

Pliocene

***Campages basilanica* Dall, 1920**

Proc. U. S. Natl. Mus., vol. 57, no. 2314, p. 365-366, unfigured.

Holotype: USNM Cat. No. MO 204667* (loc. USBF St. 4936).

Paratype: USNM Cat. No. MO 110546* (loc. USBF St. 4918).

USBF St. 4936, Kagoshima Gulf, Sata Misaki Lt., N21E, 5.7 mi., 30°54'40"N, 130°37'30"E.; USBF St. 4918, Japan Sea, Off Gwaha-shima, S38E, 34 mi., 30°22'00"N, 129°08'30"E.

Recent

(*Campages mariae* (A.Adams, 1860) by Cooper, 1970, Jour. Paleont., vol. 44, no. 5, p. 900)

Campages dubius* (Hatai, 1940) see *Japanithyris dubius* Hatai, 1940**Campages japonica* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.311, pl. 5, figs. 87-88, 92-93.

Holotype: IGPS coll. cat. no. 62163.

Soyo-maru St. 575, 37°48'00" N., 137°18'00" E., 123 m.

Recent

Campages mariae* (A.Adams, 1860) see *Terebratella mariae* A.Adams, 1860**Campages nipponensis* (Yabe and Hatai, 1935) see*****Japanithyris nipponensis* Yabe and Hatai, 1935*****Campages pacifica* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.311-312, pl. 2, figs. 36-39.

Holotype: IGPS, coll. cat. no. 62156*.

West coast of Kyusyu, Soyo-maru St. 419, 31°12'10" N., 129°49'45" E., 402 m.

Recent

Coptothyris excelsa* (Yokoyama, 1923) see *Terebratella* (?) *excelsa* Yokoyama, 1923**Coptothyris excelsa koyamai* (Makiyama, 1927) see *Terebratalia koyamai* Makiyama, 1927*****Coptothyris grayi* (Davidson, 1852) see *Terebratula grayi* Davidson, 1852*****Coptothyris grayi aomoriensis* Hayasaka, 1932**

Sci. Rep., Tohoku Univ., Ser. 4, vol. 7, no. 1, p. 9-11, pl. 1, figs. 5a-b, 6.

Holotype: place of preservation unknown, Spec. No. 485.

Off Tsubakiyama, St. 45.

Recent

(*Coptothyris grayi* (Davidson, 1852) by Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.381.)

Remarks: Fossils of *Coptothyris grayi aomoriensis* reported by Hayasaka, 1933, Japan. Jour. Geol. Geogr., vol. 10, p. 125-128 is synonymous with *Coptothyris excelsa* (Yokoyama, 1923) by Hayasaka, 1973, Sci. Rep., Tohoku Univ., 2nd Ser., Spec. Vol., no. 6, p. 104-105.

***Coptothyris sinanoensis* Kuroda, 1931**

Geology of the Central Part of the Shinano Province, art. 4, pt. 1, p.89, pl. 12, figs. 117-118.

Holotype: Geol. Inst., Kyoto Univ. No. ?.

N. of Kitajo-yama, Nishigori-mura, Higashi-Chikuma-gun, Nagano Prefecture.

Shigarami Formation

Lower Pliocene

(*Coptothyris grayi* (Davidson, 1852) by Hatai 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.381.)

***Crania japonica* A.Adams, 1863**

Ann. Mag. Nat. Hist., ser. 3, vol. 11, p. 100, unfigured. (Figured by Davidson, 1871, Proc. Zool. Soc. London, vol. 39, pl. 30, figs. 6, 6a.)

Type: place of preservation unknown (not in NHM).

Gotto Islands, 71 fathoms.

Recent

(*Craniscus japonicus* (A.Adams, 1863) by Dall, 1920, Proc. U. S. Natl. Mus., vol. 57, no. 2314, p. 274.)

Remarks: The living specimen of *Craniscus japonicus* collected from Gotto, Japan, figured in Davidson, 1888, Trans. Linn. Soc.

London, Ser. 2, Zoology vol. 4, no. 3, pl. 27, figs 10-10b, 11 as *Crania japonica* A.Adams, 1863 is preserved in NHM, ZB3648.

***Craniscus japonicus* (A.Adams, 1863) see *Crania japonica* A.Adams, 1863.**

***Dallina elongata* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.322-323, pl. 6, figs. 69-70, 86.

Holotype: IGPS coll. cat. no. 56788.

Soyo-maru St. 575, 37°48'00" N., 138°18'00" E., 123 m.

Recent

***Dallina* (?) *miikensis* (Yokoyama, 1911) see *Terebratula miikensis* Yokoyama, 1911**

***Dallina miyatokoensis* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 315, pl. 34, figs. 1-7.

Syntype: IGPS coll. cat. no. 54081*.

Otsutsumi, Miyatoko-mura, Kurokawa-gun, Miyagi Prefecture, (Lat. 38°22'44" N., Long. 140°49'08" E.: Hatai, 1954).

Moniwa Formation

Lower Miocene

(*Dallina* (*Pegmathyris*) *miyatokoensis* (Hatai, 1936) by Hatai, 1938, Saito Ho-on Kai Mus., Res. Bull., no. 16, p. 225-226.)

***Dallina nanaoensis* Hayasaka and Hatai, 1950**

Short Pap., Inst. Geol. Paleont., Tohoku Univ., no. 2, p.44, text-fig.

Holotype: IGPS coll. cat. no. 72882.

Road-side cliff at Iwaya, Nanao-machi, Kashima-gun, Ishikawa Prefecture, (Lat. 37°01'03" N., Long. 136°57'04" E.).

Nanao Formation

Lower Miocene

***Dallina obessa* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 662, figs. 27, 28, 30, 36.

Holotype: IGPS coll. cat. no. 56322 (56222 in Hatai, 1940).

Soyo-maru St. 606, 35°50'40" N., 138°44'20" E., 117 m.

Recent

***Dallina* (*Pegmathyris*) *miyatokoensis* Hatai, 1936 see *Dallina miyatokoensis* Hatai, 1936**

***Dallina raphaelis* (Dall, 1870) see *Waldheimia raphaelis* Dall, 1870**

***Dallina raphaelis albida* (Dall, 1908) see *Waldheimia raphaelis albida* Dall, 1908**

***Dallina simosensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.321-322, pl. 3, figs. 28-31.

Syntype: IGPS coll. cat. no. 52860.

Inuwaka, Takakami-mura, Kaijo-gun, Chiba Prefecture, (Lat. 35°42' N., Long. 140°52'E.: Hatai, 1954).

Inuwaka Formation

Lower Pliocene

***Dallina triangularis* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 662, figs. 31-35, 1934.

Holotype: IGPS coll. cat. no. 56221.

Soyo-maru St. 419, 31°12'10" N., 129°49'45" E., 402 m.

Recent

***Diestothyris karafutoensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 495, pl. 78, figs. 9-11.

Holotype: IGPS coll. cat. no. 72531.

Third tributary of the Suisha River, Kosato, Rutaka-Machi, Rutaka-Gun, South Saghalin

Probably Pliocene

***Diestothyris tisimana* Nomura and Hatai, 1936**

Venus, vol. 6, no. 3, p. 132-134, text-figs.

Syntype: SHM coll. cat. no. 7342*.

Off the East coast of Paramusiru Island in the Tisima Group, Kurile Islands.

Recent

(*Diestothyris* (*Tisimania*) *tisimana* Nomura and Hatai, 1936, by Hatai, 1938, Saito Ho-on Kai Mus., Res. Bull., no. 16, p. 203.)

***Diestothyris* (*Tisimania*) *tisimana* Nomura and Hatai, 1936 see *Diestothyris tisimana* Nomura and Hatai, 1936**

***Discinisca kamikatetuensis* Yabe and Hatai, 1935**

Japan. Jour. Geol. Geogr., vol. 12, nos. 3-4, p. 95-96, pl. 14, figs. 11-12.

Syntype: IGPS coll. cat. no. 56236.

Plateau above Kamakatetu, Kikai-jima, Ryukyu Islands.

Ryukyu Limestone

Pleistocene

***Discinisca miyagiensis* Hatai and Hayasaka, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 60, p. 175-176, figs. 2a-b, 3a-b.

Holotype: IGPS coll. cat. no. 86423, Paratype: IGPS coll. cat. no. 86424 (same locality).

Road cut west of Kogota Town, Miyagi Prefecture.

Kogota Formation

Pliocene

***Discinisca* (?) *rikuzenensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p.187-188, pl. 8, fig. 26.

Holotype: IGPS coll. cat. no. 19444*.

Off Ayukawa, Rikuzen, 20 fathoms.

Recent

***Discinisca sendaiensis* Hatai and Hayasaka, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 60, p. 174-175, figs. 1a-c.

Holotype: IGPS coll. cat. no. 86421, Paratype: IGPS coll. cat. no. 86422 (same locality).

Railway cutting at Dainohara, along the Senzan Line, Sendai City, Miyagi Prefecture.

Tatsunokuchi Formation

Pliocene

***Discinisca sparselineata* Dall, 1920**

Proc. U. S. Natl. Mus., vol. 57, no. 2314, p. 279, unfigured.

Holotype: USNM Cat. No. MO 274131*. Paratype: USNM Cat. No. 274130*.

Holotype: Tokyo Bay; Paratype: Awaji, Fukura.

Recent

***Dyscolia crossei* Davidson var. *rotunda* Hayasaka, 1922**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 6, no. 2, p. 148-149, pl. 8, figs. 4a-c.

Holotype: IGPS coll. cat. no. 15876.

Manjouchi, Hitachi-Machi, Taga-Gun, Ibaragi Prefecture (Lat. 36°36'06" N., Long. 140°38'08" E.: Hatai, 1954).

Sukegawa Formation

Lower Pliocene

(*Terebratulina kiiensis* Dall and Pilsbry, 1891 by Hatai, 1954, Sci. Rep., Tokyo Kyoiku Daigaku, Sect. C, vol. 3, nos. 17-21, p. 84.)

Gryphus angularis* (Hayasaka, 1922) see *Laqueus angularis* Hayasaka, 1922**Gryphus? dalli* Cooper, 1983**

Smith. Cont. Paleobiol., no. 50, p. 264-265, pl. 3, figs. 33-38.

Holotype: USNM Cat. No. 204669*.

Joga Shima Light, off Hondo, Uraga Strait, Japan, 35°03'25" N., 139°37'42" E., 533m.

Recent

Remarks: This specimen was a paratype of *Gryphus tokionis* Dall, 1920, but because the differences in shell shape and loop morphology, Cooper created a new species.

Gryphys davidsoni* (A.Adams, 1867) see *Terebratulina davidsoni* A.Adams, 1867**Gryphus hanzawai* Yabe and Hatai, 1935**

Japan. Jour. Geol. Geogr., vol. 12, nos. 3-4, p. 96, pl. 14, figs. 4, 5, 8-10.

Syntype: IGPS coll. cat. no. 52854.

Plateau above Kamikatetsu, Kikai-jima, Ryukyu Islands.

Ryukyu Limestone

Pleistocene

***Gryphus insolitus* Hatai, 1941**

Japan. Jour. Geol. Geogr., vol. 18, no. 3, p. 118, pl. 8, figs. 1-4.

Syntype: IGPS coll. cat. no. 64427.

Southern side of Moto-Wakuya-Mura, Toda-Gun, Miyagi Prefecture, (Lat. 38°32'01" N., Long. 141°08'04" E.: Hatai, 1954).

Oido Formation

Miocene

***Gryphus kurotakiensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 495, pl. 78, figs. 12, 13, 18.

Holotype: IGPS coll. cat. no. 28276.

Kurotaki, Oriki-Zawa, Kameyama-Mura, Kimitsu-Gun, Chiba Prefecture, (Lat. 35°12'08" N., Long. 140°07'02" E.: Hatai, 1954).

Kurotaki Formation

Pliocene

***Gryphus radiata* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 305, pl. 35, fig. 14.

Holotype: IGPS coll. cat. no. 52823.

Inuwaka, Takakami-Mura, Kaijo-Gun, Chiba Prefecture, (Lat. 35°42' N., Long. 140°52' E.: Hatai, 1954).

Inuwaka Formation

Pliocene

***Gryphus schencki* Hayasaka and Hatai, 1950**

Short Pap., Inst. Geol. Paleont., Tohoku Univ., no. 2, p.43-44, text-figure.

Holotype: IGPS coll. cat. no. 72539*.

Road side cliff at Iwaya, Nanao-machi, Kashima-gun, Ishikawa Prefecture, (Lat. 37°01'03" N., Long. 136°57'04" E.).

Nanao Formation

Lower Miocene

Gryphus stearnsii* (Dall and Pilsbry, 1891) see *Terebratulina stearnsii* Dall and Pilsbry, 1891**Gryphus tokionis* Dall, 1920**

Proc. U. S. Natl. Mus., vol. 57, no. 2314, p.319, unfigured.

Holotype: USNM Cat. No. MO 107731*.

Japan, Gulf of Tokio (Tokyo), Off Uki Shima, 169 fathoms, USBF St. 3661.

Recent

***Hemithyris braunsi* Hayasaka, 1928**

Japan. Jour. Geol. Geogr., vol. 6, 49-50, unfigured. (Figured in Hatai, 1936, Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 295-296, pl. 35, figs. 15, 20.)

Holotype: IGPS coll. cat. no. 15893*, 54367*.

Miyata, Hitachi-machi, Taga-gun, Ibaragi Prefecture, (Lat. 36°36'06" N., Long. 140°38'08" E.: Hatai, 1954).

Sukegawa Formation

Pliocene

Remarks: Hayasaka (1928) and Hatai (1936) did not site the catalogue no. of the type. Hatai (1940) indicated that the holotype is IGPS coll. cat. no. 15893*, however, in the last catalogue of type specimens (1961), no. 54367* is written as the type. Both specimens were collected from Miyata, Hitachi-machi, Tago-gun, Ibaragi Prefecture.

***Hemithyris peculiaris* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 165-167, pl. 18, figs. 17, 18.

Holotype: SHM coll. cat. no. 7362*.

A small cliff about 500 meters from the entrance to Iwaizawa, a large valley west of the Ukibuta railway station, Yazawagi-mura, Hiraga-gun, Akita Prefecture, (Lat. 39°19' N., Long. 140°20' E.: Hatai, 1954).

Yazawagi Formation

Miocene

***Hemithyris pellucida* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 661, figs. 1-4.

Holotype: IGPS coll. cat. no. 56219*.

Soyo-maru St. 223, Lat. 33°13'50" N., Long. 133°38'40" E., 311m.

Recent

Hemithyris psittacea woodwardi* (A.Adams, 1863) see *Rhynchonella woodwardii*, A.Adams, 1863**Isumithyris kazusaensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 498, pl. 78, figs. 5-8.

Syntype: IGPS coll. cat. no. 25679.

North of Unobe, Oikawa-Mura, Isumi-Gun, Chiba Prefecture.

Kiwada Formation

Pliocene

***Japanithyris dubius* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 315, pl. 6, figs. 8, 9.

Holotype: IGPS coll. cat. no. 62186*.

Soyo-maru St. 294, 30°55'40" N., 130°55'50" E., 102 m.

Recent

(*Campages dubius* (Hatai, 1940) by Cooper, 1970, Jour. Paleont. vol. 44, no. 5, p. 898-904.)

Remarks: In 1970, Cooper proposed that the genus *Japanithyris* is a junior synonym of *Campages*. He did not re-describe *Campages dubius* in his paper, however, this species should also be assigned to *Campages*.

***Japanithyris nipponensis* Yabe and Hatai, 1935**

Japan. Jour. Geol. Geogr., vol. 12, nos. 3-4, p. 98, pl. 14, figs. 1-3, 19-21.

Holotype: IGPS coll. cat. no. 56233*.

Soyo-maru St. 294, 30°55'40" N., Long. 130°55'50" E., 102 m.

Recent

(*Campages nipponensis* (Yabe and Hatai, 1935) by Cooper, 1970, Jour. Paleont. vol. 44, no. 5, p. 901.)

***Jolonica elliptica* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 13-14, pl. 3, figs. 65-69.

Holotype: USNM Cat. No. MO 549324c*. Figured Paratypes: USNM Cat. No. MO 549324a*. Unfigured Paratypes: USNM Cat. No. MO 549324b*, d-g* (same locality).

Cliff at top of south bank of small reentrant into which a small stream falls, about 0.1 mile southeast of bend in Highway 64 near east edge of Gushichan, Ryukyu Islands Okinawa, USGS Loc. 17460.

Naha Limestone

Pliocene

***Jolonica (Kamoica) (?) chibaensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 497, pl. 78, figs. 19, 20.

Syntype: IGPS coll. cat. no. 72533*.

Northern valley of Higashi-Owada, Kimitsu-Gun, Chiba Prefecture.

Neogene

***Jolonica (Kamoica) iduensis* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 313-314, pl. 35, figs. 10-13, 16-18.

Holotype: IGPS coll. cat. no. 56217*.

Shirahama, Shirahama-Mura, Kamo-Gun, Shizuoka Prefecture, (Lat. 34°41'25" N., Long. 138°58'00" E.: Hatai, 1954).

Shirahama Formation

Lower Miocene

***Jolonica macneili* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 14-15, pl. 4, figs. 18-32.

Holotype: USNM Cat. No. MO 549323d* (loc. 17633). Figured Paratypes: USNM Cat. No. MO 549313a* (loc. 17482), 549323a*, c* (loc. 17633). Unfigured Paratypes: USNM Cat. No. MO 549313b* (loc. 17482).

USGS Loc. 17633, low cliff at canyon head just east of trail pass through ridge about 0.4 mile southwest of China, Ryukyu Islands, Okinawa

Shinzato Tuff

Pliocene

USGS Loc. 17482, section in both abandoned road cut and new road cut at Chinen-misaki.

Chinen Sand

Early Pleistocene

***Jolonica nipponica* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 662, figs. 16-18, 25.

Holotype: IGPS coll. cat. no. 56225*.

Off Ashizuri-zaki, Soyo-maru St. 334, 32°37'00" N., 132°56'30"

E., 91 m.
Recent

***Jolonica ryukyuensis* Yabe and Hatai, 1935**

Japan. Jour. Geol. Geogr., vol. 12, nos. 3-4, p. 97, pl. 14, figs. 6-7, 14.

Holotype: IGPS coll. cat. no. 52874*.

Plateau above Kamikatetsu, Kikai-jima, Ryukyu Islands.

Ryukyu Limestone

Pleistocene

***Kikaithyris hanzawai* (Yabe, 1932) see *Pictothyris hanzawai* Yabe, 1932**

***Kurakithyris nipponensis* (Yokoyama, 1910) see *Terebratella nipponensis* Yokoyama, 1910**

***Kurakithyris quantoensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 496, pl. 78, figs. 24-26.

Holotype: IGPS coll. cat. no. 15436*.

Sea-cliff immediately northeast of Koshiba, Kanazawa-machi, Totsuka-ku, Yokohama-shi, Kanagawa Prefecture, (Lat. 35°20'05" N., Long. 139°38'06" E.: Hatai, 1954).

Koshiba Formation

Lower Pliocene

***Laqueus angularis* Hayasaka, 1922**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 6, no. 2, p. 153-154, pl. 8, figs. 8-12.

Syntype: IGPS coll. cat. no. 52822.

Inuwaka, Takakami-mura, Kaijo-gun, Chiba Prefecture, (Lat. 35°42' N., Long. 140°52' E.: Hatai, 1954).

Inuwaka Formation

Pliocene

(figs. 8-10: *Gryphus angularis* (Hayasaka, 1922); figs. 11-12: *Laqueus quadratus* Yabe and Hatai, 1934, by Hatai, 1936, Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 304-305, 318-319.)

***Laqueus astartaeformis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 366-367, pl. 3, figs. 12-13.

Holotype: IGPS coll. cat. no. 15427*.

Nagamine, Fukuoka-machi, Ninohe-gun, Iwate Prefecture, (Lat. 40°17' N., Long. 141°17'48" E.: Hatai, 1954).

Suenomatsuyama Formation

Miocene

***Laqueus blanfordi* (Dunker, 1882) see *Terebratula blanfordi* Dunker, 1882**

***Laqueus concentricus* Yabe and Hatai, 1936**

Proc. Japan. Acad., vol. 12, no. 2, p. 44, figs. 11-14.

Holotype: IGPS coll. cat. no. 58891.

Soyo-maru St. 619, 39°16'27" N., Long. 139°29'15" E., 338 m.

Recent

***Laqueus elongatus* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 15-16, pl. 3, figs. 40-45.

Holotype: USNM Cat. No. MO 549309* (loc. 17462).

Unfigured Paratypes: USNM Cat. No. MO 549339a-e* (loc. 17463).

USGS Loc. 17462, lower part of Limestone forming main part of sea cliff that forms a headland about 0.8 mile south of Gushichan, Ryukyu Islands, Okinawa. USGS Loc. 17463, high Limestone seacliff forming a small reentrant about one mile northeast of Mabuni, Ryukyu Islands, Okinawa.

Naha Limestone

Pliocene

***Laqueus hanawensis* Hayasaka, 1929**

Japan. Jour. Geol. Geogr., vol. 6, p. 108-110, pl. 22, figs. 1-5.

Type: place of preservation unknown.

Hanawagawa-mura, Yamato-gun, Ugo.

Wakimoto Sandy Shales

Pliocene

Remarks: Hatai (1940) wrote the holotype were probably preserved in the collection of the Imperial Geological Survey of Japan.

***Laqueus japonicus* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 663, figs. 19-21, 26.

Holotype: IGPS coll. cat. no. 47853.

Bought at Enoshima, Sagami, probably dredged by the fishermen from Sagami Bay.

Recent

***Laqueus kosibensis* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 319-320, pl. 34, figs. 10-12.

Holotype: IGPS coll. cat. no. 15426*.

Koshiba, Kanazawa-machi, Totsuka-ku, Kanagawa Prefecture, (Lat. 35°20'05" N., Long. 139°38'06" E.: Hatai, 1954).

Koshiba Formation

Pliocene

***Laqueus morsei* Dall, 1908**

Nautilus, vol. 22, no. 3, p. 29, unfigured.

Syntype: USNM Cat. No. MO 110800*.

Japan Sea, 122 fathoms, St. 4860 of U. S. S. Albatross party in 1906.

Recent

***Laqueus orbicularis* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 663, figs. 41-44.

Holotype: IGPS coll. cat. no. 56234.

Tsushima Strait, Soyo-maru St. 451, 32°43'00" N., Long. 128°11'45" E., 187 m.

Recent

***Laqueus pacificus* Hatai, 1936**

Rec. Ocean. Wks. Japan, vol. 8, no. 1, p. 15-16, text-fig.

Holotype: IGPS coll. cat. no. 56292.

Husa-maru St. 45, off Arakawa, Bosyu, 23m.

Recent

***Laqueus pallidus* Hatai, 1939**

Rec. Ocean. Wks. Jap., vol. 10, no. 2, p. 103, figs. 1-3.

Holotype: Seto Marine Biological Laboratory, Kyoto Univ., no. ?.

Seto-Uchi, exact locality not certain.

Recent

***Laqueus proprius* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 663, figs. 5-9, 14.

Holotype: IGPS coll. cat. no. 56218.

Northeast of Tsushima, Soyo-maru St. 487, 35°27'30" N., Long. 130°35'35" E., 194 m.

Recent

***Laqueus quadratus* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 662-663, figs. 10-13, 15.

Holotype: IGPS coll. cat. no. 56231*.

West Coast of Kyusyu, Soyo-maru St. 421, 31°25'00" N., Long. 129°54'00" E., 307 m.

Recent

***Laqueus rubellus* (Sowerby, 1846) see *Terebratulina rubella* Sowerby, 1846**

***Laqueus rubellus* (Sowerby), var. *obessus* Yabe and Hatai, 1936**

Proc. Japan. Acad., vol. 12, no. 2, p. 45-46, figs. 7-10.

Holotype: IGPS coll. cat. no. 58651.

Tugaru-strait, Soyo-maru St. 652, 41°27'08" N., Long. 140°23'00" E., 110m.

Recent

***Laqueus suffusus* Dall, 1870**

Am. Jour. Conch., vol. 6, pt. 2, no. 2, p. 125-126, pl. 7, fig. g, h, s.

Syntype: USNM Cat. No. MO 011784a*, MO 011784* (same locality).

Wharf at Yokohama, Japan

Recent

(*Laqueus rubellus* (Sowerby, 1846) by Dall, 1873, Proc. Acad. Nat. Sci. Phil., Ser. 3, p. 186.)

***Lingula akabiraensis* Hayasaka and Hatai, 1956**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 23, p. 219-220, text-figure.

Holotype: DGS coll. cat. no. 3001, Paratype: DGS coll. cat. no.

3001 (same locality).

Akabira, Takikawa-machi, Sorachi-gun, Ishikari Province, Hokkaido, 125m underground.

Poronai Formation

Oligocene

***Lingula hirobutiensis* Hatai and Kitagawa, 1941**

Bull. Biogeogr. Soc. Japan, vol. 11, no. 6, p. 28, text-fig.

Syntype: IGPS coll. cat. no. 64446*.

Hill top behind Hirobuchi-mura, Mono-gun, Miyagi Prefecture.

Sue Formation

Pliocene

***Lingula jaspidea* A.Adams, 1863**

Ann. Mag. Nat. Hist., Ser. 3, vol. 11, p. 101, unfigured. (Figured in Davidson, 1871, Proc. Zool. Soc. London, vol. 39, pl. 30, fig. 3)

Type: place of preservation unknown (not in NHM).

Mososeki, Japan, 7 fathoms.

Recent

Remarks: Specimen collected from Japanese waters, figured in Davidson, 1888, Trans. Linn. Soc. London, Zoology vol. 4, no. 3, pl. 28, fig. 24 is preserved in NHM, ZB3601. The Japanese species is said to be almost indistinguishable from the *Lingula dumortieri* from the Coralline Crag of Suffolk and of Belgium (Davidson, 1871, 1888; Hatai, 1940).

***Lingula lepidula* A.Adams, 1863**

Ann. Mag. Nat. Hist., Ser. 3, vol. 11, p. 101, unfigured. (Figured in Davidson, 1871, Proc. Zool. Soc. London, vol. 39, pl. 30, fig. 4)

Holotype: picture only in NHM, ZB12573.

Seto-Uchi, Akasi, Japan, 10 fathoms.

Recent

Remarks: It may yet prove to be a young form of a certain larger species of *Lingula anatina*. Davidson is also in the opinion that this species might be a young of *Lingula anatina* (Hatai, 1940).

***Lingula nipponica* Hayasaka, 1931**

Kwagaku, vol. 1, no. 9, p. 364, unfigured.

Type: place of preservation unknown.

Mutsu Bay, Northern Japan

Recent

Remarks: Hatai (1940) wrote the type was probably preserved in the collection of either the Institute of Biology, Tohoku Imperial University or its attached Marine Biological Station at Asamusi, or in the Department of Zoology of the Taihoku Imperial University.

***Lingula shantungensis* Hatai, 1937**

Bull. Biogeogr. Soc. Japan, vol. 7, no. 13, pp. 322-323, text-figs., 5-7.

Holotype: IGPS coll. cat. no. 61311.

Eastern coast of Shantung, China.

Recent

***Lingula shimakurai* Hatai and Kitagawa, 1941**

Bull. Biogeogr. Soc. Japan, vol. 11, no. 6, p. 28, text-fig.

Holotype: IGPS coll. cat. no. 64445*.

Hill top behind Hirobuchi-mura, Mono-gun, Miyagi Prefecture.

Sue Formation

Pliocene

***Lingula smaragdina* A. Adams, 1863**

Ann. Mag. Nat. Hist., Ser. 3, vol. 11, p. 101, unfigured. (Figured in Davidson, 1871, Proc. Zool. Soc. London, vol. 39, pl. 30, fig. 2)

Holotype: picture only in NHM, ZB12572.

Yobuko, Japan, 10 fathoms.

Recent

Remarks: This species resembles certain varietal forms of *Lingula anatina*, and may prove to be a young of it (Hatai, 1940).***Macandrevia delicatula* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 75-76, pl. 14, figs. 1-2, 5-6.

Syntype: IGPS coll. cat. no. 54093*.

Kamayashiki, Tomai-mura, Ninohe-gun, Iwate Prefecture, (Lat. 40°17'05" N., Long. 141°16'00" E.: Hatai, 1954).

Sueno-matsuyama Formation

Miocene

***Macandrevia nipponica* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 172-175, pl. 18, figs. 6-7.

Holotype: SHM coll. cat. no. 7182*.

A small cliff about 500m from the entrance to Iwaizawa, a large valley west of the Ukibuta railway station, Yazawagi-mura, Hiraga-gun, Akita Prefecture, (Lat. 39°19' N., Long. 140°20' E.: Hatai, 1954)

Yazawagi Formation

Miocene

***Magasella gouldii* Dall, 1871**

Proc. Zool. Soc. London, p.307-308, pl. 31, figs.11, 11a-c.

Holotype: USNM Cat. No. MO 110885*.

Hakodate, Japan.

Recent

(Coptothyris grayi (Davidson, 1852))Remarks: This species was first figured by Davidson in 1871 as *Magasella gouldii* Dall, MS, and was subsequently described by Dall in the same year, based on a specimen in the juvenile *Magasella* stage.***Magellania lenticularis* Deshayes var. *innaiensis* Hayasaka, 1922**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 6, no. 2, p. 156-157, pl.

8, fig. 17.

Holotype: IGPS coll. cat. no. 15878.

600m underground in the Innai mining district, Innai-machi, Okachi-gun, Akita Prefecture, (Lat. 39°03' N., Long. 140°25' E., precise locality unknown: Hatai, 1954)

Innai Formation

Miocene

(Terebratalia innaiensis (Hayasaka, 1922) by Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 296-297.)***Magellania lenticularis* Deshayes var. *tenuis* Hayasaka, 1922**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 6, no. 2, p. 155-156, pl. 8, fig. 15, 16.

Holotype: IGPS coll. cat. no. 15879.

Sabusawa, Miyazaki-mura, Kami-gun, Miyagi Prefecture, (Lat. 38°37' N., Long. 140°40' E., precise locality unknown: Hatai, 1954).

Moriwa Formation

Lower Miocene

(Terebratalia tenuis (Hayasaka, 1922) by Nomura and Hatai, 1935, Saito Ho-on Kai Mus., Res. Bul., no. 5, p. 66-67.)***Nipponithyris* (*Miyakothyris*) *subovata* Hatai, 1936 see *Nipponithyris subovata* Hatai, 1936*****Nipponithyris nipponensis* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 9, p.588, figs. 2, 3.

Syntype: IGPS coll. cat. no. 58862*.

West Coast of Kyusyu, Soyo-maru St. 412, 31°02' N., 130°33' E., 219m.

Recent

***Nipponithyris notoensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 338-339, pl. 3, figs. 16, 25.

Holotype: IGPS coll. cat. no. 54092*.

Shimazaki, Himi-machi, Toyama Prefecture, (Lat. 36°50'06" N., Long. 139°59'07" E.: Hatai, 1954).

Himi Formation

Pliocene

***Nipponithyris subovata* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 321-322, pl. 34, figs. 8, 9, 13-15, 21.

Syntype: IGPS coll. cat. no. 54096*.

Otsutsumi, Miyatoko-mura, Kurokawa-gun, Miyagi Prefecture, (Lat. 38°22'44" N., Long. 140°49'08" E.: Hatai, 1954).

Moriwa Formation

Lower Miocene

(Nipponithyris (*Miyakothyris*) *subovata* Hatai, 1936 by Hatai, 1938, Saito Ho-on Kai Mus., Res. Bull., no. 16, p. 237-238.)***Nipponithyris* (?) *s-nisiyamai* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 497-498, pl. 78, figs. 17, 22.

Holotype: IGPS coll. cat. no. 72535*.

River cliff north of Taya, Iwami-Sannai-Mura, Kawabe-Gun, Akita Prefecture, (Lat. 39°42' N., Long. 140°17' E.: Hatai, 1954).

Taya Formation

Miocene

***Nipponithyris tayaensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 497, pl. 78, figs. 27, 28.

Holotype: IGPS coll. cat. no. 72534*.

River cliff north of Taya, Iwami-Sannai-Mura, Kawabe-Gun, Akita Prefecture, (Lat. 39°42' N., Long. 140°17' E.: Hatai, 1954).

Taya Formation

Miocene

***Nipponithyris yabei* Hatai, 1938**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 38, text-figure.

Syntype: IGPS coll. cat. no. 62478*.

Hanawa, Hanawagawa-mura, Yamamoto-gun, Akita Prefecture, (Lat. 40°17' N., Long. 140°05' E.: Hatai, 1954)

Hanawa Formation.

Miocene

***Pictothyris elegans* Yabe and Hatai, 1936**

Proc. Japan. Acad., vol. 12, no. 2, p. 44, figs. 1-4.

Holotype: IGPS coll. cat. no. 56776*.

Vicinity of Is. Oki, Soyo-maru St. 520, 35°43'00" N., 133°07'30" E., 75m.

Recent

***Pictothyris elegans endoi* Yabe and Hatai, 1941**

Jour. Geol. Soc. Japan, vol. 48, no. 577, p. 493, pl. 13, figs. 1-4.

Syntype: IGPS coll. cat. no. 65017*.

Unoki, Yoshida-mura, Kagoshima-gun, Kagoshima Prefecture, (Lat. 31°42' N., Long. 130°32' E.: Hatai, 1954)

Yoshida Formation

Pleistocene

***Pictothyris fortipictus* Yabe and Hatai, 1941**

Jour. Geol. Soc. Japan, vol. 48, no. 577, p. 492-493, pl. 13, figs. 1-4.

Syntype: IGPS coll. cat. no. 65016*.

North of Kuwano-maru, Yoshida-mura, Kagoshima-gun, Kagoshima Prefecture, (Lat. 31°42' N., Long. 130°32' E.: Hatai, 1954)

Yoshida Formation

Pleistocene

***Pictothyris hanzawai* Yabe, 1932**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 15, no. 3, p. 196-197, pl. 13, figs. 10-16.

Syntype: IGPS coll. cat. no. 29435*.

Plateau above Kamikatetsu, Kikai-jima, Ryukyu Islands.

Ryukyu Limestone

Pleistocene

(*Kikaithyris hanzawai* (Yabe, 1932) by Yabe and Hatai, 1941, Jour. Geol. Soc. Japan, vol. 48, no. 577, p. 492, 495.)

***Pictothyris laqueiformis* Yabe and Hatai, 1936**

Proc. Japan. Acad., vol. 12, no. 2, p. 44, figs. 5-6.

Holotype: IGPS coll. cat. no. 58874*.

Soyo-maru St. 428, 32°17'30" N., 129°44'15" E., 119m.

Recent

(*Pictothyris picta* (Dillwyn, 1817))

Remarks: This species was described based on a single specimen, which is a juvenile of *Pictothyris picta*.

***Pictothyris picta* (Dillwyn, 1817) see *Anomia picta* Dillwyn, 1817**

***Pictothyris rubella* Yabe and Hatai, 1946**

Proc. Japan. Acad., vol. 22, no. 4, p. 103-104, Figs. 1, 2.

Holotype: IGPS coll. cat. no. ?.

Near Tomioka, Kyusyu.

Recent

***Pictothyris tanegashimaensis* Hayasaka, 1973**

Sci. Rep., Tohoku Univ., 2nd Ser., Spec. Vol., no. 6, p. 107-108, pl. 7, 6a-c, 7a-c.

Holotype: ESK, Reg. No. F-6001, Paratype: ESK, Reg. No. F-6002.

Small outcrop on the beach near the trifurcation of the road about 300 meters west of the Ueho Primary School.

Kumage Group

Paleogene

***Platidia japonica* Dall, 1920**

Proc. U. S. Natl. Mus., vol. 57, no. 2314, p. 333, unfigured.

Syntype: USNM Cat. No. MO 110966*.

Off Hondo, 65 fathoms, Ose Zaki, S55W, 2.25 mi., USBF St. 3708.

Recent

***Rhynchonella döderleini* Davidson, 1886**

Ann. Mag. Nat. Hist. Ser. 5, vol. 17, p. 1-3, text-fig.

Type: place of preservation unknown (not in NHM).

Sagami Bay, Japan, about 160 fathoms.

Recent

(*Tegulorhynchia döderleini* (Davidson, 1886) by Chapman and Crespín, 1923, Proc. Roy. Soc. Victoria (New Series), vol. 35, p. 172, 186-187.)

***Rhynchonella lucida* Gould, 1860**

Proc. Bost. Soc. Nat. Hist., vol. 7, p. 323-324, unfigured.

Type: place of preservation unknown.

Japan Coast, 30°35' N., 130°40' E., 110 fathoms.

Recent

(*Basiliola lucida* (Gould, 1861) by Cooper, 1959, Smith. Miscell. Coll., vol. 139, no. 5, p. 29.)

Remarks: The specimens of *Basiliola lucida* collected from Japan, figured in Davidson, 1887, Trans. Linn. Soc. London, Ser. 2, Zoology vol. 4, no. 2, pl. 24 as *Rhynchonella lucida* Gould, 1860 were preserved in NHM, ZB3659 (fig. 14) and ZB3660 (fig. 15).

***Rhynchonella woodwardii*, A.Adams, 1863**

Ann. Mag. Nat. Hist., ser. 3, vol. 11, p. 100, unfigured.

Type: place of preservation unknown (not in NHM).

Rifunsiri, 35 fathoms.

Recent

(*Hemithyris psittacea woodwardi* (A.Adams, 1863) by Schuchert, 1911, Bull. Geol. Soc. Amer., vol. 22, p. 269.)

Remarks: At least three specimens of *Hemithyris psittacea woodwardi* collected by A.Adams were preserved in NHM. Two of them were figured in Davidson, 1887, Trans. Linn. Soc. London, Ser. 2, Zoology vol. 4, no. 2, pl. 24, fig. 12 (=ZB3661), 13-13c (=ZB3662) as *Rhynchonella psittacea woodwardi*. Specimen ZB166 was purchased by Mr. Geale. The locality is written only as "from Recent Seas, Japan" in each of the specimen labels.

***Rhytirhynchia hataiana* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap. no. 314-A, p.8-9, pl. 1, figs. 1-16.

Holotype: USNM Cat. No. MO 549307* (loc.17572). Figured Paratypes: USNM Cat. No. MO 549308a* (loc.17572), 549311b* (loc.17516). Unfigured Paratypes: USNM Cat. No. MO 549308b* (loc.17572), 549311a* (loc.17516).

USGS Loc.17572, from Excavation for tombs on the beach one mile north of Shoshi, Nakijin-Mura, Ryukyu Islands, Okinawa; Loc. 17516, Quarry on north side of Highway 30, about 0.3 mile northeast of junction of Highways 1 and 30, Ryukyu Islands, Okinawa.

Naha Limestone

Pliocene

***Shimodaia pterygiota* MacKinnon, Saito and Endo, 1997**

Paleontological Research, vol. 1, no. 3, p.227, fig. 2, 1-4.

Holotype: UMUT RB27390*, Paratypes: UMUT RB27391*, RB27392*.

Off Shimoda, 34°37'68"N, 138°57'70"E, 65-71m.

Recent

***Tanakura tanakura* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 322-324, pl. 35, figs. 1-9.

Holotype: IGPS coll. cat. no. 15900*.

Tanagura-machi, Higashi-Shirakawa-gun, Fukushima Prefecture, (Lat. 37°02' N., Long. 140°24'05" E.: Hatai, 1954).

Tanagura Formation

Miocene

***Tegulorhynchia döderleini* (Davidson, 1886) see *Rhynchonella döderleini* Davidson, 1886**

***Terebratalia asanoi* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 191-192, pl. 19, figs. 7-9.

Holotype: IGPS coll. cat. no. 58692.

River cliff north of Taya, Iwami-Sannai-mura, Kawabe-gun, Akita Prefecture, (Lat. 39°42' N., Long. 140°17' E.: Hatai, 1954).

Taya Formation

Miocene

***Terebratalia bialata* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bull., no. 10, p. 190-191, pl. 19, figs. 3-6.

Holotype: IGPS coll. cat. no. 58693*.

River cliff north of Taya, Iwami-Sannai-mura, Kawabe-gun, Akita Prefecture, (Lat. 39°42' N., Long. 140°17' E.: Hatai, 1954).

Taya Formation

Miocene

***Terebratalia gouldii* (Dall, 1891) see *Terebratella gouldii* Dall, 1891**

***Terebratalia hayasakai* Hatai, 1938**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 37, text-figure.

Holotype: IGPS coll. cat. no. 62490*.

Hanawa, Hanawagawa-mura, Yamamoto-gun, Akita Prefecture, (Lat. 40°17' N., Long. 140°05' E.: Hatai, 1954).

Hanawa Formation

Miocene

***Terebratalia innaiensis* (Hayasaka, 1922) see *Magellania lenticularis* Deshaeys var. *innaiensis* Hayasaka, 1922**

***Terebratalia karatsuensis* Inoue, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 252-253, pl. 39, 1a-c, 2a-c.

Syntype: Geol. Institute, Kyusyu University No.?

A quarry about 1000 meters south of Hieda, Kitahata-mura, Higashimatsura-gun, Saga Prefecture.

Sari Sandstone, Kishima Group

Upper Oligocene

***Terebratalia kennedyoides* Ozaki, 1958**

Bull. Nat. Sci. Mus., vol. 4, no. 1, p. 174, pl. 7, figs. 6-8.

Holotype: NSM coll. cat. no. 4385.

Beach at the western end of Tokawa-machi, Tyoshi City.

Na-arai Formation

Pliocene

***Terebratalia koyamai* Makiyama, 1927**

Chikyū (The Globe), vol. 8, no. 3, p. 184-185, pl. 3, fig. 6.

Holotype: Inst. Geol. Min., Kyoto Univ., no. ?

Shigarami, Kamiminouchi-gun, Nagano Prefecture (Lat. 36°40' N., Long. 138°04' E.: Hatai, 1954).

Shigarami Formation

Pliocene

(*Coptothyris excelsa koyamai* (Makiyama), 1927 by Hayasaka, 1973, Sci. Rep., Tohoku Univ., 2nd Ser., Spec. Vol., no. 6, p. 104-105.)

***Terebratalia pacifica* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 76-77, pl. 14, figs. 7-10, 15-16.

Holotype: IGPS coll. cat. no. 52842*.

Kamayashiki, Tomai-mura, Ninohe-gun, Iwate Prefecture, (Lat. 40°17'05" N., Long. 141°16' E.: Hatai, 1954).

Suenomatsuyama Formation

Miocene

Terebratalia (Pacifithyris) xanthica* (Dall, 1922) see *Terebratalia xanthica* Dall, 1922**Terebratalia radiata* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 1-2, p. 77-78, pl. 14, figs. 3, 4, 29.

Syntype: IGPS coll. cat. no. 22567*.

Kamimaesawa, Tomai-mura, Ninohe-gun, Iwate Prefecture, (Lat. 40°16'08" N., Long. 141°17'05" E.: Hatai, 1954).

Suenomatsuyama Formation

Miocene

***Terebratalia sendaica* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 307-309, pl. 34, figs. 24-25.

Holotype: IGPS coll. cat. no. 54086.

Otsutsumi, Miyatoko-Mura, Kurokawa-Gun, Miyagi Prefecture, (Lat. 38°22'44" N., Long. 140°49'08" E.: Hatai, 1954).

Moniwa Formation

Miocene

***Terebratalia smithi* Arnold var. *brevis* Hayasaka, 1922**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 6, no. 2, p. 151, pl. 8 (not pl. 7), fig. 7.

Type: place of preservation unknown.

Exact locality unknown, Probably near Nanao-machi, Kashima-gun, Ishikawa Prefecture (Lat. 37°02' N., Long. 136°58' E.: Hatai, 1954).

Nanao Formation (?)

Miocene

(*Coptothyris grayi* (Davidson, 1852) by Hatai 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 383.)

Terebratalia tenuis* (Hayasaka, 1922) see *Magellania lenticularis* Deshayes var. *tenuis* Hayasaka, 1922**Terebratalia xanthica* Dall, 1920**

Proc. U. S. Nat. Mus., vol. 57, no. 2314, p. 346-347, unfigured.

Holotype: USNM Cat. No. MO 206783*.

Bomasiri Shima, off north end of Rebuton to S19E, 6.6 miles, USBF St. 4996, 45°35'00"N., 140°55'00"E.

Recent

(*Terebratalia (Pacifithyris) xanthica* (Dall, 1922) by Hatai, 1938, Saito Ho-on Kai, Res. Bull., no. 16, p. 216-218.)

***Terebratella (?) excelsa* Yokoyama, 1923**

Jour., Coll. Sci., Imp. Univ. Tokyo, vol. 44, art. 7, p. 8, pl. 1, figs. 3-4.

Figured Syntypes: UMUT CB21711-21712*. Unfigured Syntypes: 21713-21714*.

Sea cliff near the brook flowing at the western end of Seikiho, Saishu Island.

Upper Pliocene

(*Coptothyris excelsa* (Yokoyama), 1923 by Hayasaka, 1973, Sci. Rep., Tohoku Univ., 2nd Ser., Spec. Vol., no. 6, p. 104-105.)

***Terebratella gouldii* Dall, 1891**

Proc. Acad. Nat. Sci. Phil., Ser. 3, p. 167, pl. 4, figs. 4-5.

Holotype: place of preservation unknown (not in USNM).

Eastern coast of Japan, between Yeddo (Tokyo) and Oshima.

Recent

(*Terebratalia gouldii* (Dall, 1891) by Dall, 1895, Proc. U. S. Nat. Mus., vol. 17, no. 1032, p. 729.)

***Terebratella mariae* A.Adams, 1860**

Ann. Mag. Nat. Hist., ser. 3, vol. 5, p. 412-413, unfigured.

Holotype: place of preservation unknown (not in NHM).

Japan, Uruga 21 fathoms, Gotto 48 fathoms, Satanomosaki, 55 fathoms.

Recent

(*Campages mariae* (A.Adams), 1860 by Cooper, 1970, Jour. Paleont., vol. 44, no. 5, p. 900)

Remarks: In the first description of *Terebratella mariae* (1860), Adams did not site the type locality of this species. In his 1863 paper, he only listed three habitats of *T. mariae*, therefore it is not clear which one is the type locality. Dall, 1920 and Hatai, 1940 sited Uruga as the type locality because it was listed first among the three. The living specimen of *Campages mariae* collected from Satonomosaki, Japan, figured in Davidson, 1887, Trans. Linn. Soc. London, Ser. 2, Zoology vol. 4, no. 2, pl. 15, figs. 13, 14 as *Terebratella mariae* A.Adams, 1860 is preserved in NHM (cat. no. ZB4333).

***Terebratella nipponensis* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, no. 201, p. 280, pl. 5, figs. 13-16.

Holotype: UMUT CB20712*, Paratype, IGPS coll. cat. no. ?.

Koshiba, Kanazawa-machi, Totsuka-ku, Yokohama-shi, Kanagawa Prefecture, (Lat. 35°20'05" N., Long. 139°38'06" E.: Hatai, 1954).

Koshiba Formation

Pliocene

(*Kurakithyris nipponensis* (Yokoyama, 1910) by Hatai, 1946, Proc. Jap. Acad., vol. 22, no. 4, p. 99-100.)

***Terebratula blanfordi* Dunker, 1882**

Index Molluscorum Maris Japonici, p. 251, pl. 14, figs. 4-6.

Type: place of preservation unknown.

Near Wakayama, Japan.

Recent

(*Laqueus blanfordi* (Dunker, 1882) by Schuchert, 1911, Bull. Geol. Soc. Amer., vol. 22, p. 269.)

Remarks: The specimen of *Laqueus blanfordi* collected from Wakayama, Japan, figured in Davidson, 1886, Trans. Linn. Soc. London, Ser. 2, Zoology vol. 4, no. 2, pl. 15, fig. 10 as *Terebratella blanfordi* Dunker, 1882 is preserved in NHM (cat. no. ZB4418).

***Terebratula? dalli* Davidson, 1878**

Proc. Roy. Soc. London, vol. 27, no. 188, p. 437 as *Terebratula* or *Terebratulina dalli* Davidson, unfigured. (Figured in Davidson, 1880, Challenger Zoological Reports 1, pl. 2, figs. 15, a-c as *Terebratula dalli*.)

Holotype: NHM, ZB1351*.

St. 237, Near Tokyo, off Japan, 34°37'N., 140°32'E., 1875 fathoms.

Recent

(*Bathynanus? dalli* (Davidson, 1878) by Zezina, 1979)

***Terebratula davidsoni* A.Adams, 1867**

Proc. Zool. Soc. London, p. 314, pl. 19, fig. 30.

Lectotype: NHM, ZB949*. Paralectotype: NHM, ZB3685*.

Satanomisaki, Japan, 55 fathoms.

(*Gryphus davidsoni* (A.Adams, 1867) by Dall, 1920, Proc. U. S. Nat. Mus., vol. 57, no. 2314, p. 319.)

***Terebratula grayi* Davidson, 1852**

Proc. Zool. Soc. London, p. 76, pl. 14, figs. 1-3.

Type: place of preservation unknown.

Coast of Korea.

Recent

(*Coptothyris grayi* (Davidson, 1852) by Jackson, 1918, Geol. Mag., vol. 5, p. 479-480.)

***Terebratula japonica* Sowerby, 1846**

Proc. Zool. Soc., p. 91, unfigured.

Lectotype: NHM, ZB957*. Paralectotype: NHM, ZB955*, 956*, 3634*, 3635*.

Japan

Recent

(*Terebratulina japonica* (Sowerby, 1846) by Adams, A., Ann.

Mag. Nat. Hist., ser. 3, vol. 11, p. 98, 1863.)

Remarks: Specimen ZB3635 was originally housed as *Terebratula angusta* Adams and Reeve, 1848. Specimen ZB3634 has been listed as a paralectotype because it was given to Davidson by Sowerby and could therefore have been part of Sowerby's type series (Brunton, 1995).

***Terebratula miikensis* Yokoyama, 1911**

Jour. Coll. Sci., Imp. Univ., Tokyo, vol. 27, art. 20, p. 6, pl. 3, figs. 6a-b.

Holotype: UMUT CB20004*.

240 feet underground at Manda in the Miike coalfield. Arao-machi, Tamana-gun, Kumamoto Prefecture. (Lat. 32°59'50" N., Long. 130°27'04" E.: Hatai, 1954).

Yotsuyama Formation

Palaeocene or Eocene

(*Dallina* (?) *miikensis* (Yokoyama, 1911) by Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 323-324.)

***Terebratula rubella* Sowerby, 1846**

Proc. Zool. Soc. London, vol. 14, p. 94-95, unfigured.

Type: place of preservation unknown.

Japan

Recent

(*Laqueus rubellus* (Sowerby, 1846) by Davidson, 1871, Proc. Zool. Soc. London, vol. 39, p. 306-307.)

Remarks: Sowerby stated that his specimen of *Terebratula rubella* was obtained from Japan. The type locality written in Hatai (1940) is failure based on Dall, 1920 who considered *Laqueus rubellus* and *Laqueus pictus* (= *Pictothyris picta*) were synonymous. Dall sited the type locality based on A.Adams, 1863.

***Terebratula stearnsii* Dall and Pilsbry, 1891**

Proc. Acad. Nat. Sci. Phil., Ser. 3, p. 165-167, pl. 4, figs. 1-3.

Type: place of preservation unknown.

Eastern coast of Kii province, Japan.

Recent

(*Gryphus stearnsii* (Dall and Pilsbry, 1891) by Thomson, 1927, New Zealand Board of Science and Art, Manual, no. 7, p. 194.)

Remarks: Hatai (1940) wrote that the holotype was probably preserved in the collection of the Academy of Natural Sciences, Philadelphia. *Gryphus stearnsi* in Hatai, 1940 is a miss-printing.

***Terebratulina akitana* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bul., no. 10, p. 167-168, pl. 18, figs. 21, 22.

Holotype: SHM coll. cat. no. 7177*.

A small cliff about 500 m from the entrance to Iwaizawa, a large valley west of the Ukibuta railway station, Yazawagi-mura, Hiraga-gun, Akita Prefecture, (Lat. 39°19' N., Long. 140°20' E.: Hatai, 1954)

Yazawagi Formation

Miocene

***Terebratulina compressa* Cooper, 1973**

Sci. Rep., Tohoku Univ., 2nd Ser., Spec. Vol., no. 6, p. 378, pl. 45, figs. 23-30.

Holotype: USNM Cat. No. MO 110844*.

U.S. Fish Commission Station 3697, Manazuru Zaki, 26° west 6 miles at 265 fathoms (=485 meters).

Recent

Remarks: Originally published as *Terebratulina valdiviae* Blochmann, hypotype in Dall, 1920. The specimen is housed under the new name (in Paleobiology Fossil Type Brachiopod Register, Smithsonian Institution, 1995).

***Terebratulina crossei* Davidson, 1882**

Journal de Conchyliologie, Ser. 3, vol. 22, p. 106-108, pl. 7, fig. 1.

Type: place of preservation unknown.

Sagami Bay, Japan.

Recent

***Terebratulina etigoensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 250, pl. 4, figs. 10, 12.

Holotype: IGPS coll. cat. no. 28285.

Hanzogane-mura, Koshi-gun, Niigata Prefecture, (Lat. 37°23' N., Long. 138°56'20" E.: Hatai, 1954)

Ushigakubi Formation

Miocene

***Terebratulina hanawensis* Hatai, 1938**

Japan. Jour. Geol. Geogr., vol. 16, nos. 1-2, p. 35-36, text-figure.

Holotype: IGPS coll. cat. no. 62477*.

Hanawa, Hanawagawa-mura, Yamamoto-gun, Akita Prefecture, (Lat. 40°17' N., Long. 140°05' E.: Hatai, 1954).

Hanawa Formation

Miocene

***Terebratulina hanzawai* Hatai, 1950**

Short Pap., Inst. Geol. Paleont., Tohoku Univ., no. 1, p. 57, text-figures.

Holotype: IGPS coll. cat. no. 72998*.

Road side cutting at Jizodo, Makuta-mura, Kimitsu-gun, Chiba Prefecture, (Lat. 35°21'07" N., Long. 140°06'02" E.: Hatai, 1954)

Jizodo Formation

Pleistocene

***Terebratulina hashimotoi* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 303, pl. 34, figs. 16-18.

Holotype: IGPS coll. cat. no. 52817*.

Koshiba, Kanazawa-machi, Totsuka-ku, Yokohama-shi, Kanagawa Prefecture, (Lat. 35°20'05" N., Long. 139°38'06" E.: Hatai, 1954).

Koshiba Formation

Lower Pliocene

***Terebratulina hataii* Ozaki, 1958**

Bull. Nat. Sci. Mus., vol. 4, no. 1, p. 172-173, pl. 7, figs. 19-24.

Holotype: NSM coll. cat. no. 4387. Paratypes: NSM coll. cat. no. 4388-4390.

Inuwaka and Tokawa-machi, Tyosi City.

Na-arai Formation

Pliocene

***Terebratulina helenae* Hatai, 1938**

Japan. Jour. Geol. Geogr., vol. 15, nos. 1-2, p. 67-68.

Syntype: SHM coll. cat. no. 10859*.

Otsutsumi, Miyatoko-mura, Kurokawa-gun, Miyagi Prefecture, (Lat. 38°22'44" N., Long. 140°49'08" E.: Hatai, 1954).

Moniwa Formation

Lower Miocene

***Terebratulina honsyuensis* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bul., no. 10, p. 170-172, pl. 18, fig. 16.

Holotype: SHM coll. cat. no. 7363*.

A small cliff about 500 m from the entrance to Iwaizawa, a large valley west of the Ukibuta railway station, Yazawagi-mura, Hiraga-gun, Akita Prefecture, (Lat. 39°19' N., Long. 140°20' E.: Hatai, 1954)

Yazawagi Formation

Miocene

***Terebratulina iduensis* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 298-300, pl. 35, figs. 19, 21-23.

Holotype: IGPS coll. cat. no. 56206.

Nagata, Sirahama-Mura, Kamo-Gun, Shizuoka Prefecture, (Lat. 34°42' N., Long. 138°58' E.: Hatai, 1954).

Shirahama Formation

Miocene

Terebratulina japonica* (Sowerby, 1846) see *Terebratula japonica* Sowerby, 1846**Terebratulina kiiensis* Dall and Pilsbry, 1891**

Nautilus, vol. 5, no. 2, p. 19, pl. 1, figs. 4, 5.

Holotype: place of preservation unknown.

Coast of the Province of Kii, Japan.

Recent

Remarks: Hatai (1940) wrote that the holotype was probably preserved in the collection of the Academy of Natural Sciences, Philadelphia.

***Terebratulina kurotakiensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 250-251, pl. 8, figs. 13, 29.

Holotype: IGPS coll. cat. no. 24521*.

Kurotaki, Oriki-zawa, Kameyama-mura, Kimitsu-gun, Chiba Prefecture, (Lat. 35°12'08" N., Long. 140°07'02" E.: Hatai, 1954).

Kurotaki Formation
Pliocene

***Terebratulina kyusyuensis* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p.661-662, figs. 37-40, 1934.
Holotype: IGPS coll. cat. no. 56220.

West Coast of Kyushu, Soyo-maru St. 414, 30°33'30" N., 130°19'00 E., 514m.

Recent

***Terebratulina miuraensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 251-252, pl. 4, figs. 51, 58, 59.

Holotype: IGPS coll. cat. no. 52825*.

Nojima, Kanazawa-machi, Totsuka-ku, Yokohama-shi, Kanagawa Prefecture, (Lat. 35°18'05" N., Long. 139°38' E.: Hatai, 1954).

Nojima Formation
Lower Pliocene

***Terebratulina moniwaensis* Hatai, 1936**

Japan. Jour. Geol. Geogr., vol. 13, nos. 3-4, p. 301-302, pl. 34, figs. 26-29.

Syntype: IGPS coll. cat. no. 52029*.

Moniwa, Oide-Mura, Natori-Gun, Miyagi Prefecture, (Lat. 38°13' N., Long. 140°47' E.: Hatai, 1954)

Moniwa Formation
Miocene

***Terebratulina pacifica* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 10, p. 661, figs. 22-24, 29.

Holotype: IGPS coll. cat. no. 56237.

Off Shiwo-misaki, Soyo-maru St. 209, Lat. 33°25'40" N., Long. 135°39'10" E., 256m.

Recent

***Terebratulina peculiaris* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 223-225, pl. 6, figs. 1-7, 13-20, 31, 45, 46.

Holotype: IGPS coll. cat. no. 63111.

Soyo-maru St. 637, 40°20'37" N., 139°35'30 E., 145m.

Recent

***Terebratulina perplexa* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 9-10, pl. 2, figs. 1-17.

Holotype: USNM Cat. No. MO 549320* (USGS Loc. 17656).
Figured Paratypes: USNM Cat. No. MO 549293a*, b* (USNM Loc. 901).

USGS Loc. 17656: Large quarry west of Highway 1, just south

of Kakazu Ridge and about 0.6 mile west to the junction of Highways 1 and 153, Ryukyu Islands, Okinawa; USNM Loc. 901: 137th Navy Construction Brigade (Sea Vee Camp) quarry, Katchin Hanto, Ryukyu Islands, Okinawa.

Yontan Limestone
Pleistocene

***Terebratulina quantoensis* Yokoyama, 1910**

Jour. Geol. Soc. Tokyo, vol. 17, no. 201, p. 280-281, pl. 5, figs. 4-9.

Figured Syntype: UMUT CB20702-20704*, 20705 (missing), 20707*. Unfigured Paratypes: 20706* (figured in Yokoyama, 1920, Jour. Coll. Sci. Imp. Univ. Tokyo, pl. 19, fig. 23), 20708*. Sea cliff at Shiba, Kanazawa-machi, Totsuka-ku, Yokohama city, Kanagawa Prefecture, (Lat. 35°20'05" N., Long. 139°38'06" E.: Hatai, 1954).

Koshiha Formation
Pliocene

(*Terebratalia gouldii* (Dall, 1891) by Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 384.)

***Terebratulina (Sendathyris) otutumiensis* Hatai, 1940**

Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 253-254, pl. 2, figs. 25-26, 33-34.

Holotype: IGPS coll. cat. no. 54082.

Otsutsumi, Miyatoko-mura, Kurokawa-gun, Miyagi Prefecture, (Lat. 38°22'44" N., Long. 140°49'08" E.: Hatai, 1954).

Moniwa Formation
Lower Miocene

***Terebratulina simosensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 252, pl. 4, figs. 14-16.

Holotype: IGPS coll. cat. no. 63166*.

Inuwaka, Takakami-mura, Kaijo-gun, Chiba Prefecture, (Lat. 35°42' N., Long. 140°52'E.: Hatai, 1954)

Inuwaka formation
Pliocene

***Terebratulina sirahamensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 234, pl. 6, figs. 24.
Holotype: IGPS coll. cat. no. 56207*.

Nagata, Sirahama-mura, Kamo-gun, Shizuoka Prefecture, (Lat. 34°42' N., Long. 138°58' E.: Hatai, 1954).

Shirahama Formation
Miocene

***Terebratulina subcarinata* Cooper, 1957**

U. S. Geol. Surv., Prof. Pap., no. 314-A, p. 10, pl. 2, figs. 18-26.

Holotype: USNM Cat. No. MO 549292a*. Figured Paratypes: USNM Cat. No. MO 549337a*. Unfigured Paratypes: USNM Cat. No. MO 549292b*, c*, 549337b*, c* (same locality).

Sea cliff at north end of small beach about 0.8 mile due west of road fork at west edge of Hanza. USGS Loc. 17534.

Naha Limestone
Pliocene

***Terebratulina (Surugathyris) surugaensis* Yabe and Hatai, 1934**

Proc. Japan. Acad., vol. 10, no. 9, p. 587-588, fig. 1.

Holotype: IGPS coll. cat. no. 56227*.

Suruga Bay, Soyo-maru St. 262, 35°00'40" N., 138°34'00" E., 604 m.

Recent

***Terebratulina titibuensis* Hatai, 1940**

Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 249, pl. 6, figs. 52-54.

Syntype: IGPS coll. cat. no. 15873*.

Gohei-bashi, Kunigami-mura, Chichibu-gun, Saitama Prefecture, (Lat. 36°03'31" N., Long. 139°05'40" E.: Hatai, 1954).

Ogano Formation

Oligocene

***Terebratulina tohokuensis* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bul., no. 10, p. 168-170, pl. 18, figs. 11-12, 19-20, 23-38.

Syntype: SHM coll. cat. no. 7156*.

A small cliff facing the Ukibuta railway station, Yazawagi-mura, Hiraga-gun, Akita Prefecture, (Lat. 39°18'05" N., Long. 140°20' E.: Hatai, 1954).

Yazawagi Formation

Miocene

***Terebratulina yabei* Nomura and Hatai, 1936**

Saito Ho-on Kai Mus., Res. Bul., no. 10, p. 189-190, pl. 19, figs. 13-14.

Holotype: IGPS coll. cat. no. 58696.

River cliff north of Taya, Iwami-Sannaimura, Kawabe-gun, Akita Prefecture, (Lat. 39°42' N., Long. 140°17' E.: Hatai, 1954).

Taya Formation

Miocene

***Terebratulina zinboi* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 494, pl. 78, figs. 1-4.

Syntype: IGPS coll. cat. no. 72530*.

Three kilometers east of Ginzan-batake, Tamano-Mura, Kita-Mura-yama-Gun, Yamagata Prefecture, (Lat. 38°34'02" N., Long. 140°32'00" E.: Hatai, 1954).

Ginzan Formation

Lower Miocene

***Thecidellella japonica* Hayasaka, 1938**

Venus, vol. 8, no. 1, p. 11, figs. 1-2.

Type: place of preservation unknown.

Off Hatizyo-sima.

Recent

***Waldheimia elongata* Tokunaga, 1906**

Jour., Coll. Sci., Imp. Univ. Tokyo, vol. 21, art. 2, p. 69, pl. 4, figs. 9a-b.

Holotype: UMUT CB13685*.

Shinagawa, Tokyo-to, (Lat. 35°36' N., Long. 139°46' E.: Hatai, 1954).

Tokyo Formation

Pleistocene

(*Coptothyris grayi* (Davidson, 1852) by Hatai, 1940, Sci. Rep., Tohoku Univ., 2nd Ser., vol. 20, p. 384)

***Waldheimia raphaelis* Dall, 1870**

Am. Jour. Conchology, vol. 6, pt. 2, no. 2, p. 111-112, pl. 7, figs. a-e.

Holotype: USNM Cat. No. MO 110845*.

Japanese coast near Yeddo (Tokyo).

Recent

(*Dallina raphaelis* (Dall, 1870) by Schuchert, 1911, Bull. Geol. Soc. Amer., vol. 22, p. 269.)

Remarks: Locality on the specimen label reads: Yokohama (in Paleobiology Fossil Type Brachiopod Register, Smithsonian Institution, 1995).

***Waldheimia raphaelis albida* Dall, 1908**

Nautilus, vol. 22, no. 3, p. 30, unfigured.

Syntype: USNM Cat. No. MO 110784*.

Off Honsyu Island, 45 fathoms.

Recent

(*Dallina raphaelis albida* (Dall, 1908) by Dall, 1920, Proc. U. S. Natl. Mus., vol. 57, no. 2314, p. 359)

Remarks: Dall, 1920, Proc. U. S. Nat. Mus., vol. 57, no. 2314, p. 359, described *Dallina raphaelis albida* as a new variety. But this var. was first described in 1908 (in Paleobiology Fossil Type Brachiopod Register, Smithsonian Institution, 1995).

***Yabeithyris kanazawaensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 499, pl. 78, figs. 23.

Holotype: IGPS coll. cat. no. 72537*.

Horakuji, Noto Peninsula, Ishikawa Prefecture, (locality unknown).

Nanao Formation

Miocene

***Yabeithyris notoensis* Hatai, 1948**

Jour. Paleont., vol. 22, no. 4, p. 499, pl. 78, figs. 14-16, 21.

Holotype: IGPS coll. cat. no. 72536*.

Horakuji, Noto peninsula, Ishikawa Prefecture, (locality unknown).

Nanao Formation

Miocene

Paleozoic and Mesozoic Bryozoa

Sumio Sakagami¹ and Akihiro Sugimura²

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Yamaguchi 754-0511, Japan

The specimens with double asterisk(**) have been stored and will be registered in the collections of National Science Museum, Tokyo (NSM).

Acanthocladia peculiaris Sakagami, 1962

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 237, pl. 37, fig. 11.

Holotype: DGHH no. 114** (Surface specimen)

Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

The Hikoroichi Series

Early Carboniferous (Tournaisian-Visean)

Acanthocladia thaiensis Sakagami, 1968

Geol. Palaeont. Southeast Asia, vol. 4, p. 64, 65, pl. 12, figs. 2-4.

Holotype: Khao Phrik-3-S5** (Surface specimen)

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

Anastomopora orientalis Sakagami and Akagi, 1961

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 43, p. 110, 111, pl. 15, fig. 9, 10; text-fig. 3.

Holotype: TKD no.22238

Miharano in the eastern part of the Taishaku district, Tojo-machi, Hida-gun, Hiroshima Prefecture, Japan

The *Pseudoschwagerina* zone, the Miharano Formation

Early Permian

Araxopora? ikedai Sakagami, 1998

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 1, 2, p.81-83, figs. 6-1 - 4.

Holotype: NSM PA no. 14053

A limestone block collected near Cape Joseph Henry (64° 00'W, 82° 44'N), North Ellesmere Island, Canadian Arctic Archipelago

Early Permian (Artinskian)

Araxopora malayensis Sakagami, 1973

Geol. Palaeont. Southeast Asia, vol. 12, p. 70, 71, pl. 8, figs. 5, 6, pl. 9, figs. 1, 2.

Holotype: JPN-4**

Jenka Pass, ca. 7 miles east of Kampong Awah along the Temerloh-Maran road, Pahang, Malaya

The *Lepidolina-Yabeina* zone

Late Permian

Ascopora asiatica Sakagami, 1968

Geol. Palaeont. Southeast Asia, vol. 4, p. 53-55, pl. 10, figs. 4-6.

Holotype: Khao Phrik-3-6**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

Ascopora burtoni Sakagami, 1971

Geol. Palaeont. Southeast Asia, vol. 9, 140, p. 141, pl. 24, fig. 2, pl. 25, figs. 3-5.

Holotype: BMN-2b**

The east face of the hill known as Khao Pha, beside a laterite road leading from Map Ammarit railway station, 47 km NNE of Chumphon town, peninsular Thailand

The Rat Buri Limestone

Early Permian

Ascopora magna Sakagami, 1968

Geol. Palaeont. Southeast Asia, vol. 4, p. 57, pl. 11, figs. 1-4.

Holotype: Khao Phrik-3-3**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

Ascopora nakornsrii Sakagami, 1968

Geol. Palaeont. Southeast Asia, vol. 4, p. 55, 56, pl. 10, figs. 7, 8.

Holotype: Khao Phrik-3-27**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

Ascopora peruana Sakagami, 1998

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 3, 4, p. 174-176, figs. 7-4 -7; 8-1, 2.

Holotype: NSM PA no. 14240c

The southern side of the Tarma-Oroya road at ca. 4 km west of the center of Tarma City, Peru

The Tarma Limestone

Middle Carboniferous (Desmoinesian)

Ascopora yanagidae Sakagami, 1968

Geol. Palaeont. Southeast Asia, vol. 4, p. 56, 57, pl. 10, figs. 9-11.

Holotype: Khao Phrik-3-39**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

***Batostomella (Geinitzella) hayasakai* Yabe and Sugiyama, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 82, p. 410, figs. 1a, b.
 Syntype: IGPS no. 6275
 Kiangti, Lutien-hsien, Yunnan, China
 Probably Early Permian

***Batostomella igoi* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 26, 27, pl. 10, figs. 5-9, pl. 11, figs. 5, 6.
 Holotype: DGHH no. 5093-C**
 The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
 The *Lepidolina-Yabeina* zone
 Late Permian

***Batostomella (Geinitzella) manchuriensis* Yabe and Sugiyama, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 82, p. 411, figs. 3a, b, 4a-c.
 Syntype: IGPS no. 6298
 10 km north of the railway station, Shanhotun, on the Kiaoho-Habin line, the locality lying close to the Zyoran coal-field, found in an impure limestone, Manchoukuo (north China)
 Early Permian

***Batostomella microstoma* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 27, pl. 10, fig. 4.
 Holotype: DGHH no. 5071-A**
 The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
 The *Lepidolina-Yabeina* zone
 Late Permian

***Batostomella yamazakii* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 26, pl. 9l, figs. 7, 8; pl. 10, figs. 1-3.
 Holotype: DGHH no. 5006-A**
 The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
 The *Lepidolina-Yabeina* zone
 Late Permian

***Batostomella (Geinitzella) yunnanensis* Yabe and Sugiyama, 1942**

Proc. Imp. Acad. Tokyo, vol. 18, no. 82, p. 410, figs. 2a, b.
 Syntype: IGPS no. 6256
 Chihai, Tonchwan, Yunnan, China
 Probably Early Permian

***Cheilotrypa choanjiensis* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 229, pl. 35, figs. 3-5.
 Holotype: DGHH no. 11002**

Choanji, Ofunato City, Iwate Prefecture, Japan
 The Hikoroichi Series
 Early Carboniferous (Tournaisian-Visean)

***Clausotrypa exillis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 52, pl. 25, fig. 6.
 Holotype: DGHH no. 5026-A**
 The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
 The *Lepidolina-Yabeina* zone
 Late Permian

***Coeloclemis minima* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 31, 32, pl. 14, figs. 6, 7.
 Holotype: DGHH no. 5089-A**
 The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
 The *Lepidolina-Yabeina* zone
 Late Permian

***Coscinotrypa minor* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 23, 24, pl. 8, figs. 10-12; pl. 9, figs. 3, 4.
 Holotype: DGHH no. 6500-A**
 An impure tuffaceous limestone exposed at the sea shore near the entrance of Koshirazu tunnel of Hokuriku railroad, Niigata Prefecture, Japan
 The *Pseudoschwagerina* zone
 Early Permian

***Coscinotrypa orientalis* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 5, p. 53, pl. 7, figs. 4-7.
 Holotype: KTR-44**
 Khao Ta Mong Rai near Ban Nong Rai, ca. 5 km northeast of Changwat Prachuap Khiri Khan, peninsular Thailand
 The Rat Buri Limestone
 Early Permian

***Dyscritella grossa* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 5, p. 53, 54, pl. 8, figs. 1-3.
 Holotype: KTR-8**
 Khao Ta Mong Rai near Ban Nong Rai, ca. 5 km northeast of Changwat Prachuap Khiri Khan, peninsular Thailand
 The Rat Buri Limestone
 Early Permian

***Dyscritella hidakaensis* Sakagami, 1979 (in Sakagami and Sakai, 1979)**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 114, p. 83, 84, pl. 13, figs. 3-5.
 Holotype: DESC no. 79013**
 Kerimai (2), Oimatezawa, tributary of Kerimai river, Hidaka Province, Hokkaido, Japan

The Naizawa Formation of the Hidaka Group
Late Triassic (probably early Carnian)

***Dyscritella iwaizakiensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 28, 29, pl. 11, figs. 1-4; pl. 12, figs. 1, 2; pl. 13, figs. 1, 2.

Holotype: DGHH no. 5057-A**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Dyscritella komukensis* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 49, pl. 13, figs. 1-5.

Holotype: WKM-2-59**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Dyscritella phetchabunensis* Sakagami, 1975**

Geol. Palaeont. Southeast Asia, vol. 6, p. 38, 39, pl. 5, figs. 2-5.

Holotype: WBP-3a**

A limestone outcrop at the east side of Khao Hin Kling, ca. 15 km west from Point km 333 on the new road from Chai Badan to Phetchabun, Thailand

Late Permian

***Dyscritella shigeyasuensis* Sakagami and Sugimura, 2000**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 10, pl. 4, figs. 1-4.

Holotype: ASM no. 91657a

Locality7 S124 situated along 316 National Road at ca. 300 m northeast of the Shigeyasu railway station, Yamaguchi Prefecture, Japan

The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group

Late Permian

***Dyscritella takauchiensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 29, 30, pl. 13, figs. 4-11; pl. 14, fig. 5.

Holotype: DGHH no. 8112-A**

The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Dysnoetocella? voigti* Nishizawa and Sakagami, 1997**

Paleont. Res., vol. 1, no. 4, p. 268-272, figs. 2-1 - 6. 3-1 - 10.

Holotype: NSM-PA no. 14018

Beside Kuroya-ike located at Takano-cho, Matsuyama City, Ehime Prefecture, Japan

A limestone block in the lowest horizon of the Yuyama conglomerate member of the basal part of the Izumi Group

Late Cretaceous (Campanian)

***Euthyrhombopora makiensis* Sugimura, 1993**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 28, p. 81-83, pl. 4, figs. 1-6.

Holotype: ASM no. 90318

A limestone outcrop in Maki area of Sumitomo quarry, about 1.7 km west of Shimogama bus stop, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Zaphrentoides* sp. zone, the Akiyoshi Limestone Group

Early Carboniferous

***Fenestella binodosa* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 327, 328, pl. 50, fig. 5, text-fig. 2.

Holotype: DGHH no. 11222**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone

Middle Carboniferous

***Fenestella buguniensis higuchizawaensis* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 235, pl. 37, fig. 8, text-fig. 3e

Holotype: DGHH no. 104** (Surface specimen)

Higuchizawa, Ofunato City, Iwate Prefecture, Japan

The Hikoroichi Series

Early Carboniferous (Tournaisian-Visean)

***Fenestella crassistereoma* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 231, pl. 37, fig. 1, text-fig. 3a.

Holotype: DGHH no. 111** (Surface specimen)

Sakamotozawa, Ofunato City, Iwate Prefecture, Japan

The Hikoroichi Series

Early Carboniferous (Tournaisian-Visean)

***Fenestella hikoroichiensis* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 234, pl. 37, fig. 7, text-fig. 3b.

Holotype: DGHH no. 102** (Surface specimen)

Higuchizawa, Ofunato City, Iwate Prefecture, Japan

The Hikoroichi Series

Early Carboniferous (Tournaisian-Visean)

***Fenestella kawadae* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 326, 327, pl. 50, fig. 6, text-fig. 1.

Holotype: DGHH no. 11204-B**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone

Middle Carboniferous

***Fenestella komalarjuni* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 157, 158, pl. 6,1 fig.

1.
Holotype: WKM-2-12s** (surface specimen)
Locality WKM-2 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fenestella krachokensis* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 71, 72, pl. 13, figs. 1, 2.
Holotype: KCK-3**
Khao Chong Krachok, northern part of Changwat Prachuap Khiri Khan, peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fenestella macronodata* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 11, 12, pl. 4, fig. 1, text-fig. 4.
Holotype: DGHH no. 8856**
Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan
The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Fenestella megacapillaris* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 61, 62, pl. 12, fig. 6.
Holotype: Khao Phrik-3-51**
Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fenestella nomatae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 34, 35, pl. 15, fig. 3.
Holotype: DGHH no. 8125-A**
The Takauchi limestone, at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian

***Fenestella ofunatoensis* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 233, 234, pl. 37, fig. 9.
Holotype: DGHH no. 112** (Surface specimen)
Sakamotozawa, Ofunato City, Iwate Prefecture, Japan
The Hikoroichi Series
Early Carboniferous (Tournaisian-Visean)

***Fenestella otae* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 14, 15, pl. 4, fig. 5, text-fig. 6.
Holotype: DGHH no. 8705
Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Fenestella pahangensis* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 54, 55, pl. 8, figs. 1, 2.
Holotype: SBC-60**
Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya
Early Carboniferous

***Fenestella (Minilya) pseudoamplia* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 158, 159, pl. 6, fig. 2.
Holotype: WKM-5-04**
Locality WKM-5 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fenestella (Minilya) taishakuensis* Sakagami and Akagi, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 43, p. 108, pl. 15, fig. 8; text-fig. 1.
Holotype: TKD no. 22234
Miharano in the eastern part of the Taishaku district, Tojo-machi, Hida-gun, Hiroshima Prefecture, Japan
The *Pseudoschwagerina* zone, the Miharano Formation
Early Permian

***Fenestella thaiensis* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 159, pl. 6, fig. 3, text-fig. 1.
Holotype: WKM-6-05**
Locality WKM-6 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fenestella (Loculiporina) toriyamae* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 9-11, pl. 4, figs. 2, 3, text-figs. 2A, B, 3.
Holotype: DGHH no. 8759**
Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan
The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Fenestrellina japonica* Sakagami, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 235, 236, pl. 37, fig. 3, text-fig. 3c.
Holotype: DGHH no. 103** (Surface specimen)
Higuchizawa, Ofunato City, Iwate Prefecture, Japan
The Hikoroichi Series
Early Carboniferous (Tournaisian-Visean)

***Fistulipora carrascoi* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 242-244, figs. 10-1 - 4, 11-1, 2.

Holotype: DESC no. 95167**

Cuyavi, ca. 60 km west of Las Paz City, the Lake Titicaca region of Bolivia

Middle part of the *Pseudoschwagerina* zone, The Copacabana Group

Early Permian

***Fistulipora hamadae* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 151, 152, pl. 5, figs. 6, 14, text-figs. 3h, i.

Holotype: WKM-5-02**

Locality WKM-5 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora horowitzi* Sakagami, 1970 (the new name for *Fistulipora ramosa* Sakagami, 1966)**

Geol. Palaeont. Southeast Asia, vol. 8, p. 47, 48.

Holotype: WKM-5-03 (holotype)**

Locality WKM-5 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora irimiensis* Sugimura and Ota, 1980**

Bull. Akiyoshii-dai Mus. Nat. Hist., no. 15, p. 51, 52, pl. 3, figs. 1, 3-5.

Holotype: ASM no. 90208

A limestone outcrop, about 1.25 km SSW of Irimi, Mine City, Yamaguchi Prefecture, Japan

The *Pseudofusulina ambigua* zone, the Akiyoshi Limestone Group

Early Permian

***Fistulipora kanensis* Sugimura, 1987**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 22, p. 47, 48, pl. 6, figs. 1-3.

Holotype: ASM no. 98161

Izuto limestone in Doi, about 6.0 km NNW of Tokusa-ga-mine (triangulation station, 989.2), Ato-cho, Abu-gun, Yamaguchi Prefecture, Japan

The Kane Formation (Permian)

Middle Carboniferous

***Fistulipora kesenumensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 17, pl. 2, figs. 4, 5.

Holotype: DGHH no. 5531-A**

Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan

The *Parafusulina* zone, the Kanokura Formation

Early Permian (Artinskian)

***Fistulipora komukensis* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 147, 148, pl. 5, figs. 10, 12, text-figs. 3a, b.

Holotype: WKM-2-03**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora kotoi* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 81, pl. 1, figs. 3-5.

Holotype: No Reg. no.

Kaerimizu, Mito-cho, Mine-gun, Yamaguchi Prefecture, Japan

Early Permian

***Fistulipora kumaensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 19, pl. 6, figs. 5, 6.

Holotype: DGHH no. 9027-A**

The eastern part of Kasamatsu, Kawamata-mura, Yatsushiro-gun, Kumamoto Prefecture, Japan

The *Lepidolina-Yabeina* zone, the Kuma Formation

Later Permian

***Fistulipora lamella* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 146, 147, pl. 5, figs. 2, 17, text-figs 2e, f.

Holotype: WKM-6-01**

Locality WKM-6 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora megastoma* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 18, pl. 5, figs. 1, 2.

Holotype: DGHH no. 5532-B**

Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan

The *Parafusulina* zone, the Kanokura Formation

Early Permian (Artinskian)

***Fistulipora miharanoensis* Sakagami and Akagi, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 43, p. 107, pl. 15, figs. 3, 4.

Holotype: TKD no. 22232

Miharano in the eastern part of the Taishaku district, Tojo-machi, Hida-gun, Hiroshima Prefecture, Japan

The *Pseudoschwagerina* zone, the Miharano Formation

Early Permian

***Fistulipora minima* Hayasaka, 1924**

Sci. Rep., Tohoku Imp. Univ., 2nd ser., vol. 8, p. 55, pl. 7, fig. 4.

Holotype: IGPS no.?

The south of the region, along the valley of the Kotaki-gawa, near the margin of the exposure of the limestone Horizon II and IV, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

Early Carboniferous (Visean)

***Fistulipora multidiaphragma* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 244, figs. 11-5 - 7.

Holotype: DESC no. 95047**

Yaurichambi, ca. 40 km west of La Paz City, Bolivia

Middle part of the *Eoparafusulina* zone, the Copacabana Group
Early Permian

***Fistulipora nagatoensis* Ozawa, 1925**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 45, art. 6, p. 82, pl. 1, figs. 6, 7.

Holotype: UT no. ?

Tobinosu, Ota-mura, Mine-gun, Yamaguchi Prefecture, Japan

Early Carboniferous

***Fistulipora ozawae* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 3, pl. 1, figs. 1, 2, pl. 8, fig. 2.

Holotype: DGHH no. 8714**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Fistulipora pseudolunaris* Sakagami and Sugimura, 2000**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 7, pl. 2, figs. 1-3.

Holotype: ASM no. 91659a(a)

Locality S124 situated along 316 National Road at ca. 300 m northeast of the Shigeyasu railway station, Yamaguchi Prefecture, Japan

The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group
Late Permian

***Fistulipora pseudomonticulosa* Sakagami, 1980**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 118, p. 272, pl. 31, figs. 4-6.

Holotype: DESC no. 80004**

Abadeh region, central Iran

The *Araxilevis* horizon of Section A

Late Permian (Dzhulfian)

***Fistulipora ramosa* Sakagami, 1966 (see *Fistulipora horowitzi* Sakagami, 1970)**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 150, pl. 5, figs. 7, 15, text-fig. 3c.

Holotype: WKM-5-03**

Locality WKM-5 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora regularis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 18, 19, pl. 7, figs.

1-3.

Holotype: DGHH no. 6209-A**

The lower member of the Kuzuu limestone at Izuru, Terao-mura, Shimotsuga-gun, Tochigi Prefecture, Japan

The *Parafusulina* zone

Early Permian

***Fistulipora satoi* Sakagami, 1966**

Jap. Jour. Geol. Geogr. vol. 37, nos. 2-4, p. 145, 146, pl. 5, figs. 3-5, 16, text-fig. 2c, d.

Holotype: WKM-7-01**

Locality WKM-7 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Fistulipora sawatai* Sakagami, 1999**

Bull. Kitakyushu Mus. Nat. Hist., no. 18, p. 83, 84, pl. 19, figs. 1-3.

Holotype: KMNH IvP no. 600,091a

Locality O of the Khao Hin Kling area at the west side of Highway 21, ca. 50 km south of Phetchabun, Thailand

Late Permian (Guadalupian)

***Fistulipora shigeyasuensis* Sakagami, 1964**

Bull. Akiyoshidai Sci. Mus., no. 3, p. 3, 4, pl. 1, figs. 3, 4, pl. 8, fig. 1.

Holotype: DGHH no. 8758**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Fistulipora siamensis* Sakagami, 1999**

Bull. Kitakyushu Mus. Nat. Hist., no. 18, p. 82, 83, pl. 18, figs. 4-6.

Holotype: KMNH IvP no. 600,098a (Kitakyushu Mus. Nat. Hist.)

Locality O of the Khao Hin Kling area at the west side of Highway 21, ca. 50 km south of Phetchabun, Thailand

Late Permian (Guadalupian)

***Fistulipora takauchiensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 17, 18, pl. 3, figs. 1, 2; pl. 4, figs. 1-5.

Holotype: DGHH no. 8120**

The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Fistulipora tenella* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 150-151, pl. 5, figs. 8, 13, text-figs. 3d, e.

Holotype: WKM-2-06**

Locality WKM-2 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian

***Fistulipora titicacaensis* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 244, figs. 11-3, 4.

Holotype: DESC no. 95182**

Cuyavi, ca. 60 km west of La Paz City, the Titicaca region of Bolivia

Middle part of the *Pseudoschwagerina* zone, the Copacabana Group

Early Permian

***Girtypora sakagami* Sugimura, 1985**

Bull. Akiyoshi-dai Mus., Nat. Hist., no. 20, p. 19-21, pl. 7, figs. 1-12.

Holotype: ASM no. 90275A

A limestone outcrop, about 0.2 km NNE of Minami-dai (triangulation station 406.0) in Sumitomo quarry, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Profusulinella beppensis* zone, the Akiyoshi Limestone Group

Middle Carboniferous

***Girtyporina gorjunovae* Sakagami and Sugimura, 2000**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 17, 18, pl. 9, figs. 2-4.

Holotype: ASM no. 90198

Locality S124 situated along 316 National Road at ca. 300 m northeast of the Shigeyasu railway station, Yamaguchi Prefecture, Japan

The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group
Late Permian

***Goniocladia intricata* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 25, pl. 14, fig. 3.

Holotype: DGHH no. 5033-A**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Goniocladia regularis* Sakagami, 1998**

Bull. Nat. Sci., Mus. ser. C (Geol. & Paleont), vol. 24, nos. 1, 2, p. 72, figs. 2-3, 4.

Holotype: NSM PA no. 14060

Limestone block collected near Cape Joseph Henry (64° 00'W, 82° 44'N), North Ellesmere Island, Canadian Arctic Archipelago

Early Permian (Artinskian)

***Hayasakapora akiyoshiensis* Sugimura, 1972**

Bull. Akiyoshi-dai Sci. Mus., no. 8, p. 5, 6, pl. 1, figs. 4, 5, pl. 2, fig. 4.

Holotype: ASM no. 9488

A limestone outcrop in Misumata area of Shishide-dai, about 0.8 km NNE of Kagekiyo-do Cave, Mito-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Triticites simplex* zone, the Akiyoshi Limestone Group
Late Carboniferous

***Hayasakapora erectoradiata* Sakagami, 1960**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 39, p. 323, pl. 37, figs. 1-8.

Holotype: DGHH no. 5001**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Hayasakapora isaensis* Sugimura, 1972**

Bull. Akiyoshi-dai Sci. Mus., no. 8, p. 4, 5, pl. 2, figs. 1-3.

Holotype: ASM no. 9341

Isa quarry, about 1.8 km ENE of Mine railway station of Mine line, Mine City, Yamaguchi Prefecture, Japan

The *Triticites simplex* zone, the Akiyoshi Limestone Group
Late Carboniferous

***Hayasakapora matsudae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 53, 54, pl. 27, figs. 15, 16.

Holotype: DGHH no. 5212-A**

The d member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Parafusulina* zone

Early Permian

***Hayasakapora otai* Sugimura, 1972**

Bull. Akiyoshi-dai Sci. Mus., no. 8, p. 3, 4, pl. 1, figs. 1-3.

Holotype: ASM no. 9406B

A limestone outcrop in Zyunan-dai (Nakano-dai), about 1.2 km SE of Kamaichi, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Nagatophyllum satoi* zone, the Akiyoshi Limestone Group
Early Carboniferous

***Hayasakapora taishakuensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 54, pl. 28, figs. 1-4.

Holotype: DGHH no. 8505-A**

The *Pseudoschwagerina* zone, northwestern part of Morono Pass, Misakago, Tojo-machi, Hiba-gun, Hiroshima Prefecture, Japan

Early Permian

***Hayasakapora yanagidai* Sakagami and Sugimura, 2000**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 18, 19, pl. 9, figs. 5-7.

Holotype: ASM no. 91522(a)

Locality Yox53 situated at Serita of Shuho-cho, Beppu, Yamaguchi Prefecture, Japan
The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group
Late Permian

***Helenopora phillipsae* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 1, 2, p. 83-85, figs. 7-1 -3.
Holotype: NSM PA no. 14045b
A limestone block collected near Cape Joseph Henry (64° 00'W, 82° 44'N), North Ellesmere Island, Canadian Arctic Archipelago
Early Permian (Artinskian)

***Hexagonella khaophrikensis* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 52, 53, pl. 10, figs. 1-3.
Holotype** Khao Phrik-3-42**
Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand
The Rat Buri Limestone
Early Permian

***Hexagonella kobayashii* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 50, 51, pl. 9, figs. 3-5.
Holotype: Khao Phrik-1-1 and S1** (Surface specimen)
Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand.
The Rat Buri Limestone
Early Permian

***Hexagonella robusta* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 51, 52, pl. 9, figs. 8-10.
Holotype** Khao Phrik-3-49**
Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand
The Rat Buri Limestone
Early Permian

***Hinaclemna hinaensis* Sakagami and Sugimura, 1987**

Proc. Japan Acad., vol. 63, ser. B, no. 7, p. 247-249, figs. 1-7.
Holotype: ASM no. 98502a-c
A limestone outcrop at Hina, Yoshii-cho, Shizuki-gun, Okayama Prefecture, Japan
The *Endothyra* zone, the Hina Limestone
Early Carboniferous

***Hyphasmopora katoi* Sakagami, 2000**

Bull. Nat. Sci. Mus., Ser. C (Geol. & Paleont.), vol. 26, nos. 3, 4, p. 152, 153, figs. 6-2-8.
Holotype: MSM PA no. 14741b
Locality no. 80CP535B located in NW part of Waghete 1:250,000 map sheet area in Irian Jaya, Indonesia
The Aiduna Formation of the Aifam Group

Middle Permian

***Leioclema? choshiensis* Sakagami, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 57, p. 5, pl. 1, figs. 3-10.
Holotype: DGHH no. 5824**
Takagami quarry, about 2 km south of Choshi City, Chiba Prefecture, Japan
In a limestone pebble of the Takagami conglomerate of the Atago Formation (Jurassic?)
Late Permian

***Leioclema kobayashii* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 230, 231, pl. 36, figs. 3, 4, text-fig. 2.
Holotype: DGHH no. 11151**
Sakamotozawa, Ofunato City, Iwate Prefecture, Japan
The Hikoroichi Series
Early Carboniferous (Tournaisian-Visean)

***Leioclema micropora* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 7, 8, pl. 3, figs. 2, 3, pl. 8, figs. 4, 5.
Holotype: DGHH no. 8742-A**
Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan
The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Leioclema mongraiensis* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 5, p. 55, 56, pl. 9, figs. 1-3.
Holotype: KTR-7b**
Khao Ta Mong Rai near Ban Nong Rai, ca. 5 km northeast of Changwat Prachuap Khiri Khan, peninsular Thailand
The Rat Buri Limestone
Early Permian

***Leioclema muratae* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 6, 7, pl. 3, figs. 5, 6, pl. 8, fig. 8.
Holotype: DGHH no. 8768**
Sigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan
The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group.
Early Permian

***Leioclema nonakae* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 52, p. 157, 158, pl. 24, figs. 2-5.
Holotype: DGHH no. 9505**
The Yamanba limestone, Yamanba, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Japan
Middle to Late Permian

***Leioclema sugiyamai* Sakagami, 1979 (in Sakagami and Sakai, 1979)**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 114, p. 81-82, pl. 12, figs. 1-5.

Holotype: DESC no. 79018**

Kerimai (2) of Oimatezawa, tributary of Kerimai river, Hidaka Province, Hokkaido, Japan

The Naizawa Formation of the Hidaka Group

Late Triassic (probably early Carnian)

***Leioclema uzuraensis* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 299, pl. 44, figs. 6, 7.

Holotype: DGHH no. 13027-A**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group

Early Carboniferous

***Meekopora delicata* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 22, pl. 8, figs. 1, 2.

Holotype: DGHH no. 5223-A**

The d member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Parafusulina* zone

Early Permian

***Meekopora densa* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 21, pl. 7, figs. 6, 7.

Holotype: DGHH no. 5043-A**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian (Kazanian)

***Meekopora? fungipora* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 5, pl. 2, fig. 4, pl. 3, fig. 4, pl. 8, fig. 3, text-fig. 1.

Holotype: DGHH no. 8750**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone of the Akiyoshi Limestone Group

Early Permian

***Meekoporella? akiyoshiensis* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 6, pl. 2, figs. 3, 5.

Holotype: DGHH no. 8710**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Meekoporella? izutoensis* Sugimura, 1987**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 22, p. 49, 50, pl. 6, fig. 7,

pl. 7, figs. 1, 2.

Holotype: ASM no. 98129

The Izuto limestone in Doi, about 6.0 km NNW of Tokusa-ga-mine (triangulation station, 989.2), Ato-cho,

Abu-gun, Yamaguchi Prefecture, Japan

The Kane Formation (Permian)

Middle Carboniferous

***Monotrypella? yabei* Sugiyama, 1944**

Studies Geol. Min. Inst., Tokyo Bunrika Daigaku, no. 1, p. 47, 48, pl. 3, figs. 3-4c

Holotype: No Reg. no. (Inst. Geol. Palaeont., Fac. Sci., Tohoku Univ.?)

Imose, Kusaka-mura, Kochi Prefecture or Omori, near Hikoroichi, Ohunato City, Iwate Prefecture, Japan

The *Solenopora* zone

Middle Silurian

***Morozovapora akiyoshiensis* Sakagami and Sugimura, 1978**

Proc. Japan Acad., vol. 54, ser. B, no. 6, p. 258-261, fig. 1A-G, fig. 2.

Holotype: ASM no. 9582

A limestone outcrop in Simo-Mizuta, about 1.1 km WSW of Akiyoshi bus stop, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Nagatophyllum satoi* zone, the Akiyoshi Limestone Group

Early Carboniferous

***Nikiforopora rangeli* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 3, 4, p. 170-172, figs. 2-3b, 5-1-5.

Holotype: NSM PAno. 14229d

The southern side of the Tarma-Oroya road at ca. 4 km west of the center of Tarma City, Peru

The Tarma Limestone

Middle Carboniferous (Desmoinesian)

***Nikiforovella pahangensis* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 45, 46, pl. 6, figs. 1-4.

Holotype: SBC-17**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Nipponostenopora elegantula* Sakagami, 1960**

Jap. Jour. Geol. Geogr., vol. 31, no. 1, p. 10, 11, pl. 2, fig. 1-5.

Holotype: DGHH no. 7002-A**

Ichinotani, Fukuji, Kamitakara-mura, Yoshiki-gun, Gifu Prefecture, Japan

The *Millerella* zone

Early Carboniferous (Namurian)

***Pamirella andesensis* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 3, 4, p. 176, figs. 8-3 - 7.

Holotype: NSM PA no. 14144f

The southern side of the Tarma-Oroya road at ca. 4 km west of the center of Tarma City, Peru

The Tarma Limestone

Middle Carboniferous (Desmoinesian)

***Pamirella nepalensis* Sakagami and Sakai, 1991**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 162, p. 764-766, figs. 4-1 - 6.

Holotype: GKD-30705

A impure limestone block derived from the upper part of the Sine Formation, Nepal Lesser Himalayas.

Probably Early Permian (Artinskian)

***Penniretepora akagii* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 49, pl. 24, fig. 9.

Holotype: DGHH no. 8506-A**

Northwestern part of Morono Pass, Misakago, Tojo-machi, Hiba-gun, Hiroshima Prefecture, Japan

The *Pseudoschwagerina* zone

Early Permian

***Penniretepora akiyamae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 47, 48, pl. 24, fig. 2.

Holotype: DGHH no. 5073-B**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Penniretepora decora* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 236, 237, pl. 38, fig. 5, text-fig. 3g.

Holotype: DGHH no. 105** (Surface specimen)**

Higuchizawa, Ofunato City, Iwate Prefecture, Japan

Early Carboniferous (Tournaisian-Visean)

***Penniretepora hashimotoi* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 17, 18, pl. 6, figs. 1, 2.

Holotype: DGHH no. 8734**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Penniretepora higashiyamensis* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 16, 17, pl. 3, fig. 3, text-fig. 2.

Holotype: DGHH no. 11285-A**

Higashiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture,

Japan

The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Penniretepora iwaii* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 60, pl. 8, fig. 7.

Holotype: SBC-23a**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Penniretepora iwaizakiensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 46, pl. 24, fig. 3.

Holotype: DGHH no. 5018-C**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Penniretepora kamiyatsusensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 48, 49, pl. 24, fig. 8.

Holotype: DGHH no. S-14B** (Surface specimen)**

Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan

The *Parafusulina* zone

Early Permian

***Penniretepora microtropica* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 163, 164, pl. 6, fig. 6.

Holotype: WKM-2-16s-a** (Surface specimen)**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Penniretepora ofukuensis* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 304, 305, pl. 45, fig. 10.

Holotype: DGHH no. 13007**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group

Early Carboniferous

***Penniretepora peculiaris* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 58, 59, pl. 10, fig. 4.

Holotype: WKM-2-90b**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Penniretepora rectodichotoma* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 46, 47, pl. 24, fig.

4.
Holotype: DGHH no. 5064-A**
The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian
- Penniretepora regularis* Sakagami, 1963**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 17, 18, pl. 3, fig. 4, text-fig. 3.
Holotype: DGHH no. 11215**
Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan
The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous
- Penniretepora siamensis* Sakagami, 1966**
Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 164, pl. 6, fig. 7.
Holotype: WKM-2-17s** (Surface specimen)
Locality WKM-2 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian
- Penniretepora sikii* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 48, pl. 24, fig. 6.
Holotype: DGHH no. 8134-A**
The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian
- Penniretepora tenuis* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 47, pl. 24, fig. 1.
Holotype: DGHH no. 5063-C**
The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian
- Penniretepora tropica* Sakagami, 1966**
Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 162, 163, pl. 6, fig. 5.
Holotype: WKM-2-15s** (Surface specimen)
Locality WKM-2 of Ko Muk (island), peninsular Thailand
The Rat Buri Limestone
Early Permian
- Penniretepora zigzag* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 48, pl. 24, fig. 7.
Holotype: DGHH no. 8001-B**
A limestone slab collected at Ayabe City, Kyoto Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian
- Permolioclema akiyoshiensis* Sakagami and Sugimura, 2000**
Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 13, 14, pl. 6, figs. 4, 5; pl. 7, figs. 1-6.
Holotype: ASM no. 91696a
Locality S124 situated along 316 National Road at ca. 300 m northeast of the Shigeyasu railway station, Yamaguchi Prefecture, Japan
The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group
Late Permian
- Polypora abadehensis* Sakagami, 1980**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 118, p. 280, 281, pl. 33, fig. 1.
Holotype: DESC no. 80028**
C-13 bed of Unit 4 in Section C, Abadeh region, central Iran
Late Permian ("Abadehian")
- Polypora eliasi* Sakagami and Akagi, 1961**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 43, p. 108-110, pl. 15, figs. 1, 2; text-fig. 2.
Holotype:TKD no. 22236
Miharano in the eastern part of the Taishaku district, Tojo-machi, Hida-gun, Hiroshima Prefecture, Japan
The *Pseudoschwagerina* zone, the Miharano Formation
Early Permian
- Polypora elongata* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers no. 7, p. 40, 41, pl. 17, fig. 6.
Holotype: DGHH no. 8135-B**
The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian
- Polypora endoi* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers no. 7, p. 38, pl. 20, figs. 3-5.
Holotype: DGHH no. S-3B**
Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan
The *Parafusulina* zone, the Kanokura Formation
Early Permian
- Polypora fujimotoi* Sakagami, 1961**
Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 37, 38, pl. 19, figs. 1-6; pl. 20, fig. 1.
Holotype: DGHH no. S-2A** (Surface specimen)
Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan
The *Parafusulina* zone, the Kanokura Formation
Early Permian
- Polypora fujitae* Sakagami, 1963**
Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 15., pl. 3, fig. 1.

Holotype: DGHH no. 11218-A**
Nishiiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan
The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Polypora hataii* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 38, pl. 20, fig. 2.
Holotype: DGHH no. S-1**
Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan
The *Parafusulina* zone, the Kanokura Formation
Early Permian

***Polypora longifenestrula* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 40, pl. 17, fig. 7; pl. 18, fig. 2.
Holotype: DGHH no. 8121-A**
The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan
The *Lepidolina-Yabeina* zone
Late Permian

***Polypora manchoukuoensis* Minato, 1943**

Jour. Fac. Sci., Hokkaido Imp. Univ., ser. 4, vol. 7, no. 1, p. 51, pl. 6(1), figs. 5-7, pl. 7(2), fig. 1.
Holotype: UH no. 8955
Kai-shantun, Province Chientao, NE China
The Toman Formation
Middle Permian

***Polypora ovalifenestrata* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 16, 17, pl. 4, fig. 6, pl. 5, figs. 1-3.
Holotype: DGHH no. 8702**
Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan
The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Polypora polyclada* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 236, pl. 37, fig. 10.
Holotype: DGHH no. 113** (Surface specimen)
Sakamotozawa, Ofunato City, Iwate Prefecture, Japan
The Hikoroichi Series
Early Carboniferous (Tournaisian-Visean)

***Polypora quadricella* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 78, 79, pl. 13, figs. 3, 4.
Holotype: KCK-23**
Khao Chong Krachok, northern part of Changwat Prachuap Kiri Khan, peninsular Thailand

The Rat Buri Limestone
Early Permian

***Polypora striata* Sakagami, 1980**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 118, p. 283, pl. 33, fig. 2.
Holotype: DGHH no. DESC-80031a**
C-15 bed of Unit-4 in Section C, Abadeh region, central Iran
Late Permian ("Abadehian")

***Polypora sugiyamae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 39, pl. 21, figs. 1-6.
Holotype: DGHH no. S-6** (Surface specimen)
Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan
The *Parafusulina* zone, the Kanokura Formation
Early Permian

***Polypora toyokoe* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 39, pl. 21, fig. 7; pl. 22, figs. 6, 7.
Holotype: DGHH no. S-21A** (Surface specimen)
Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan
The *Parafusulina* zone, the Kanokura Formation
Early Permian

***Prismopora deformis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 22, 23, pl. 8, figs. 3-6.
Holotype: DGHH no. 8101-D**
The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line., Kyoto Prefecture, Japan
The *Yabeina-Lepidolina* zone
Late Permian

***Prismopora kuzuensis* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 23, pl. 8, figs. 7-9.
Holotype: DGHH no. 6210-A**
The lower member of the Kuzuu limestone at Izuru, Terao-mura, Shimotsuga-gun, Tochigi Prefecture, Japan
The *Parafusulina* zone
Early Permian

***Prismopora nipponica* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 325, 326, pl. 49, figs. 8-10.
Holotype: DGHH no. 11250**
Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan
The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Protoretepora hayasakae* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 18, 19, pl. 3, figs. 8, 9.

Holotype: DGHH no. 11279** (Surface specimen)

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone

Middle Carboniferous

***Protoretepora lamellata* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 5, p. 65, 66, pl. 10, figs. 5-7.

Holotype: KTR-4**

Khao Ta Mong Rai near Ban Nong Rai, ca. 5 km northeast of Changwat Prachuap Khiri Khan, peninsular Thailand

The Rat Buri Limestone

Early Permian

***Pseudobatosomella awahensis* Sakagami, 1973**

Geol. Palaeont. Southeast Asia, vol. 12, p. 68, 69, pl. 8, figs. 1-4.

Holotype: KAQ-4**

The Kampong Awah quarry, ca. a half mile south between the 100 and 101 mile points from Kuala Lumpur of Temerloh-Maran road, Pahan, Malaya

The *Lepidolina-Yabeina* zone

Late Permian

***Pseudobatosomella kobayashii* Sakagami, 1972**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 85, p. 275-277, pl. 33, figs. 1-6.

Holotype: FEEU no. 1001**

Kusaka, Sakawa-cho, Takaoka-gun, Kochi Prefecture, Japan

The *Oxytoma-Mytilus* bed of the Kochigatani Series

Late Triassic (Carnian)

***Pseudobatosomella kuramotoi* Sakagami and Sugimura, 2000**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 35, p. 11, 12, pl. 5, figs. 4-6.

Holotype: ASM no. 91651a

Locality S124 situated along 316 National Road at ca. 300 m northeast of the Shigeyasu railway station, Yamaguchi Prefecture, Japan

The *Yabeina-Lepidolina* zone of the Akiyoshi Limestone Group

Late Permian

***Pseudobatosomella micropora* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 258-260, figs. 19-1 - 4.

Holotype: DESC no. 95045**

Yaurichambi, ca. 40 km west of La Paz City, Bolivia

Lower part of *Eoparafusulina* zone, the Copacabana Group

Early Permian

***Pseudobatosomella miyanoensis* Sugimura and Sugiyama, 1990**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 25, p. 33, 34, pl. 7, figs. 3-6, text-figs. 2A-a, 2A-b.

Holotype: ASM no. 98249a-c

Chichi-iwa, about 2.6 km NNW of Miyano railway station of Yamaguchi line, Yamaguchi City,

Yamaguchi Prefecture, Japan

The Suzumiyama Formation (Permian)

Early-Middle Carboniferous

***Pseudobatosomella multidiaphragma* Sakagami, 1975**

Geol. Palaeont. Southeast Asia, vol. 16, p. 36,37, pl. 4, figs. 1-4.

Holotype: WBP-1a**

A limestone outcrop at the east side of Khao Hin Kling, ca. 15 km west from Point km 333 on the new road from Chai Badan to Petchabun, north-central Thailand

Late Permian

***Pseudobatosomella yanagidai* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 260, figs. 19-6, 7.

Holotype: DESC no. 95108**

Ancoraimes, ca. 110 km NW of La Paz City, northern side of the Titicaca Lake, Bolivia

Lower part of *Eoparafusulina* zone, the Copacabana Group

Early Permian

***Ramipora ambigua* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 24, 25, pl. 9, figs. 1, 2.

Holotype: DGHH no. 5004-A**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Rhabdomeson nakazawae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, 50, Pl. 25, Figs. 1, 2.

Holotype: DGHH no. 8135-C**

The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Rhabdomeson newelli* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Palaeont.), vol. 24, nos. 3, 4, p. 172-174, figs. 6-1 -6; 7-1 -3.

Holotype: NSM PA no. 14144c

The southern side of the Tarma-Oroya road at ca. 4 km west of the center of Tarma City, Peru

The Tarma Limestone

Middle Carboniferous (Desmoinesian)

***Rhabdomeson ofukuensis* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 21, 22, pl. 7, fig. 1, pl. 8, figs. 7, 9.

Holotype: DGHH no. 8741**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Rhabdomeson yabei* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 19, pl. 3, fig. 7.

Holotype: DGHH no. 11202**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone

Middle Carboniferous

***Rhombocladia nakornsri* Sakagami, 1999**

Bull. Kitakyushu Mus. Nat. Hist., no. 18, p. 94, pl. 23, figs. 4-8.

Holotype: KMNH IvP no. 600,021c

Locality K of the Khao Hin Kling area at the west side of Highway 21, ca. 50 km south of Phetchabun, Thailand

Permian (Artinskian to Guadalupian)

***Rhombopora charasensis* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 44, 45, pl. 5, figs. 7-10.

Holotype: SBC-25b**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Rhombopora kawabei* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 262, figs. 2-3 - 6.

Holotype: DESC no. 95113**

Ancoraimes, ca. 110 km NW of La Paz City, northern side of the Titicaca Lake, Bolivia

Lower part of *Eoparafusulina* zone, the Copacabana Group

Early Permian

***Rhombopora murthyi* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 42, 43, pl. 5, figs. 1-6.

Holotype: SBC-39a**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Saffordotaxis morikawae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 51, pl. 25, figs. 3-5.

Holotype: DGHH no. 5210-A**

The d member of the Iwaizaki limestone, Hashigami-mura,

Motoyoshi-gun, Miyagi Prefecture, Japan

The *Parafusulina* zone

Early Permian

***Saffordotaxis yanagidae* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 299-301, pl. 45, figs. 1-4.

Holotype: DGHH no. 13028**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group

Early Carboniferous

***Septopora andeana* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 276, figs. 8-1, 2.

Holotype: DESC no. 95035**

Yaurichambi, ca. 40 km west of La Paz City, Bolivia

Upper part of *Pseudoschwagerina* zone, the Copacabana Group

Early Permian

***Septopora kamakurae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 43, 44, pl. 22, figs. 3-5.

Holotype: DGHH no. 8117-A**

The Takauchi limestone at about 4.5 km west of Shimoyakuno station of San-in RR line, Kyoto Prefecture, Japan

The *Lepidolina-Yabeina* zone

Late Permian

***Septopora kawamatae* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 44, 45, pl. 23, figs. 2-4.

Holotype: DGHH no. S-24A**

Sigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan

The *Parafusulina* zone, the Kanokura Formation

Early Permian

***Septopora tarazi* Sakagami, 1980**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 118, p. 286-288, pl. 33, figs. 7, 8.

Holotype: DESC no. 80038**

Abadeh region, central Iran

D-16 bed of Unit-3 in Section D

Late Permian ("Guadalupian")

***Stenodiscus alti plana* Sakagami, 1995**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 180, p. 250-252, figs. 15-1 - 3.

Holotype: DESC no. 95140**

Matilde, ca. 140 km NW of La Paz City, northern side of the Titicaca Lake, Bolivia

Lower part of *Eoparafusulina* zone, the Copacabana Group

Early Permian

***Stenopora akagoensis* Sugimura and Ota, 1971**

Bull. Akiyoshi-dai Sci. Mus., no. 7, p. 58, 59, pl. 9, figs. 1-10, text-fig. 2a-c.

Holotype: ASM no. 9159A

A limestone outcrop in Uebatake, about 0.8 km NE of Hachiman-ike (pond), Mito-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Nagatophyllum satoi* zone, the Akiyoshi Limestone Group
Early Carboniferous

***Stenopora nishiyamensis* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 48, p. 326, pl. 50, figs. 1, 2.

Holotype: DGHH no. 11234**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Stenopora pusilimonila* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 298, 299, pl. 44, figs. 4, 5, 9.

Holotype: DGHH no. 13018-A**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group
Early Carboniferous

***Stenopora toriyamai* Sugimura and Ota, 1980**

Bull. Akiyoshi-dai Mus. Nat. Hist., no. 15, p. 55-57, pl. 5, figs. 1-4, text-Fig. 5A, B.

Holotype: ASM no. 90252

A limestone outcrop, about 1.25 km SSW of Irimi, Mine City, Yamaguchi Prefecture, Japan

The *Pseudofusulina ambigua* zone, the Akiyoshi Limestone Group
Early Permian

***Streblascopora amabilis* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 20, 21, pl. 4, figs. 1-3.

Holotype: DGHH no. 11272**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Streblascopora antiqua* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 301, 302, pl. 45, figs. 5, 6, 13.

Holotype: DGHH no. 13002**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho,

Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group
Early Carboniferous

***Streblascopora delicatula* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 52, pl. 25, figs. 7-10; pl. 26, figs. 1-18; pl. 27, figs. 1-5.

Holotype: DGHH no. 8013-A**

The h member of the Iwaizaki limestone, Hashigami-mura, Motoyoshi-gun, Miyagi Prefecture, Japan

The *Lepidolina-Yabeina* zone
Late Permian

***Streblascopora diaphragma* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 18-20, pl. 6, figs. 3-7, pl. 8, fig. 6.

Holotype: DGHH no. 8703**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group
Early Permian

***Streblascopora exillis* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 64, 65, pl. 12, figs. 4-8.

Holotype: WKM-2-70c**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone
Early Permian

***Streblascopora grossa* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 21, pl. 4, figs. 4, 5.

Holotype: DGHH no. 11241-A**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone
Middle Carboniferous

***Streblascopora incaica* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 3, 4, p. 176-179, figs. 9-1 - 6.

Holotype: NSM PA no. 14144h

The southern side of the Tarma-Oroya road at ca. 4 km west of the center of Tarma City, Peru

The Tarma Limestone
Middle Carboniferous (Desmoinesian)

***Streblascopora irianica* Sakagami, 2000**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 26, nos. 3, 4, p. 155, 156, figs. 7-1-3.

Holotype: NSM PA no. 14738b

Locality no. 80CP535B located in NW part of Waghete 1:250,000 map sheet area in Irian Jaya, Indonesia

The Aiduna Formation of the Aifam Group
Middle Permian

***Streblascopora komukensis* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 62-64, pl. 12, figs. 1-3.

Holotype: WKM-2-79b**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Streblascopora lineata* Sakagami and Akagi, 1961**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 43, p. 111, pl. 15, figs. 5, 6.

Holotype: TKD no. 22240

Miharano in the eastern part of the Taishaku district, Tojo-machi, Hida-gun, Hiroshima Prefecture, Japan

The *Pseudoschwagerina* zone, the Miharano Formation

Early Permian

***Streblascopora ratburiensis* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 59-61, pl. 11, fig. 6.

Holotype: Khao Phrik-3-8**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

***Streblascopora supergrossa* Sakagami, 1964**

Bull. Akiyoshi-dai Sci. Mus., no. 3, p. 20, 21, pl. 7, figs. 2, 3, pl. 8, fig. 10.

Holotype: DGHH no. 8775**

Shigeyasu quarry, Mine City, Yamaguchi Prefecture, Japan

The *Parafusulina kaerimizensis* zone, the Akiyoshi Limestone Group

Early Permian

***Streblascopora superminor* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 46, 47, pl. 6, figs. 5-8.

Holotype: SBC-45b**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Streblotrypa? crassa* Sakagami, 1968**

Geol. Palaeont. Southeast Asia, vol. 4, p. 58, 59, pl. 11, fig. 8.

Holotype: Khao Phrik-3-18**

Khao Phrik, ca. 13 km west of Rat Buri, at the neck of the peninsular Thailand

The Rat Buri Limestone

Early Permian

***Streblotrypa elegans* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 65, 66, pl. 13, figs.

5-9.

Holotype: WKM-2-83b**

Locality WKM of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Streblotrypa? thaiensis* Sakagami, 1970**

Geol. Palaeont. Southeast Asia, vol. 8, p. 66, 67, pl. 13, figs. 1-4.

Holotype: WKM-2-78**

Locality WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Streblotrypella amicula* Sakagami, 1962**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 46, p. 240, 241, pl. 36, figs. 7-9.

Holotype: DGHH no. 11001**

Choanji, Ofunato City, Iwate Prefecture, Japan

The Hikoroichi Series

Early Carboniferous (Tournaisian-Visean)

***Streblotrypella astrovae* Sakagami, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 56, p. 302, 303, pl. 45, figs. 7, 8.

Holotype: DGHH no. 13026**

Uzura quarry, about 1.1 km ENE of Yowara, Shuho-cho, Mine-gun, Yamaguchi Prefecture, Japan

The *Millerella yowarensis* zone, the Akiyoshi Limestone Group

Early Carboniferous

***Sulcoretepora complicata* Sakagami, 1963**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 49, p. 22, 23, pl. 4, fig. 7.

Holotype: DGHH no. 11274**

Nishiyama, Omi-cho, Nishikubiki-gun, Niigata Prefecture, Japan

The *Profusulinella* zone, the Omi Limestone

Middle Carboniferous

***Sulcoretepora malayensis* Sakagami, 1972**

Geol. Palaeont. Southeast Asia, vol. 10, p. 47, 48, pl. 6, figs. 9-13.

Holotype: SBC-39b**

Bukit Charas limestone hill, ca. 15 miles WNW of Kuantan, Pahang, Malaya

Early Carboniferous

***Sulcoretepora nipponica* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 55, pl. 28, figs. 5-8; pl. 29, figs. 1-3; pl. 30, figs. 1-7.

Holotype: DGHH no. S-37** (Surface specimen)

Shigejizawa valley of Kamiyatsuse, northern part of Kesen-numa City, Miyagi Prefecture, Japan

The *Parafusulina* zone, the Kanokura Formation
Early Permian

***Sulcoretopora thailandica* Sakagami, 1966**

Jap. Jour. Geol. Geogr., vol. 37, nos. 2-4, p. 167, 168, pl. 6, figs. 13-15.

Holotype: WKM-2-07a** (Surface specimen)

Locality: WKM-2 of Ko Muk (island), peninsular Thailand

The Rat Buri Limestone

Early Permian

***Sulcoretopora zomekiensis* Sugimura, 1974**

Bull. Akiyoshi-dai Sci. Mus., no. 10, p. 6-8, pl. 2, figs. 4-7.

Holotype: ASM no. 9908

A limestone outcrop, about 0.3 km north of Ikumo tunnel,

Ikumo-naka, Ato-cho, Abu-gun, Yamaguchi Prefecture, Japan

The *Sumatrina annae* zone, the Zomeki Limestone

Late Permian

***Tabulipora ellesmerensis* Sakagami, 1998**

Bull. Nat. Sci. Mus., ser. C (Geol. & Paleont.), vol. 24, nos. 1, 2, p. 75-77, fig. 3-6, figs. 4-3 - 5.

Holotype: NSM PA no. 14043

A limestone block collected near Cape Joseph Henry (64° 00'W, 82° 44'N), North Ellesmere Island, Canadian Arctic Archipelago

Early Permian (Artinskian)

***Thamniscus? problematicus* Sakagami, 1961**

Palaeont. Soc. Japan, Spec. Papers, no. 7, p. 42, 43, pl. 22, fig. 2.

Holotype: DGHH no. 6507-A**

An impure tuffaceous limestone exposed at the sea shore near the entrance of Koshirazu tunnel of Hokuriku railroad, Niigata Prefecture, Japan

The *Pseudoschwagerina* zone

Early Permian

Cenozoic Bryozoa

Naotomo Kaneko

Geological Survey of Japan/AIST, Tsukuba 305-8567, Japan

Adeona nipponica Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 263, pl. 33, fig. 11

Holotype: IGPS no. 78042

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

Aechmella globosa Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 235, pl. 28, Figs. 11, 12

Holotype: IGPS no. 59219

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

Alderina hanzawai Kataoka, 1957

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.149, pl. 22, fig. 1

Holotype: IGPS no. 77397

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 ° 35.4' E)

Daishaka Formation

Pliocene

Amphiblestrum canui Sakakura, 1935

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 9, pl. 1, fig. 9, Text-fig. 1

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Amphibrestrum ryukyuense Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 228-229, pl. 26, fig. 10

Holotype: IGPS no. 59210

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

Antropora daishakaensis Kataoka, 1957

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.148, pl. 22,

fig. 7

Holotype: IGPS no. 77395

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 ° 35.4' E)

Daishaka Formation

Pliocene

Antropora hataii Kataoka, 1957

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.148-149, pl. 22, fig. 4

Holotype: IGPS no. 77396

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 ° 35.4' E)

Daishaka Formation

Pliocene

Wrong type specimen number is described.

Aplousina septulata Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 227, pl. 25, fig. 1, pl. 26, fig. 3

Holotype: IGPS no. 59206

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

Caberea narusawaense Hayami, 1975

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 103, pl. 13, fig. 14

Holotype: IGPS no. 92126

Kitakanegasawa, Fukaura-cho, Nishi-Tsugaru-gun, Aomori Prefecture (40 °44.7' N, 140 °5.1' E)

Narusawa Formation

Pliocene

Callopora asanoi Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 228, pl. 25, fig. 4

Holotype: IGPS no. 78010

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

Calloporina biavicularia Kataoka, 1961

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 255, pl. 33, fig. 2

Holotype: IGPS no. 59278

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Calloporina hayamiae* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 98-100, fig. 9A

Holotype: CBM-PI-0001425

Nishiyatsu, Kimitsu City, Chiba Prefecture (35 °18.7' N, 139 °59.2' E)

Jizodo Formation

Middle Pleistocene

***Calloporina hayamiae* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 98-100

Paratype: CBM-PI-0001426

Nishiyatsu, Kimitsu City, Chiba Prefecture (35 °18.7' N, 139 °59.2' E)

Jizodo Formation

Middle Pleistocene

***Cellaria hataii* Hayami, 1973**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Special vol., no. 6, p. 396, fig. 5

Holotype: IGPS no. 32234

Osugizaki, Nanao City, Ishikawa Prefecture (37 °3.8' N, 136 °57.9' E)

Nanao Calcareous Sandstone

Early Miocene

***Cellaria nanaoensis* Hayami, 1973**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), Special vol., no. 6, p. 395-396, fig. 4

Holotype: IGPS no. 92233

Osugizaki, Nanao City, Ishikawa Prefecture (37 °3.8' N, 136 °57.9' E)

Nanao Calcareous Sandstone

Early Miocene

***Celleporaria kataokai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 120, pl. 18, fig. 2

Holotype: IGPS no. 92218

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***Celleporina notoense* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 121, pl. 18, fig. 5

Holotype: IGPS no. 92223

Hiradoko, Shoin-cho, Suzu City, Ishikawa Prefecture (37 °27.4' N, 137 °18.2' E)

Hiradoko Formation

Pleistocene

***Chaperia octspinosa* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 232-233, pl. 26, fig. 5

Holotype: IGPS no. 59283

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Coleopora asanoi* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 244, pl. 32, fig. 9

Holotype: IGPS no. 59236

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Coleopora tsugaruensis* Kataoka, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.149-150, pl. 22, fig. 6

Holotype: IGPS no. 77399

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 °35.4' E)

Daishaka Formation

Pliocene

***Coleopora tsugaruensis masudai* Kataoka, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.150, pl. 22, fig. 3

Holotype: IGPS no. 77400

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 °35.4' E)

Daishaka Formation

Pliocene

***Conescharellina crescens* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 35, Text-fig. 9

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Conescharellina kadusensis* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 35-36, Text-fig. 10

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Copidozoum andenense* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 99, pl. 13, Figs. 7, 16

Holotype: IGPS no. 92110

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***Copidozoum hiradokoense* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 99, pl. 13, fig. 15

Holotype: IGPS no. 92111

Hiradoko, Shoin-cho, Suzu City, Ishikawa Prefecture (37 °27.4' N, 137 °18.2' E)

Hiradoko Formation

Pleistocene

***Copidozoum kikajimense* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 229, pl. 25, fig. 12

Holotype: IGPS no. 59212

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Crassimarginatella microeciium* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 230-231, pl. 26, fig. 6

Holotype: IGPS no. 59214

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Crassimarginatella parviavicularia* Kataoka, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.149, pl. 22, fig. 2

Holotype: IGPS no. 77398

The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 °35.4' E)

Daishaka Formation

Pliocene

***Cribrilaria biavicularia* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 242, pl. 27, fig. 5

Holotype: IGPS no. 59233

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Cupuladria elongata* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 6-7, pl. 1, Figs. 1-3

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),

Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Cupuladria microdenticulata* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 225, pl. 29, Figs. 1, 2

Holotype: IGPS no. 59205

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Drepanophora ? moniwaensis* Hayami, 1976**

Saito Ho-on Kai, Mus. Res. Bull., no. 44, p.46, pl. 4, fig. 3

Holotype: EEG Coll. Cat. no. B0002

A restricted area along the Natori River in the southern part of Sendai City, Miyagi Prefecture (38 °12.8' N, 140 °47.4' E)

Moniwa Formation

Middle Miocene

***Emballothecha kikajimensis* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 250, pl. 33, fig. 8

Holotype: IGPS no. 78033

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Emballothecha sendaiensis* Hayami, 1976**

Saito Ho-on Kai, Mus. Res. Bull., no. 44, p.42, pl. 4, fig. 5

Holotype: EEG Coll. Cat. no. B0001

A restricted area along the Natori River in the southern part of Sendai City, Miyagi Prefecture (38 °12.8' N, 140 °47.4' E)

Moniwa Formation

Middle Miocene

***Entalophora nipponica* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 40

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),

Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Escharoides hataii* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 111-112, pl. 16, fig. 1

Holotype: IGPS no. 92164
 Kamayachi, Kotohama-mura (Wakami-cho), Minami-Akita-gun,
 Akita Prefecture (40 °1.7' N, 139 °55.9' E)
 Kamayachi Formation
 Pleistocene

***Escharoides hataii* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 111-112, pl. 16, fig. 2; pl. 18, fig. 8
 Paratype: IGPS no. 92165
 Tanegawa, Imagane-cho, Setana-gun, Hokkaido (42 °25.3' N, 140 °4.1' E)
 Kaigarabashi Sandstone Member of the Kun'nui Formation
 Miocene

***Figularia ryukyuensis* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 243, pl. 31, fig. 1
 Holotype: IGPS no. 78022
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Filifascigera grandiosa* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 38, pl. 6, fig. 8
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 91

***Filisparsa ortmanni* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 38, pl. 7, fig. 1
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene

***Floridinella kamikatetsuensis* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 236, pl. 28, fig. 10
 Paratype: IGPS no. 59222
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Floridinella kamikatetsuensis* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 236

Holotype: IGPS no. 78013
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Hemicyclopora noshiroensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 119, pl. 17, fig. 9
 Holotype: IGPS no. 92208
 Shimonakazawa, Noshiro City, Akita Prefecture (40 °9.6' N, 140 °5.3' E)
 Sasaoka Formation
 Pliocene

***Hippomenella konnoi* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 252-253, pl. 35, fig. 2
 Holotype: IGPS no. 78030
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Hippopetraliella (?) pirikaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 105, pl. 14, fig. 10
 Holotype: IGPS no. 92140
 Pirika, Imagane-cho, Setana-gun, Hokkaido (42 °28.0' N, 140 °12.0' E)
 Setana Formation
 Pliocene

***Hippopodina feegensis bilamella* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 245, pl. 35, fig. 1
 Holotype: IGPS no. 59241
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Hippoporella gigantea* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 253, pl. 35, fig. 7
 Holotype: IGPS no. 59274
 The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Hippoporella huziokai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 110-111, pl. 15, fig. 5

Holotype: IGPS no. 92161
 Kamayachi, Kotohama-mura (Wakami-cho), Minami-Akita-gun,
 Akita Prefecture (40 °1.7' N, 139 °55.9' E)
 Kamayachi Formation
 Pleistocene

***Hippoporina purpurata* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 90, fig. 5C
 Holotype: CBM-PI-0001411
 Nishiyatsu, Kimitsu City, Chiba Prefecture (35 °18.7' N, 139 °
 59.2' E)
 Jizodo Formation
 Middle Pleistocene

***Hippoporina purpurata* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 90
 Paratype: CBM-PI-0001412
 Nishiyatsu, Kimitsu City, Chiba Prefecture (35 °18.7' N, 139 °
 59.2' E)
 Jizodo Formation
 Middle Pleistocene

***Hippoporina yabei* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 251,
 pl. 35, fig. 3
 Holotype: IGPS no. 59276
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Holoporella subdescostilsii* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 32, pl.
 6, fig. 2
 Type specimen number is not given
 Atebi, Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba
 Prefecture (35 °21.4' N, 140 °5.4' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene

***Jullienula kaigarabashiensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 104,
 pl. 19, fig. 6
 Holotype: IGPS no. 92131
 Tanegawa, Imagane-cho, Setana-gun, Hokkaido (42 °25.3' N,
 140 °4.1' E)
 Kaigarabashi Sandstone Member of the Kun'nui Formation
 Miocene

***Jullienula kaigarabashiensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 104,
 pl. 19, fig. 9
 Paratype: IGPS no. 86787
 Tanegawa, Imagane-cho, Setana-gun, Hokkaido (42 °25.3' N,

140 °4.1' E)
 Kaigarabashi Sandstone Member of the Kun'nui Formation
 Miocene

***Labioporella elegans* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 13, pl.
 2, fig. 6, Text-fig. 4
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),
 Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 381

***Labioporella hexagona* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p.
 237-238, pl. 28, fig. 4
 Holotype: IGPS no. 59227
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Labioporella increnulata* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 238,
 pl. 28, fig. 5
 Holotype: IGPS no. 59225
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Lacerna granulosa* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 22-23,
 pl. 4, Figs. 2, 5
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),
 Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 2, 29

***Lagenipora daishakaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p.
 119-120, pl. 18, fig. 6
 Holotype: IGPS no. 92214
 Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori
 Prefecture (40 °46.1' N, 140 °35.4' E)
 Daishaka Formation
 Pliocene

***Lagenipora nipponica* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 30, pl.
 5, Figs. 1, 7

Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),
 Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 136,193

***Lepraliella biporosa* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 100-101, fig. 9B
 Holotype: CBM-PI-0001427
 Owada, Kimitsu City, Chiba Prefecture (35 °20.4' N, 139 °52.8'
 E)
 Jizodo Formation
 Middle Pleistocene

***Lepraliella biporosa* Arakawa, 1995**

Nat. Hist. Res., vol. 3, no. 2, p. 100-101
 Paratype: CBM-PI-0001428
 Owada, Kimitsu City, Chiba Prefecture (35 °20.4' N, 139 °52.8'
 E)
 Jizodo Formation
 Middle Pleistocene

***Membraniporella subpetasus* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 17, pl.
 3, fig. 9
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),
 Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 191

***Microporella pirikaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 112,
 pl. 16, fig. 6
 Holotype: IGPS no. 92172
 An exposure behind the Pirika Primary and Secondary Schools,
 Pirika, Imagane-cho, Setana-gun, Hokkaido (42 °28.6' N, 140 °
 12.3' E)
 Setana Formation
 Pliocene

***Monoporella sulcoecia* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p.
 239-240, pl. 32, fig. 7
 Holotype: IGPS no. 78017
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Monoporella sulcoecia* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p.

239-240

Paratype: IGPS no. 59232
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Mucropetraliella shibikawaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p.
 105-106, pl. 14, fig. 8
 Holotype: IGPS no. 92141
 Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)
 Shibikawa Formation
 Pliocene

***Mucropetraliella tenuis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 106,
 pl. 14, fig. 4
 Holotype: IGPS no. 92143
 Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)
 Shibikawa Formation
 Pliocene

***Mucropetraliella unimucronata* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 106,
 pl. 14, fig. 5
 Holotype: IGPS no. 92142
 Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)
 Shibikawa Formation
 Pliocene

***Osthimosia multiavicularia* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 32-33,
 pl. 6, fig. 1
 Type specimen number is not given
 Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City),
 Chiba Prefecture (35 °21.9' N, 140 °6.1' E)
 Dizodo (Jizodo) Formation
 Middle Pleistocene
 Author's collection number(s): 30

***Pachyclethonia hanzawae* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p.
 245-246, pl. 34, fig. 7
 Holotype: IGPS no. 78027
 The cliff of 500 m north of Kamikatetsu, Kikai-cho,
 Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
 Ryukyu Limestone (Wan Formation)
 Late Pleistocene

***Parasmittina aviculoumbonata* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 256,
 pl. 36, fig. 8
 Holotype: IGPS no. 59245

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)
Late Pleistocene

***Parasmittina chikagawaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 115, pl. 18, fig. 4
Holotype: IGPS no. 92201
Chikagawa, Mutsu City, Aomori Prefecture (41 °11.4' N, 141 ° 17.1' E)
Hamada Formation
Pliocene

***Parasmittina masudai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 115-116, pl. 19, fig. 3
Holotype: IGPS no. 92202
Kokubu, Nanao City, Ishikawa Prefecture (37 °1.6' N, 136 °57.3' E)
Nanao Calcareous Sandstone
Early Miocene

***Parasmittina okadai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 116, pl. 18, fig. 9
Holotype: IGPS no. 92199
Tanegawa, Imagane-cho, Setana-gun, Hokkaido (42 °25.3' N, 140 °4.1' E)
Kaigarabashi Sandstone Member of the Kun'nui Formation
Miocene

***Parasmittina peristoaviculata* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 256-257, pl. 34, fig. 4
Holotype: IGPS no. 78037
The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)
Late Pleistocene

***Parasmittina plana* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 257, pl. 34, fig. 1
Holotype: IGPS no. 59248
The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)
Late Pleistocene

***Parasmittina shibikawaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 116, pl. 19, fig. 4
Holotype: IGPS no. 92203

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)
Shibikawa Formation
Pliocene

***Parasmittina trispinosa aomoriensis* Kataoka, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.151, pl. 22, fig. 9
Holotype: IGPS no. 77402
The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 ° 35.4' E)
Daishaka Formation
Pliocene

***Petraliella asanoi* Kataoka, 1957**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 28, p.150-151, pl. 22, fig. 5
Holotype: IGPS no. 77401
The cliff of northwest of Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 ° 35.4' E)
Daishaka Formation
Pliocene

***Petraliella ramifica* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 246-247, pl. 31, fig. 2
Holotype: IGPS no. 78026
The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)
Ryukyu Limestone (Wan Formation)
Late Pleistocene

***Phylactellipora mawatarii* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 119, pl. 17, fig. 10
Holotype: IGPS no. 92210
Tanosawa, Fukaura-cho, Nishi-Tsugaru-gun, Aomori Prefecture (40 °45.4' N, 140 °2.2' E)
Tanosawa Formation
Miocene

***Porella concinna hanaishiensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 118, pl. 16, fig. 11
Holotype: IGPS no. 92191
Chinkope-gawa, Hanaishi, Imagane-cho, Setana-gun, Hokkaido (42 °26.3' N, 140 °10.4' E)
Setana Formation
Pliocene

***Reginella daruma* Sakakura, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 450, p. 69-97, Figs. 3, 4
Type specimen number is not given

Tako-machi, Katori-gun, Chiba Prefecture (35 °44.2' N, 140 ° 28.3' E)

Kioroshi Formation

Upper Pleistocene

Nos. enregistres: 2007, 2011

***Reginella kokubuensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 104-105, pl. 13, Figs. 17, 18

Holotype: IGPS no. 92133

Kokubu, Nanao City, Ishikawa Prefecture (37 °1.6' N, 136 °57.3' E)

Nanao Calcareous Sandstone

Early Miocene

***Retevirgula hataiana* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 101, pl. 13, fig. 9

Holotype: IGPS no. 92115

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***Rhamphonotus okadai* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 9-10, pl. 1, fig. 8, Text-fig. 2

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Rhamphostomella maekawaensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 117, pl. 17, fig. 5

Holotype: IGPS no. 92188

Maekawa, Mutsu City, Aomori Prefecture (41 °8.4' N, 141 °16.8' E)

Hamada Formation

Pliocene

***Rhamphostomella noshiroensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 117, pl. 16, fig. 10

Holotype: IGPS no. 92187

Shimonakazawa, Noshiro City, Akita Prefecture (40 °9.6' N, 140 °5.3' E)

Sasaoka Formation

Pliocene

***Rhamphostomella sakagami* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 117, pl. 117, fig. 1

Holotype: IGPS no. 92186

Daishaka, Namioka-cho, Minami-Tsugaru-gun, Aomori Prefecture (40 °46.1' N, 140 °35.4' E)

Daishaka Formation

Pliocene

***Rosseliana sibatai* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 11-12, pl. 2, Figs. 2-4

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Author's collection number(s): 97, 195

***Schismopora tokunagai* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 32, pl. 6, Figs. 3, 4

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Author's collection number(s): 239

***Schizopodrella spathulata* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 20-21, pl. 3, fig. 8, Text-fig. 6

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Schizoporella costulata* var. *distincta* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 19-20, pl. 3, Figs. 4, 5

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Author's collection number(s): 262

***Smittina nodai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 113-114, pl. 18, fig. 10

Holotype: IGPS no. 92178

Uchiboso (Tokyo Bay), Japan

From Tokyo Bay

Recent

***Smittina nodai* Hayami, 1975**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 82, p. 85, pl. 11, fig.

8

Paratype: IGPS no. 91500

Yagena (Yakena), Yonagusuku-son (Yonashiro-cho), Nakagami-gun, Okinawa Prefecture (26 °19.1' N, 127 °55.0' E)

Shinzato Tuff Member of the Shimajiri Formation (Shinzato Formation)

Pliocene (Pleistocene)

Described as *Smittina* sp. in Hayami (1971)***Smittina ordinata hanaishiensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 114, pl. 16, Figs. 12, 14

Holotype: IGPS no. 92176

Hanaishi, Imagane-cho, Setana-gun, Hokkaido (42 °26.6' N, 140 °10.1' E)

Setana Formation

Pliocene

***Smittina osburni* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 113, pl. 16, fig. 9

Holotype: IGPS no. 92179

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***Smittina reticulata* var. *okadai* Sakakura, 1938**

Jour. Geol. Soc. Japan, vol. 45, no. 450, p. 99

Type specimen number is not given

Tako-machi, Katori-gun, Chiba Prefecture (35 °44.2' N, 140 °28.3' E)

Kioroshi Formation

Upper Pleistocene

Nos. enregistres: 2005

***Smittipora ryukyuensis* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 234, pl. 33, fig. 10

Holotype: IGPS no. 59218

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Smittoidea matobai* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 114, pl. 16, fig. 13

Holotype: IGPS no. 92181

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***Smittoidea notoensis* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p.

114-115, pl. 16, fig. 8

Holotype: IGPS no. 92182

Hiradoko, Shoin-cho, Suzu City, Ishikawa Prefecture (37 °27.4' N, 137 °18.2' E)

Hiradoko Formation

Pleistocene

***Stephanocella hataii* Kataoka, 1961**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 32, no. 2, p. 253-254, pl. 33, fig. 4

Holotype: IGPS no. 59271

The cliff of 500 m north of Kamikatetsu, Kikai-cho, Oshima-gun, Kagoshima Prefecture (28 °17.0' N, 129 °57.0' E)

Ryukyu Limestone (Wan Formation)

Late Pleistocene

***Stomachetosella uniporosa* Hayami, 1975**

Tohoku Univ., Sci. Rep., 2nd Ser. (Geol.), vol. 45, no. 2, p. 107, pl. 14, fig. 1

Holotype: IGPS no. 92145

Anden, Oga City, Akita Prefecture (39 °58.3' N, 139 °51.3' E)

Shibikawa Formation

Pliocene

***'Tegella' kadusensis* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 8, pl. 1, Figs. 6, 7

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Author's collection number(s): 151, 223

***Thalamoporella dizodoensis* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 14, pl. 2, fig. 7, Text-fig. 5

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

***Verminaria areolae* Sakakura, 1935**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. II, vol. 4, Pt. 1, p. 12-13, pl. 2, fig. 5, Text-fig. 3

Type specimen number is not given

Dizodo (Jizodo), Makuta-mura, Kimitsu-gun (Kisarazu City), Chiba Prefecture (35 °21.9' N, 140 °6.1' E)

Dizodo (Jizodo) Formation

Middle Pleistocene

Author's collection number(s): 165

Crinoidea**Tatsuo Oji**

**Department of Earth and Planetary Science,
University of Tokyo
Tokyo 113-0033, Japan**

"Jumonji Series"

Lower Carboniferous

Pseudosaccocoma japonica Kobayashi, 1935

Japan. Jour. Geol. Geogr., 12(3-4), p. 72, pl. 12, figs. 1, 2.

Holotype: UMUT ME7031.

Torinosu Limestone,

Torinosu Limestone Formation

Late Jurassic

Actinocrinites higuchisawensis Minato, 1951

Jour. Fac. Sci. Hokkaido Univ., [4], 7, p. 358-359, pl. 1, fig. 16.

Holotype: UH no. ?

Higuchisawa, Ofunato-shi, Iwate Pref.

Hikoroichi Formation

Lower Carboniferous

Actinocrinites ohmoriensis Minato, 1951

Jour. Fac. Sci. Hokkaido Univ., [4], 7, p. 359-360, pl. 4, fig. 5.

Holotype: UH no. ?

Ohmori, Ofunato-shi, Iwate Pref.

Hikoroichi Formation

Lower Carboniferous

Akiyoshicrinus isensis Hashimoto, 1995

Bull. Akiyoshi-dai Mus. Nat. Hist., 30, p. 5-10, pl. 1, figs. 1-4,
pl. 2, figs. 1-5, pl. 3, figs. 1-5, pl. 4, figs. 1-5

Holotype: ASM no. 50001

Isa Quarry, Maruyama area, Isa-cho, Mine-shi, Yamaguchi
Prefecture

***Fusulinella biconica* Zone (Atokan), Akiyoshi Limestone**

Upper Carboniferous

Isocrinus (Chladocrinus) hanaii Oji, 1985

Palaeontology, 28(4), 636-640, pl. 77, figs. 1-4, pl. 78, figs. 1-5,
7, 8, pl. 79, figs. 1-7.

Holotype: UMUT ME6936.

Loc. Hn 0920, northern coast of Haibe, Tanohata-mura,
Shimohei-gun, Iwate Prefecture.

Hiraiga Formation

Upper Aptian

Issellicrinus ariakensis Yokoyama, 1911

Jour. Coll. Sci. Imp. Univ. Tokyo, 27, Art. 20, p. 5-6, pl. 1, fig.
6

Holotype: UMUT, CE 20003

Loc. Drilled core from Manda, Miike Coal-Field, Kumamoto
Prefecture

Manda Formation

Oligocene

Platycrinites asiatica Minato, 1951

Jour. Fac. Sci. Hokkaido Univ., [4], 7, p. 357-358, pl. 1, fig. 8,
pl. 4, figs. 2a, 2b.

Holotype: UH no. ?

Nashirosawa, Shimoarisu, Sumida-cho, Kesen-gun, Iwate Pref.

Echinoidea and Holothuroidea

Yoshibumi Kikuchi

Institute of Geoscience, University of Tsukuba,
Tsukuba 305-8571, Japan

Echinoidea

Allaster rotundatus Nisiyama, 1968

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 128, pl. 17, fig. 5; pl. 18, figs. 1, 4

Holotype: IGPS no. 73768

Near Nisho bridge, Hiratori-cho, Saru-gun, Hidaka-shi, Hokkaido, Japan (47° 39' 20" N, 142° 12' 10" E)

Takinoue Formation

Oligocene-Miocene

Allocentrotus japonicus Nisiyama, 1966

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 258, pl. 8, figs. 4, 10-14; pl. 9, figs. 1-2, 4-6

Holotype: IGPS no. 73798

Sea cliff below shrine at Tomiya, Takeoka, Futtsu-shi, Chiba Prefecture, Japan (35° 12' 52" N, 139° 51' 00" E)

Kurotaki Formation

Lower Pliocene

Aphelaster serotinus Tanaka and Shibata, 1961

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 42, p. 70, pl. 10, figs. 1-6, text-figs. 1-2

Holotype: GSJ no. 6092

Ishido, Ohinata, Saku-machi, Minami-Saku-gun, Nagano Prefecture, Japan

Ishido Formation

Cretaceous

Astriclypeus integer Yoshiwara, 1899

Jour. Geol. Soc. Tokyo, vol. 6, no. 65, p. 1-2, pl. 2, figs. 1-2

Syntype: Number ungiven

Minami-Tsuru-gun, Yamanashi Prefecture, Japan

Formation name ungiven

Miocene

Remark: See, Tokunaga (1903), Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 15, pl. 1, figs. 3-4; pl. 2, figs. 3-4

Astriclypeus mannii ambigenus Nisiyama, 1935

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 140, pl. 8, figs. 1-3

Holotype: SHM no. 6165

Tanosawa, near the railway station, Odose, Fukaura-machi, Nishi-Tsugaru-gun, Aomori Prefecture, Japan (40° 45' 07" N, 140° 02' 03" E)

Tanosawa Formation

Miocene

Astriclypeus mannii minoensis Morishita, 1952

Mem. Coll. Sci., Kyoto Univ., Ser. B, vol. 20, no. 2, p. 111, pl. 11, fig. 1

Holotype: JC no. 750001

Shukunohora, Hiyoshi-machi, Mizunami-shi, Gifu Prefecture, Japan

Shukunohora Sandstone

Miocene

Astrodapsis nipponicus Nisiyama, 1948

Jour. paleont., vol. 22, no. 5, p. 602, pl. 88, figs. 1-6, 8, 10-13

Holotype: IGPS no. 60326a

Southern margin of the tributary of the Mabechi-gawa, about 150 m east of the bridge connecting Fukuoka, Ninohe-shi, Iwate Prefecture, Japan (40° 13' 48" N, 141° 18' 56" E)

Suenomatsuyama Formation

Miocene-Pliocene

Balanocidaris japonica Nisiyama, 1966

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 166, pl. 1, figs. 15-18

Holotype: IGPS no. 73767

A point below Shohoji temple, Uonashi, Shirokawa-cho, Higashi-Uwa-gun, Ehime Prefecture, Japan (36° 22' 00" N, 132° 42' 27" E)

Torinosu Limestone

Upper Jurassic

Brissopsis luzonica cosibensis Nisiyama, 1968

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 280, pl. 25, figs. 5-6

Holotype: IGPS no. 73747

Sea-cliff of Shiba, Minato Ward, Yokohama-shi, Kanagawa Prefecture, Japan (35° 20' 00" N, 139° 38' 00" E)

Koshiba Formation

Pliocene

Brissopsis japonica Nisiyama, 1968

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 281, pl. 25, fig. 7; pl. 26, figs. 8-9

Holotype: IGPS no. 73774

Rail-road cutting near north entrance of tunnel 1 km north of Kazusa-Okubo railway station, Okubo, Ichihara-shi, Chiba Prefecture, Japan (35° 17' 18" N, 140° 08' 36" E)

Kokumoto Formation

Pliocene

Brissopsis makiyama Morishita, 1957

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 2, art. 4, p. 161, pl. 1, figs. 1-5

Holotype: JC no. 750008

Odose, Tanosawa-machi, Nishi-Tsugaru-gun, Aomori Prefecture, Japan

Formation name ungiven

Middle Miocene

***Brochopleurus pulcherrimus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 237, pl. 5, figs. 12-15; pl. 6, figs. 4-5

Holotype: IGPS no. 73719

Sea-side cliff under the main road about 500 m east of Myogane-zaki, Motona, Hota, Kyonan-machi, Awa-gun, Chiba Prefecture, Japan (35°09' 00" N, 139°49' 35" E)

Komayama Formation

Lower Pliocene or Miocene

***Cardiaster perorientalis* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 151, pl. 18, figs. 6-7

Holotype: IGPS no. 73747

Beside a bridge at Narufuji, Kofuji, Hiromi-cho, Kita-Uwa-gun, Ehime Prefecture, Japan (33°16' 00" N, 132°40' 34" E)

Miyakura (Furushiroyama) Formation

Cretaceous

***Chondrocidaris marianica* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 171, pl. 1, figs. 19-20

Holotype: IGPS no. 73740

Near Laulau, Saipan Island, Mariana (Ladrone) Islands, Micronesia, South Sea Islands

Donney Formation (*Eulepidina*-horizon)

Lower Miocene

***Coelopleurus singularis* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 205, pl. 1, figs. 21-23

Holotype: IGPS no. 73718

Sea shore north of Shirahama, Shimoda-shi, Shizuoka Prefecture, Japan (34°41' 00" N, 138°58'00" E)

Shirahama (Susaki) Formation

Probably Miocene

***Cottreaucorys (Cordastrum) sulcatus* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 175, pl. 18, figs. 10-11; pl. 20, fig. 2; text-figs. 65[40]a-c

Holotype: IGPS no. 73746

A bridge beside at Narufuji, Kofuji, Hiromi-cho, Kita-Uwa-gun, Ehime Prefecture, Japan (33°16' 00" N, 132°40' 34" E)

Miyakura (Furushiroyama) Formation

Cretaceous (Senomanian-Maastrichtian)

***Echinarachnius elongata* Nisiyama, 1940**

Jub. Publ. Commem. Prof. H. Yabe's 60th Birthday, vol. 2, p. 824, pl. 44, figs. 13-16; text-fig. 9

Holotype: IGPS no. 60329

A point of Chagama-zawa, Shiritoru-machi, Motodomari-gun, South Sakhalin, Russia

Kawabata (Sandstone) Formation?

Miocene

***Echinarachnius humilis* Nisiyama, 1968**

Palaeont. Soc. Spec. Pap., no. 13, p. 100, pl. 16, fig. 8

Holotype: IGPS no. 73775

A small cliff of creek about 500 m north of bridge at Inari, Taihei, Akita-shi, Akita Prefecture, Japan (39°44' 00" N, 140°13' 30" E)

Chokai Formation

Pliocene

***Echinarachnius ishioi* Morishita, 1950**

Jour. Geol. Soc. Japan, vol. 55, nos. 650-651, p. 257, figs. 2a-b

Syntype: Number ungiven.

Tagawa, Fukumitsu-machi, Nishi-Tonami-gun, Toyama Prefecture, Japan (36°40' 00" N, 136°50' 00" E)

Omma Formation

Pliocene

***Echinarachnius laganolithinus* Nisiyama, 1940**

Jub. Publ. Commem. Prof. H. Yabe's 60th Birthday, vol. 2, p. 830, pl. 44, fig. 21, pl. 45, figs. 1-9; text-fig. 12

Holotype: IGPS no. 60330

Road cliff south of Iwakura and north of Tayazawa, Wakimoto, Oga-shi, Akita Prefecture, Japan (39°55' 00" N, 139°53' 54" E)

Shibikawa Formation

Pliocene

***Echinarachnius microthyroides* Nisiyama, 1940**

Jubl. Commem. Prof. H. Yabe's 60th Birthday, vol. 2, p. 828, pl. 44, figs. 17-12; text-fig. 11

Holotype: IGPS no. 7900

A point of Nagamine, Fukuoka, Ninohe-shi, Iwate Prefecture, Japan (40°15' 00" N, 140°18' 00" E)

Suenomatsuyama (Nagamine) Formation

Upper Miocene or Lower Pliocene

***Echinarachnius minoensis* Morishita, 1955**

Mem. Coll. Sci., Kyoto Univ., Ser. B, vol. 22, no. 2, p. 229, pl. 11, figs. 5-7

Syntype: Number ungiven

Oike, Ikusaka-mura, Higashi-Chikuma-gun, Nagano Prefecture, Japan

Aoki Formation

Miocene

***Echinarachnius naganoensis* Morishita, 1953**

Mem. Coll. Sci., Kyoto Univ., Ser. B, vol. 20, no. 4, p. 220, pl. 1, fig. 4

Holotype: JC no. 750003

Eastern valley of Ichiba (Dorosawa), Ogawa-machi, Kami-Minochi-gun, Nagano Prefecture, Japan

Ogawa Formation

Middle Pliocene?

***Echinarachnius nipponicus* Nisiyama, 1940**

Jub. Publ. Commem. Prof. H. Yabe's 60th Birthday, vol. 2, p. 821

Syntype: Number ungiven

Takasu and Ashiya-machi, Onga-gun, Fukuoka Prefecture, Japan

Yamaga beds of Ashiya group

Oligocene

***Echinarachnius parvus* Nisiyama, 1940**

Jub. Publ. Commem. Prof. H. Yabe's 60th Birthday, vol. 2, p. 822, pl. 44, figs. 7-12

Holotype: IGPS no. 60328

Near Kawakami Hot spring, Toyokita-mura, Sakaehama-gun, South Sakhalin, Russia

Shirahimeyama Formation

Oligocene

***Echinarachnius raritalis* Nisiyama, 1951**

Saito Ho-on Kai Mus., Res. Bull., no. 21, p. 3, text-figs. 1-3

Holotype: IGPS no. 72978

Cliff along the River Sannai, opposite Taya, Kawabe-cho, Kawabe-gun, Akita Prefecture, Japan (39° 42' 00" N, 140° 17' 00" E)

Taya Formation

Miocene-Pliocene (or Late Miocene)

***Echinarachnius rumoensis* Hayasaka and Shibata, 1952**

Jour. Fac. Sci., Hokkaido Univ., Ser. 4, vol. 8, no. 2, p. 82, fig. 1

Syntype: Number ungiven

The wall of the road-cut in the back of the primary school, about 1 km west of the Togeshita railroad station, Rumoi-shi, Hokkaido, Japan

Togeshita Formation

Miocene

***Echinarachnius subtumidus* Nisiyama and Hashimoto, 1950**

Short Papers IGPS, no. 2, p. 39, text-figs. 1-3

Holotype: IGPS no. 73696

Road-side cutting along the River Ponrurumoppe behind the Togeshita primary school about 1 km west of Togeshita railroad station, Rumoi-shi, Hokkaido, Japan (43° 51' 00" N, 141° 47' 52" E)

Togeshita Formation

Miocene

***Echinarachnius tsudai* Morishita, 1950**

Jour. Geol. Soc. Japan, vol. 55, nos. 650-651, p. 257, fig. 1

Syntype: Number ungiven

Futamata, Tsubata-cho, Kahaoku-gun, Ishikawa Prefecture, Japan

Omima Formation

Pliocene

***Echinocyamus prostratus* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 50, text-figs. 31[6]a-b

Holotype: IGPS no. 73757

Plateau above Kami-Katetsu, Kikai-jima, Oshima-gun, Kagoshima Prefecture (Ryukyu Islands), Japan

Ryukyu Limestone

Pleistocene

***Echinodiscus chikuzenensis* Nagao, 1928**

Sci. Rep. Tohoku Imp. Univ., 2nd Ser., vol. 12, no. 1, p. 17, pl. 1, figs. 15-17

Holotype: IGPS no. 35952

Beach rocks west of Hachiman-zaki and about 300m north of Waita, Wakamatsu-ku, Kitakyushu-shi, Fukuoka Prefecture, Japan (33° 54' 02" N, 130° 46' 35" E)

Wakita Formation

Miocene (or Oligocene)

***Echinodiscus transiens* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 133, pl. 17, fig. 1

Holotype: IGPS no. 73773

A point west of Nishiyama, Hikoshima, Shimonoseki-shi, Yamaguchi Prefecture, Japan (33° 56' 24" N, 130° 53' 34" E)

Yamaga Formation

Oligocene-Miocene

***Echinodiscus formosus* Yoshiwara, 1903**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 14, pl. 1, figs. 1-2; pl. 2, fig. 2

Holotype: Number ungiven

Hatto near Kelung, Formosa

Formation name ungiven

Miocene

***Echinolampas bombos* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 17, pl. 10, figs. 10-11; pl. 11, figs. 1-6, 9

Holotype: IGPS no. 73726

Sea cliff near Akaiwa, at Nishi-ura, Haha-jima (Hillsborough Island), Bonin Islands

Eorupertia-Alveolina zone (Formation name ungiven)

Eocene

***Echinometra hondoana* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 270, pl. 10, fig. 1

Holotype: IGPS no. 73733

In the shaft of Edano coal mine about 500 m west of Kozai Pass, Edano-mura, Igu-gun, Miyagi Prefecture, Japan (37° 54' 40" N, 140° 50' 56" E)

Kozai Formation

Miocene

***Enallaster yuasensis* Tanaka and Okubo, 1954**

Jour. Geol. Soc. Japan, vol. 60, no. 705, p. 223, pl. 7, fig. 6

Holotype: Number ungiven.

Southeast of Yoshikawa, Yusa-machi, Arita-gun, Wakayama Prefecture, Japan

Arita Formation

Cretaceous

***Erbechinus gratus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 234, pl. 5, figs. 5-8

Holotype: IGPS no. 73720

Sea shore north of Shirahama shrine at Harada, Shirahama, Shimoda-shi, Shizuoka Prefecture, Japan (34° 41' 25" N, 138° 58' 00" E)

Shirahama (Susaki) Formation

Probably Miocene

***Eupatagus marianensis* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 291, pl. 27, figs. 7-8, 10-11

Holotype: IGPS no. 73739

Hill behind Forestry Industry, Saipan Island, Marian (Ladrone) Islands, Micronesia, South Sea Islands

Nephrolepidina-horizon (Formation name ungiven)

Miocene

***Eupatagus nipponicus* Miroshita, 1957**

Mem. Coll. Sci., Univ. Kyoto, Ser. B, vol. 24, no. 2, art. 4, p. 163, pl. 1, figs. 7-8

Holotype: JC no. 750012

Yamamoto, Hukumitsu-cho, Nishi-Tonami-gun, Toyama Prefecture, Japan

Sunagozaka Tuffaceous Member

Middle Miocene

***Fibularia acta* Yoshiwara, 1898**

Annot. Zool. Japonae, vol. 2, part 2, p. 60

Holotype: Number ungiven

Oji, Kita-ku, Tokyo, Japan

Duluvium (Formation name ungiven)

Pleistocene

Remarks: See, Yoshiwara (1899), Jour. Geol. Soc. Tokyo, vol. 6, no. 65, p. 4, and Tokunaga (1903), Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 7, pl. 2, figs. 5-6

***Firmacidaris neumayri* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 168, pl. 30, figs. 1-2

Holotype: IGPS no. 7152

A point near Hanabatake, Togano-mura, Takaoka-gun, Kochi Prefecture, Japan (33° 28' 48" N, 133° 16' 42" E)

Torinosu Limestone

Upper Jurassic (Callovia to Tithonian)

***Gitolampas sendaica* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 22, pl. 30, figs. 3, 5-7

Holotype: IGPS no. 35003

A small valley, north of Moniwa electric power-house, Oide, Natori-shi, Miyagi Prefecture, Japan (38° 13' 00" N, 140° 47' 26" E)

Moniwa Formation

Miocene

***Glyptocidaris crenularis stenozona* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 194, pl. 2, figs. 10-11

Holotype: IGPS no. 73754

Sea cliff below shrine at Tomiya, Takeoka, Futtsu-shi, Chiba Prefecture, Japan (35° 12' 52" N, 139° 51' 00" E)

Kurotaki Formation

Lower Pliocene

***Glyptocidaris (Eoglyptocidaris) arctina* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 196, pl. 3, figs. 5-7; text-fig. 7

Holotype: IGPS no. 73752

A point of Sukenebetsu, on the upper course of the River Obirashibe, Obirashibe, Rumoi-gun, Hokkaido, Japan (44° 03' 00" N, 141° 55' 00" E)

Poronai Formation

Oligocene (or Eocene)

***Goniopygus atavus* Nisiyama, 1950**

Short Papers IGPS., no. 2, p. 40, pl. 4, figs. 2-4

Holotype: IGPS no. 73694

Sea cliff northeast of Hiraiga, Tanohata-mura, Shimohei-gun, Iwate Prefecture, Japan (39° 55' 53" N, 141° 56' 39" E)

Hiraiga Sandstone

Lower Cretaceous

***Hemiaster uwajimensis* Morishita, 1962**

Jour. Earth Sci., Nagoya Univ., vol. 10, no. 2, p. 114, pl. 1, figs. 1-7

Holotype: ESN no. 30001

Asakawa, Yoshida-cho, Kita-Uwa-gun, Ehime Prefecture, Japan

Lower part of Yoshida Group

Upper Cretaceous

***Heteraster nexilis* Nisiyama, 1950**

Short Papers IGPS., no. 1, p. 42, text-figs. 1-3

Holotype: IGPS no. 72979

Cliff along the River Naka, about 800 m west of Komo, Hanoura-machi, Naka-gun, Tokushima Prefecture, Japan (33° 56' 30" N, 134° 35' 16" E)

Hanoura Formation

Cretaceous (Barremian)

***Holaster clypeatulus* Nisiyama, 1950**

Short Papers. IGPS, no. 2, p. 35, pl. 4, figs. 8-9

Holotype: IGPS no. 72980

Sea cliff a short distance east of shrine at Raga, Tanohata-mura, Shimohei-gun, Iwate Prefecture, Japan (39° 56' 12" N, 141° 56' 36" E)

Hiraiga Sandstone (*Orbitolina*-horizon)

Lower cretaceous

***Holectypus (Coenholectypus) peridoneus* Nisiyama, 1950**

Short papers IGPS, no. 2, p. 32, pl. 4, figs. 5-7

Holotype: IGPS no. 73695

Sea cliff northeast of Hiraiga, Tanohata-mura, Shimohei-gun, Iwate Prefecture, Japan (39° 55' 53" N, 141° 56' 39" E)

Hiraiga Sandstone (*Orbitolina*-horizon)

Lower Cretaceous

***Kewia minuta* Shibata, 1960**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 39, p. 308, pl. 35, figs. 3-9

Holotype: TKD no. 7543

Kani-zawa, Minano-machi, Chichibu-gun, Saitama Prefecture, Japan

Ushikubitoge Formation

Oligocene-Miocene

***Kewia ugoensis* Shibata, 1960**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 39, p. 307, pl. 35, figs. 1-2

Holotype: TKD no. 6273

Hirasawa, Nishikurosawa, Oga-shi, Akita Prefecture, Japan

Nishikurosawa Formation

Middle Miocene

***Laganum fudsiyama tokunagai* Otuka, 1938**

Jour. Fac. Sci., Imp. Univ. Tokyo, Sec. 2, vol. 5, part 1, p. 18, pl. 2, figs. 22-23

Holotype: ERI no. 4006

Shiroyama, Kanbara-machi, Ihara-gun, Shizuoka Prefecture, Japan

Shiroyama Sandstone

Miocene

***Laganum pachycraspedum* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 73, pl. 15, figs. 9-10, 17

Holotype: IGPS no. 73759

Sea shore north of Shirahama shrine at Harada, Shirahama, Shimoda-shi, Shizuoka Prefecture, Japan (34° 41' 25" N, 138° 58' 00" E)

Shirahama (Susaki) Formation

Miocene

***Linthia nipponica* Yoshiwara, 1899**

Jour. Geol. Soc. Tokyo, vol. 6, no. 65, p. 2

Syntype: Number ungiven

Kanazawa-shi, Ishikawa Prefecture, Japan

Formation name ungiven

Probably Pliocene

Remark: See, Tokunaga (1903), Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 1, p. 18, pl. 1, figs. 5-7; pl. 3, fig. 1

***Linthia praenipponica* Nagao, 1928**

Sci. Rep., Tohoku Imp. Univ., 2nd Ser., vol. 12, p. 18, pl. 1, figs. 1-4

Syntype: Number ungiven

Hasami-cho, Higashi-Sonogi-gun, Nagasaki Prefecture, Japan

Ashiya Group

Oligocene

***Linthia yessoensis* Minato, 1950**

Jour. Geol. Soc. Japan, vol. 56, no. 655, p. 158, figs. 1-2

Syntype: HU no. 11288

Shimizusawa, Penke, Kami-Ashibetsu-cho, Sorachi-gun, Hokkaido, Japan

Corbicula bed? (Formation name ungiven)

Paleogene

***Linthia boreasteria* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 240, text-figs. 71[46]a-b

Holotype: IGPS no. 45018

A point at the middle course of the River Minami-Nayoshi, Notoro Peninsula, South Sakhalin, Russia

Nissakutan Formation

Oligocene

***Metalia pelagica* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 299, pl. 27, figs. 1-5; pl. 29, fig. 4

Holotype: IGPS no. 73735

In a doline on Denshin-yama, Saipan Island, Mariana (Ladrone) Islands, Micronesia, South Sea Islands

Donney Formation (*Spiroclypeus*-horizon)

Miocene

***Miocidaris platyacantha* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 155, pl. 1, fig. 3

Holotype: Number ungiven.

North of Kinsho-zan, Akasaka-machi, Ogaki-shi, Gifu Prefecture, Japan (35° 23' 40" N, 136° 34' 40" E)

Akasaka Limestone

Permian

***Miocidaris spinulifera* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 155, pl. 1, figs. 1-2

Holotype: IGPS no. 6442

North of Kinsho-zan, Akasaka-machi, Ogaki-shi, Gifu Prefecture, Japan (36° 23' 40" N, 136° 34' 40" E)
Akasaka Limestone
Permian

***Mirechinus mirabilis* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 240, pl. 6, fig. 3; pl. 7, figs. 2, 4
Holotype: IGPS no. 73725
South cliff of Nishi-ura, Haha-jima in Bonin Island, Tokyo, Japan
Eorupertia-Alveolina-zone (Formation name ungiven)
Upper Eocene (Lutetian)

***Moira obesa* Nisiyama, 1935**

Saito Ho-on Kai Mus., Res. Bull., no. 5, p. 164, pl. 8, figs. 6-16
Holotype: SHM no. 6164
Rock beach in front of the Tanosawa railway station, Odose, Tanosawa-machi, Nishi-Tsugaru-gun, Aomori Prefecture, Japan (40° 45' 07" N, 140° 02' 03" E)
Tanosawa Formation (*Miogypsina-Operculina* horizon)
Miocene

***Niponaster nakaminatoensis* Saito, 1959**

Bull. Fac. Arts and Sci., Ibaraki Univ., Nat. Sci., no. 9, p. 81, pl. 2, figs. 1-5; text-figs. 1-2
Holotype: GIUM no. 4431
Beach about 700m southeast of Cape Isozaki, Hitachinaka-shi, Ibaraki Prefecture, Japan
Isoai Member of the Nakaminato Formation
Cretaceous

***Palaeopneustes lepidus* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 167, pl. 20, figs. 1,4; pl. 21, fig. 1
Holotype: IGPS no. 8076
Road-side cutting at Tsumuko, Nanao-shi, Ishikawa Prefecture, Japan (37° 03' 18" N, 136° 57' 12" E)
Nanao Formation
Miocene

***Palaeopneustes (Oopneustes) priscus* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 159, pl. 19, figs. 1-2; pl. 21, fig. 4; text-figs. 57[32]-59[34]
Holotype: IGPS no. 7098
In some place of Kawasaki-machi (exactly locality unknown), Shibata-gun, Miyagi Prefecture, Japan
Probably Tsunaki Formation
Miocene

***Palaeopneustes periturus* Nisiyama, 1968**

Palaeont. Soc. Spec. Pap., no. 13, p. 165, text-figs. 61[36] a-c
Holotype: IGPS no. 73785
River side of the Minato-gawa, about 300m south of Onda,

Futtsu-shi, Chiba Prefecture, Japan (35° 13' 10" N, 139° 55' 57" E)
Kiwada Formation
Pliocene

***Palaeopneustes psoidoperiodus* Nishio, 1961**

Bull. Tokyo Gakugei Univ., no. 12, p. 130, pl. 1, figs. 1-2
Holotype: Number ungiven
Cliff along the road near Kamitaki Primary School, Shimo-Otaki, Otaki-machi, Isumi-gun, Chiba Prefecture, Japan
Umegase Formation
Pliocene

***Palmeraster japonicus* Morishita, 1956**

Mem. Coll. Sci., Kyoto Univ., Ser. B, vol. 23, no. 2, p. 194, pl. 2, figs. 1a-c
Holotype: GK-L no. 4740
Yamaga-cho, Onga-gun, Fukuoka Prefecture, Japan
Ashiya Group
Oligocene

***Pericosmus magnificus* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 269, pl. 28, figs. 1-2
Holotype: IGPS no. 73868
Near the Myojin shrine at Magaki-jima, 700 m east of Higashi-Shiogama Station of the Senseki Line, Shiogama-shi, Miyagi Prefecture, Japan (38° 19' 12" N, 141° 02' 25" E)
Ajiri (Hatatate) Formation
Miocene

***Pseudocentrotus stenoporus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 247, pl. 7, figs. 3-7
Holotype: IGPS no. 78207
Sea-shore of Nagata, Shirahama, Shimoda-shi, Shizuoka Prefecture, Japan (34° 41' 30" N, 138° 58' 00" E)
Shirahama (Susaki) Formation
Miocene

***Pseudoastrodapsis intermedius* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 125, pl. 16, figs. 9-12, 14
Holotype: IGPS no. 73803
Sanpo-zawa near the Showa coal mine, Numata-cho, Uryu-gun, Teshio, Hokkaido, Japan (43° 59' 00" N, 141° 57' 52" E)
Kawabata Formation
Miocene

***Pseudoastrodapsis nitidiusculu* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 126, pl. 16, figs. 15-17; pl. 17, figs. 2-3, 6
Holotype: IGPS no. 73805
Exact locality unknown, Probably the middle part of Hokkaido, Japan
Formation unknown

Plobably upper Miocene or lower Pliocene

***Pseudocidaris simulans* Nisiyama, 1950**

Short Papers IGPS, no. 2, p. 29, pl. 4, figs. 1-2

Holotype: IGPS no. 66504

Sea cliff northeast of Hiraiga, Tanohata-mura, Shimohei-gun, Iwate Prefecture, Japan (39° 55' 53" N, 141° 56' 39" E)

Hiraiga Sandstone (*Orbitolina*-horizon)

Lower Cretaceous

***Pygurus asiaticus* Tokunaga, 1903**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 16, pl. 3, figs. 3-6

Syntype: Number ungiven

Torinosu in Sakawa-cho, Kochi Prefecture, Japan

Formation name ungiven

Cretaceous

***Pygurus (Pygurus) complanatus* Tanaka, 1965**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 59, p. 128, pl. 15, figs. 1a-c, 2a-c

Holotype: GSJ no. 6090

Lower course of the Onozawa, Saku-machi, Minamisaku-gun, Nagano Prefecture, Japan

Ishido Formation

Cretaceous

***Salenia novemprovincialis* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 187, pl. 2, figs. 6-9

Holotype: IGPS no. 73750

Southern sea cliff of Otoko-jima, Sakito-machi, Nishi-Sonogi-gun, Nagasaki Prefecture, Japan (33° 00' 16" N, 129° 32' 30" E)

Kakinoura Formation

Oligocene (or Lower Miocene)

***Schizaster kinasaensis* Morishita, 1953**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 20, no. 4, art. 1, p. 224, pl. 1, fig. 8

Holotype: JC no. 750004

Southwest of Ichinosaka, Kinasa-mura, Kami-Minochi-gun, Nagano Prefecture, Japan

Bessho Formation?

Middle Miocene

***Schizaster miyazakiensis* Morishita, 1956**

Mem. Coll. Sci., Univ. Kyoto, Ser. B. vol. 23, no. 2, art. 3, p. 197, pl. 3, figs. 1a-d, 2a-d; pl. 4, figs. 1a-d

Holotype: GK-L no. 14710

Tano-cho, Miyazaki-gun, Miyazaki Prefecture, Japan

Miyazaki Group

Miocene

***Schizaster nummuliticus* Tokunaga, 1903**

Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 21, pl. 4, figs. 4-6

Syntype: Number ungiven

Nishi-ura in Haha-jima, Bonin Island, Tokyo, Japan

Formation name ungiven

Eocene

***Schizaster recticanalis* Yoshiwara, 1899**

Jour. Geol. Soc. Tokyo, vol. 6, no. 65, p. 3

Syntype: Number ungiven

River bank of the River Saigawa near Kanazawa-shi, Ishikawa Prefecture, Japan

Formation name ungiven

Pliocene

Remark: See, Tokunaga (1903), Jour. Coll. Sci., Imp. Univ. Tokyo, vol. 17, art. 12, p. 20, pl. 6, figs. 1-3

***Scutella nipponica* Nagao, 1928**

Sci. Rep. Tohoku Imp. Univ., 2nd Ser., vol. 12, no. 1, p. 16, pl. 1, figs. 5-6

Holotype: IGPS no. 35956

A point of Takasu, Maebara-shi, Fukuoka Prefecture, Japan (33° 52' 56" N, 130° 41' 40" E)

Yamaga Formation

Oligocene

***Sismondia convexa* Nisiyama, 1937**

Proc. Imp. Acad., Tokyo, vol. 13, no. 2, p. 41, text-figs. 1-13

Holotype: IGPS no. 7100a

Minami-zaki, Chichi-jima (Peel Island), Bonin Islands, Tokyo, Japan

Eulepidina-Limestone (Formation name ungiven)

Lower Miocene (Aquitanian)

***Sismondia javana ladronensis* Nisiyama, 1968**

Palaeont. Soc. Japan, Spec. Pap., no. 13, p. 59, pl. 13, figs. 6, 8-10, 13-16; pl. 14, figs. 3-8

Holotype: IGPS no. 73737

In a doline at Denshin-yama, Saipan Island, Micronesia, South Sea Islands

Tagpochau Formation (*Eulepidina-Spiroclypeus* horizon; *Sismondia* zone)

Miocene

***Sismondia naganoensis* Morishita, 1953**

Mem. Coll. Sci., Univ. Kyoto, Ser. B., vol. 20, no. 4, art. 1, p. 218, pl. 1, figs. 1-2; text-fig. 2

Holotype: JC no. 750002

Shimizu-sawa, Aida, Shiga-mura, Higashi-Chikuma-gun, Nagano Prefecture, Japan

Aoki Formation

Middle Miocene

***Stereocidaris grandis fusana* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 159, pl. 1, fig. 4

Holotype: IGPS no. 73741

Sea cliff below shrine at Tomiya, Takeoka, Futtsu-shi, Chiba Prefecture, Japan (35° 12' 52" N, 139° 51' 00" E)

Kurotaki Formation

Lower Pliocene

***Stereocidaris (Phalacrocidaris) japonica multipora* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 161, pl. 1, figs. 5-6

Holotype: IGPS no. 73742

Sea cliff of Shiba, Minato Ward, Yokohama-shi, Kanagawa Prefecture, Japan (35° 20' 00" N, 139° 58' 00" E)

Koshiha Formation

Pleistocene (or Pliocene)

***Stomopneustes antiquus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 199, pl. 2, figs. 14-17; pl. 3, figs. 1-4

Holotype: IGPS no. 73728

Beach rock on Nishi-ura, Haha-jima, in Bonin Island, Tokyo, Japan

Orthophragmina-Globigerina Zone (Formation name ungiven)

Upper Eocene

***Strongylocentrotus magistrus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 255, pl. 8, figs. 1-3

Holotype: IGPS no. 73813

Cliff back of Shimazaki, Junicho, Himi-shi, Toyama Prefecture, Japan (36° 50' 05" N, 136° 58' 06" E)

Himi Formation

Pliocene

***Strongylocentrotus? octopus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 256, pl. 8, figs. 7-8

Holotype: IGPS no. 73723

Road side cutting at Yunosawa, Fukaura-machi, Nishi-Tsugaru-gun, Aomori Prefecture, Japan (40° 37' 21" N, 139° 55' 49" E)

Fukaura Formation

Lower Pliocene to Miocene

***Toxaster sanchuensis* Tanaka, 1965**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 59, p. 131, pl. 15, figs. 5a-b, 6a-b; pl. 16, figs. 1a-c, 2a-c; text-figs. 3a-c

Holotype: GSJ no. 6124.

About 800m northwest of Sebayashi, Nakazato-mura, Tano-gun, Gumma Prefecture, Japan

Ishido Formation

Cretaceous

***Tripneustes magnificus* Nisiyama, 1966**

Palaeont. Soc. Japan, Spec. Pap., no. 11, p. 243, pl. 6, figs. 2, 7,

9; pl. 7, fig. 1

Holotype: IGPS no. 73786

Hill behind Forestry Industry, Saipan Island, Mariana (Ladrone) Islands, Micronesia, South Sea Islands

Laulau Formation (*Eulepidina*-horizon)

Oligocene

***Washitaster barremicus* Tanaka and Okubo, 1954**

Jour. Geol. Soc. Japan, vol. 60, no. 705, p. 220, pl. 7, fig. 3

Holotype: Number ungiven.

Southwest of Yoshikawa, Yuasa-machi, Arita-gun, Wakayama Prefecture, Japan

Arita Formation

Cretaceous (Barremian)

***Washitaster japonicus* Tanaka and Okubo, 1954**

Jour. Geol. Soc. Japan, vol. 60, no. 705, p. 220, pl. 7, fig. 4

Holotype: Number ungiven

North of Tsuzura, Izumi-mura, Yatsushiro-gun, Kumamoto Prefecture, Japan

Yatsushiro Formation

Cretaceous

***Washitaster? macroholcus* Nisiyama, 1950**

Short Papers IGPS., no. 1, p. 45, text-figs. 4-7

Holotype: IGPS no. 72981

Cliff about 200 m north of the bridge on main road, northeast of Yuasa-machi, Arita-gun, Wakayama Prefecture, Japan (34° 02' 30" N, 136° 11' 24" E)

Arita Formation

Cretaceous (Barremian)

Holothuroidea***Cucumaria igoi* Kikuchi and Nikaido, 1996**

Prof. H. Igo Commem. Vol., p. 156, fig. 4; figs. 5.1-4; figs. 6.1a-d, 2

Holotype: IGUT no. 11026

In a stream-bed along the Yazawagawa River, about 750 m south of Shimo-Yazawa, Konamase, Daigo-machi, Kuji-gun, Ibaraki Prefecture, Japan

Nawashiroda Formation

Early Middle Miocene

Conodonta

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Acodus langkawiensis Igo and Koike, 1967

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 12, pl. 1, figs. 19a,b, 20a,b

Holotype: TUE, no. 23121* (figs. 19a, b)

Plau Lagoon, Langkawi Islands, Malaysia

Upper Setul Limestone

Middle Silurian

(This species may be included in *Gryptoconus* Kennedy, 1980)

Acontiodus hamari Igo and Koike, 1967

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 15, 16, pl. 1, figs. 6-11

Holotype: TUE, no. 23128* (fig. 8a, b)

Plau Lagoon, Langkawi Islands, Malaysia

Lower and Upper Setul Limestone

Late Ordovician to Middle Silurian

(This species may be included in *Gryptoconus* Kennedy, 1980)

Acontiodus malayensis Igo and Koike, 1967

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 16, pl. 2, figs. 6a,b, c

Holotype: TUE, no. 23129*

Plau Lagoon, Langkawi Islands, Malaysia

Lower Setul Limestone

Middle Ordovician

(This species may be included in *Scabbardella* Orchard, 1980)

Anchignathodus minutus permicus Igo, Hh., 1981

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 26, 27, pl. 10, figs. 1-4

Holotype: TGU, no. 1562* (fig. 2)

Quarry of Miyata Lime Industry Co. Ltd., Kuzuu-machi, Tochigi Prefecture (36°24'20" N, 139°36'00" E)

Yamasuge Limestone Member of Nabeyama Formation

Middle Permian

Cornudina igoi Koike, 1996

Prof. Hisayoshi Igo commemorative volume on geology and paleontology of Japan and Southeast Asia (H. Noda and K. Sashida, eds., Gakujyutsu Tosho Insatsu Co. Ltd., Tokyo), p. 119, 120, fig. 4-1-20

Holotype: YNUC, no. 15819* (fig. 8)

Tahokamigumi, Shirokawa-cho, Higashi-ura-gun, Ehime Prefecture (33°21'58" N, 132°30'50" E)

Taho Formation

Early Spathian, Triassic

Diplognathodus augustus Igo, Hh., 1981

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 30, pl. 8, figs. 1-8

Holotype: TGU, no. 1526* (fig. 2)

Limestone exposure along road from Horikoshi-Pass to Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44'01" N, 136°58'32" E)

Akuda Formation

Early Permian

(This species should be included in *Iranognathus* Kozur, Mostler and Rahimi-Yazd, 1976)

Diplognathodus lanceolatus Igo, Hh., 1981

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 30, 31, pl. 9, figs. 1-5, 7, 8, 13

Holotype: TGU, no. 1541* (fig. 1)

Quarry of Tokyo Lime Industry Co. Ltd., Kuzuu-machi, Tochigi Prefecture (36°24'00" N, 139°36'00" E)

Yamasuge Limestone Member of Nabeyama Formation

Middle Permian

Diplognathodus nodosus Igo, Hh., 1981

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 31, pl. 9, figs. 6, 9-12

Holotype: TGU, no. 1547* (fig. 6)

Quarry of Miyata Lime Industry Co. Ltd., Kuzuu-machi, Tochigi Prefecture (36°24'00" N, 139°36'00" E)

Karasawa Limestone Member of Nabeyama Formation

Middle Permian

(This species should be included in *Iranognathus* Kozur, Mostler and Rahimi-Yazd, 1976)

Drepanodus langoonensis Igo and Koike, 1967

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 18, 19, pl. 3, figs. 10a, b

Holotype: TUE, no. 23133*

Plau Lagoon, Langkawi Islands, Malaysia

Upper Setul Limestone

Middle Silurian

Drepanodus malayensis Igo and Koike, 1967

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 18, pl. 1, figs. 1, 2

Holotype: TUE, no. 23132* (fig. 1)

Plau Lagoon, Langkawi Islands, Malaysia

Upper Setul Limestone

Middle Silurian

***Gladigondolella abneptis echinatus* Hayashi, 1968**

Earth Science, vol. 22, no. 2, p. 68, 69, pl. 2, figs. 1 a-c

Holotype: AD, no 67/15*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36 °24' N, 139 °36' E)

Aoyama Formation

Late Triassic

(This species was revised to *Metapolygnathus echinatus* (Hayashi) by Orchard, 1991)

***Gladigondolella abneptis nodosa* Hayashi, 1968**

Earth Science, vol.22, no. 2, p.69, pl.2, figs. 9a-c

Holotype: AD, no. 67/23*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa Kuzuu-machi, Tochigi Prefecture (36 °24' N, 139 °36' E)

Aoyama Formation

Carnian, Triassic

(This species was revised to *Metapolygnathus nodosus* (Hayashi) by Kozur, 1972)

***Gladigondolella abneptis permica* Hayashi, 1968**

Earth Science, vol.22, no. 2, p.69, pl.2, figs.3a-c

Holotype: AD, no. 67/17*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36 °24' N, 139 °36' E)

Aoyama Formation

Carnian, Triassic

(This species should be included in *Epigondolella Mosher, 1968*)

***Gladigondolella abneptis spatulata* Hayashi, 1968**

Earth Science, vol.22, no. 2, p.69, pl.2, figs.5a-c

Holotype: AD, no. 67/19*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36 °24'' N, 139 °36' E)

Aoyama Formation

Norian, Triassic

(This species was revised to *Epigondolella spatulata* (Hayashi) by Koike, 1981)

***Gladigondolella malayensis* Nogami, 1968**

Mem. Fac. Sci., Kyoto Univ., Ser. Geol. Mineral., vol. 34, no. 2, p. 122, 123, pl. 9, figs.11-18, pl. 11, fig. 7

Holotype: JCD, no. 1104* (pl. 9, fig. 12)

Bukit Kechil near Kodiang Station, Kedah, Malaysia

Carnian, Triassic

***Gnathodus akiyoshiensis* Igo, Hh., 1973**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 92, p. 192, 193, pl. 29, figs. 24, 25

Holotype: TGU, no. 1078* (fig. 25)

Limestone exposure along road from Hirabaru to Okubo in Okubo area, southern margin of Akiyoshi plateau, Yamaguchi Prefecture (34 °14' N, 131 °19' E)

Akiyoshi Limestone Group

Late Visean (Chesterian), Carboniferous

(This species was revised to *Vogelgnathus akiyoshiensis* (Igo, Hh.) by Norby and Rexroad, 1985)

***Gnathodus atetsuensis* Koike, 1967**

Sci. Rep. Tokyo Kyoiku Daigaku, Sec. C, vol. 9, no. 93, p. 295, 296, pl.1, figs. 6-8

Holotype: TUE, no. 23214* (fig. 8)

Exposure at road side, about 300 m NEE of Iwamoto, Niimi City, Okayama Prefecture (34 °57' 36'' N, 133 °35' 48'' E)

Kodani Formation

Atokan, Carboniferous

(This species should be included in *Diplognathodus Kozur and Merrill* in Kozur, 1975)

***Gnathodus commutatus nagatoensis* Igo & Koike, 1965**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 59, p. 89, pl. 9, fig. 9-13.

Holotype: TUE, no. 23120* (fig. 10)

Uzura quarry about 1 km E of Yobara, Ofuku, Yamaguchi Prefecture (34 °13' 50''N, 131 °15' 01''E)

Lower part of Akiyoshi Limestone Group

Late Namurian, Carboniferous

(This species was revised to *Neolochriea nagatoensis* (Igo and Koike) by Mizuno, 1997)

***Gnathodus kanumai* Igo, Hh., 1974**

Bull. Tokyo Gakugei Univ., Ser. 4, vol. 26, p. 233, pl. 1, figs. 10 -14

Holotype: TGU, no. 1200* (fig. 10)

Limestone exposure about 200 m W of Livestock Breeding Farm Office in Akiyoshi Plateau, Yamaguchi Prefecture (34 °11' N, 131 °15' E)

Akiyoshi Limestone Group

Moscovian (late Atokan), Carboniferous

(This species should be included in *Neognathodus Dun, 1970*)

***Gnathodus opimus* Igo & Koike, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 53, p. 189, 190, pl. 28, figs. 15-18

Holotype: TUE, no 23030* (fig. 18)

Nishiyama quarry of Omi Denka Co. Ltd. about 2 km SW of Omi-machi, Nishikubiki-gun, Niigata Prefecture (36 °59' 59'' N, 137 °47' 34'' E)

C₁ Formation of Omi Limestone Group

Late Namurian, Carboniferous

(This species should be included in *Idiognathoides Harris and Hollingsworth, 1933*)

***Gondolella clarki* Koike, 1967**

Sci. Rep. Tokyo Kyoiku Daigaku, Sec. C, vol. 9, no. 93, p. 301, pl. 2, figs. 1-6

Holotype: TUE, no. 23243* (fig. 6)

Exposure on road side, about 400 m NEE of Iwamoto, Niimi City, Okayama Prefecture (34°57'36" N, 133°35'48" E)
Kodani Formation
Atokan, Carboniferous

***Gondolella tadpole* Hayashi, 1968**

Earth Science, Vol.22, No. 2, p.71, pl.1, figs. 6a, b
Holotype: AD, no. 67/6*
Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)
Aoyama Formation
Carnian, Triassic
(This species should be included in *Metapolygnathus* Hayashi, 1968)

***Gondolella timorensis* Nogami, 1968**

Mem. Fuc. Sci., Kyoto Univ., Ser. Geol. Mineral., vol. 34, no. 2, p. 127, 128, pl. 10, figs. 17-21
Holotype: JCD, no. 1144* (fig.17)
About 600 m N of Ue Lacan, Landkreis Manatuto, East Timor
Anisian, Triassic
(This species was revised to *Chiosella timorensis* (Nogami) by Kozur, 1989)

***Idiognathodus togashii* Igo & Koike, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 53, p. 188, pl. 28, figs. 1-4
Holotype: TUE, no. 23034* (fig.1)
Nishiyama quarry of Omi Denka Co. Ltd. about 2 km SW of Omi-machi, Nishikubiki-gun, Niigata Prefecture (36°59'59"N, 137°47'34"E)
C₁ Formation of Omi Limestone Group
Late Namurian, Carboniferous
(Synonymy with *Streptognathodus expansus* Igo and Koike, 1964 by Koke, 1967)

***Malaygnathus tetraserratus* Igo and Koike, 1965**

Mem. Mejiro Gakuen Woman's Jr. Coll., vol. 2, p. 18, pl. 1, figs. 20-22
Holotype: TUE, no. 23086*
Rail way cutting at foot of limestone hill Gua Panjang about 9 km south of Gua Musang railway station, Kelantan, Malaysia
Smithian, Early Triassic
(*Malaygnathus* Igo and Koike, 1965 was revised to *Furnishius* Clark, 1959 by Igo and Koike, 1970)

***Metapolygnathus communisti* Hayashi, 1968**

Earth Science, vol. 22, no. 2, p. 72, pl. 3, figs. 11a-c
Holotype: AD, no. 67/34*
Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)
Aoyama Formation
Carnian, Triassic

***Metapolygnathus linguiformis* Hayashi, 1968**

Earth Science, vol. 22, no. 2, p. 72, pl. 3, figs. 9a, b
Holotype: AD, no. 67/32*
Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)
Aoyama Formation
Triassic

***Metapolygnathus noah* Hayashi, 1968**

Earth Science, vol. 22, no. 2, p.72, pl. 3, figs. 10a-c
Holotype: AD, no. 67/33*
Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)
Aoyama Formation
Late Triassic

***Neogondolella asiatica* Igo, Hh., 1981**

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 36, 37, pl. 2, figs. 1-13
Holotype: TGU, no. 1431* (fig. 5)
Limestone exposure along road from Horikoshi-Pass to Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44'01" N, 136°58'32" E)
Early Permian
(Synonymy with *Clarkina subcarinata* (Sweet), 1973 by Igo, Hh., 1989)

***Neogondolella bisecta* Igo, Hh., 1989**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 156, p. 280, figs. 7-1, 2
Holotype: TGU, no. 1805* (fig.7-1)
Calcarene exposure along road near Horikoshi Pass, about 1 km NE of Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44' N, 136°58'31" E)
Late Carnian to early Norian, Triassic

***Neogondolella gujioensis* Igo, Hh., 1981**

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 37, 38, pl. 3, figs. 1-19; pl. 4, figs. 1-6
Holotype: TGU, no. 1454* (pl. 3, fig.15)
Limestone exposure along road from Horikoshi-Pass to Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44'01" N, 136°58'32" E)
Akuda Formation
Early Permian

***Neogondolella intermedia* Igo, Hh., 1981**

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 38, 39, pl. 4, figs. 7-11
Holotype: TGU, no. 1469* (fig. 11)
Limestone exposure in Ichinose about 5 km NW of Yoro-cho, Gifu Prefecture (35°19' N, 136°22'43" E)

Early Permian

***Neogondolella polygnathiformis depressa* Igo, Hh., 1989**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 156, p. 280, 281, figs. 7-3, 4

Holotype: TGU, no. 1838* (fig. 7-3)

Calcarene exposure along road near Horikoshi Pass, about 1 km NE of Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44' 00" N, 136°58' 31" E)

Carnian, Triassic

(This subspecies should be included in *Metapolygnathus Hayashi, 1968*)

***Neogondolella polygnathiformis magna* Igo, Hh., 1989**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 156, p. 281, figs. 6-16, 17

Holotype: TGU, no. 1888* (fig. 6-16)

Calcarene exposure along road near Horikoshi Pass, about 1 km NE of Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44' 00" N, 136°58' 31" E)

Late Carnian to early Norian, Triassic

(This subspecies should be included in *Metapolygnathus Hayashi, 1968*)

***Neolochriea hisaharui* Mizuno, 1997**

Paleont. Res., vol. 1, no. 4, p. 255, figs. 13-10-13

Holotype: DESC, no. 95326* (figs. 13-11a-c), Paratype: DESC, no. 95325*, 95324*, 95323* (figs. 13-10, 13-12, 13-13)

Abandoned limestone quarry of Kokan Kogyo Co., Ltd., Takahara district of Kamishigi area, about 10km WSW of Jitou, Yoshii-cho, Shitsuki-gun, Okayama Prefecture (34°41' 30" N, 133°23' 30" E)

Hina Limestone

Earliest Pennsylvanian, Carboniferous

***Neolochriea hisayoshii* Mizuno, 1997**

Paleont. Res., vol. 1, no. 4, p. 255, 256, figs. 13-5-9

Holotype: DESC, no. 95313* (figs. 13-5a,b), Paratype: DESC, no. 95310*, 95312*, 95316*, 95311* (figs. 13-6, 13-7, 13-8, 13-9)

Abandoned limestone quarry of Kokan Kogyo Co., Ltd., Takahara district of Kamishigi area, about 10km WSW of Jitou, Yoshii-cho, Shitsuki-gun, Okayama Prefecture (34°41' 30" N, 133°23' 30" E)

Hina Limestone

Earliest Pennsylvanian, Carboniferous

***Neolochriea koikei* Mizuno, 1997**

Paleont. Res., vol. 1, no. 4, p. 256, figs. 13-14 -16

Holotype: DESC, no. 95334* (figs. 13-14a, b), Paratype: DESC, no. 95335*, 95336* (figs. 13-15a, b, 13-16)

Abandoned limestone quarry of Kokan Kogyo Co., Ltd., Takahara district of Kamishigi area, about 10km WSW of Jitou, Yoshii-cho, Shitsuki-gun, Okayama Prefecture (34°41' 30" N,

133°23' 30" E)

Hina Limestone

Earliest Pennsylvanian, Carboniferous

***Neospathodus kedahensis* Koike, 1973**

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 12, p. 108, pl. 17, figs. 8-10

Holotype: TUE, no. 23410* (fig. 9)

East of Badenock Estate, Tawar, Kedah, Malaysia

Chert bed

Anisian, Triassic

***Neospathodus robustus* Koike, 1982**

Geology and Palaeontology of Southeast Asia (T. Kobayashi, R. Toriyama and W. Hashimoto, eds., Univ. Tokyo Press), vol. 23, p. 39, pl. 6, figs. 32-35

Holotype: YNUC, no. 1094* (figs. 34, 35)

Limestone quarry at Gunong Keriang, Kedah, Malaysia

Smithian, Triassic

***Neostrachanognathus tahoensis* Koike, 1998**

Paleont. Res., vol. 2, no. 2, p. 125-128, fig. 9-1-23

Holotype: YNUC, no. 15876* (fig. 19)

Tahokamigumi, Shirokawa-cho, Higashi-ua-gun, Ehime Prefecture (33°21' 58" N, 132°30' 50" E)

Taho Formation

Early Spathian, Triassic

***Neostreptognathodus exsculptus* Igo, Hh., 1981**

Paleont. Soc. Japan, Spec. Pap., no. 24, p. 40, 41, pl. 5, figs. 2-4a,b

Holotype: TGU, no. 1478* (figs. 3a, b)

Limestone exposure in middle course of Karadani in Yoro Mountains, Gifu Prefecture (35°17' 02" N, 136°32' 46" E)

Early Permian

***Neostreptognathodus foliatus* Igo, Hh., 1981**

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 41, pl. 5, fig. 6

Holotype: TGU, no. 1481*

Limestone exposure along road from Horikoshi-Pass to Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44' 01" N, 136°58' 32" E)

Akuda Formation

Early Permian

***Neostreptognathodus toriyamai* Igo, Hh., 1981**

Palaeont. Soc. Japan, Spec. Pap., no. 24, p. 42, 43, pl. 6, figs. 1-16

Holotype: TGU, no. 1502* (fig. 14)

Limestone exposure along road from Horikoshi Pass to Akuda, Gujio Hachiman-cho, Gifu Prefecture (35°44' 01" N, 136°58' 32" E)

Akuda Formation

Early Permian

(This species should be included in *Sweetognathus* Clark, 1972)

***Oistodus orientalis* Igo and Koike, 1967**

Geology and Palaeontology of Southeast Asia (T. Kobayashi and R. Toriyama, eds., Univ. Tokyo Press), vol. 3, p. 21, pl. 2, fig. 18

Holotype: TUE, no. 23138*

Plau lagoon, Langkawi Islands, Malaysia

Lower Setul Limestone

Middle Ordovician

***Platyvillosus hamadai* Koike, 1982**

Geology and Palaeontology of Southeast Asia (T. Kobayashi, R. Toriyama and W. Hashimoto, eds., Univ. Tokyo Press), vol. 23, p. 45, pl. 5, figs. 10-36

Holotype: YNUC, no. 1054* (figs. 26, 27)

Limestone quarry at Gunong Keriang, Kedah, Malaysia

Smithian, Triassic

***Polygnathus cupidi* Hayashi, 1968**

Earth Science, vol. 22, no. 2, p.73, pl.3, figs.12a, b

Holotype: AD, no.67/35*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)

Adoyama Formation

Triassic

(This species might be included in *Gladigondolella* Müller, 1962)

***Polygnathus japonicus* Hayashi, 1968**

Earth Sci., vol. 22, no. 2, p.73, pl.3, figs.1a-c

Holotype: AD, no. 67/24*

Karasawa Mine of Sumitomo-Osaka Cement Co. Ltd., Aisawa, Kuzuu-machi, Tochigi Prefecture (36°24' N, 139°36' E)

Adoyama Formation

Ladinian, Triassic

(This species should be included in *Budurovignathus* Kozur, 1988)

***Streptognathodus expansus* Igo & Koike, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 53, p. 189, pl. 28, fig. 14

Holotype: TUE, no. 23033*

Nishiyama quarry of Omi Denka Co. Ltd., about 2 km SW of Omi-machi, Nishikubiki-gun, Niigata Prefecture (36°59' 59"N, 137°47' 34"E)

C₁ Formation of Omi Limestone Group

late Namurian, Carboniferous

***Streptognathodus japonicus* Igo & Koike, 1964**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 53, p. 188, 189, pl. 28, figs. 5-13

Holotype: TUE, no. 23032 * (fig.1)

Nishiyama quarry of Omi Denka Co. Ltd., about 2 km SW of Omi-machi, Nishikubiki-gun, Niigata Prefecture (36°59' 59" N, 137°47' 34" E)

C₁ Formation of Omi Limestone Group

Late Namurian, Carboniferous

(This species was revised to *Declinognathus japonicus* (Igo and Koike) by Kulagina et al., 1992)

Trace fossils

Hiroshi Noda

**Institute of Geoscience, University of Tsukuba,
Tsukuba 305-8571, Japan**

***Akinereites awaensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci., 1, vol. 13, no. 6, p. 52-53, pl. 5, fig. 3

Type; Kochi University ?

Locality; Sea coast of Awa, Susaki City, Kochi Prefecture

Susaki Formation

Cretaceous

***Akinereites kannourensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci. 1, vol. 13, no. 6, p. 52, pl. 5, figs. 1-2

Type; Kochi University no. ?

Locality; Sea coast of Kannoura, Toyo-cho, Aki-gun, Kochi Prefecture

Naharigawa Formation

Eocene

***Anapaleodictyon irregulare* Tanaka, 1970 (MS)**

Rep. Geol. Surv. Jap., no. 236, p. 53-54, pl. 10, fig. 1

Holotype ; Geological Survey of Japan no. ?

Locality; Right bank of Pombetsu, Mikasa City, Hokkaido

Me Member of Middle Yezo Group

Cretaceous

(Tanaka (1971) identified his unpublished species (1970MS) as *Protapaleodictyon* sp.)

***Arafune tube* Katto, 1975**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 15, p. 118-119, pl. 1, figs. 1, 3

Type; Kochi University, no. ?

Locality; Arafune, Tawara, Higashi-muro-gun, Wakayama Prefecture

Shimosato Sandstone and Siltstone Member of the Koguchi Formation

Miocene

***Archaeozostera angustifolia* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 184, pl. 4, figs. 2-7, text-fig. 7B

Type; Department of Botany, Kyoto University no. ?

Locality; Tanakawa, Sennan-gun, Osaka and Miyakawauchi, Itano-gun, Tokushima Prefecture

Izumi Sandstone

Cretaceous

(Original description was written in Japanese. The species was identified with *A. longifolia* by same authors in 1953. The following species of *Archaeozostera* are all said to be preserved

at the Osaka City Natural Museum (Tokushima and Morozumi, 1987). The genus name was used as *Archeozostera* by the same authors (1953))

***Archaeozostera brevifloia* Koriba and Miki, 1931 (sic. *brevifloria*, *brevifloria*)**

Chikyū (Globe), vol. 15, no. 3, p. 184-186, pl. 5, fig. 11, text-fig. 7C

Type; Department of Botany, Kyoto University no. ?

Locality; Miyakawauchi, Itano-gun, Tokushima Prefecture

Izumi Sandstone

Cretaceous

(The original paper was written in Japanese and thence after identified with *pinnata* by same authors in English paper of 1953 under the name of *brevifloris* on p. 186)

***Archaeozostera lineata* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 186-187, pl. 5, fig. 9, text-fig. 7F

Type; Department of Botany, Kyoto University no. ?

Locality; Izumi-tani, Matsushima-mura, Itano-gun, Tokushima Prefecture

Izumi Sandstone

Cretaceous

(The species was written in Japanese as *Archaeozostera lineata* and redescribed in English (*Paleobotanist*, 1953, p. 109, pl. 2, fig. 11, text-fig. 3A)

***Archaeozostera longifolia* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 186, pl. 5, fig. 8, text-fig. 7E

Type; Department of Botany, Kyoto University no. ?

Locality; Tanagawa, Sennan-gun, Osaka Prefecture

Izumi Sandstone

Cretaceous

(The species was described originally in Japanese and was re-described by same authors (1953) in English (*Paleobotanist*, vol. 7, p. 107). *A. simplex* and *A. angustifolia* were included in the present species)

***Archaeozostera minor* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 187, pl. 5, figs. 12-13, text-figs. 1, 3, 7G

Type; Department of Botany, Kyoto University no. ?

Locality; Souritsudani, Ehara-mura, Mima-gun, Tokushima Prefecture

Izumi Sandstone

Cretaceous

(The original description was in Japanese and re-described by same authors in 1953 in English, *Paleobotanist*, vol. 7, p. 109)

***Archaeozostera pinnata* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 186, pl. 5, fig. 10, text-fig. 7D

Type; Department of Botany, Kyoto University no. ?

Locality; Aitachi-dani, Ehara-machi, Mima-gun, Tokushima

Prefecture

Izumi Sandstone

Cretaceous

(The original description was in Japanese and re-described by same authors in English (1953) (*Paleobotanist*, vol. 7, p. 110). *A. brevifolia* was included to the species)

***Archaeozostera saghaliensis* Endo, 1955**

Icons of Fossil plants from Japanese Island, Sangyo Tosho Co. Ltd., p. 2, pl. 1

Type; ?

Locality; No. sixth branch of Kiyokawa, a branch of Nayoshi-gawa, Nayoshi, Nayoshi-gun, Karafuto, Russia

Unnamed formation

Late Cretaceous

(No description was given but illustration)

***Archaeozostera simplex* Koriba and Miki, 1931**

Chikyū (Globe), vol. 15, no. 3, p. 184, pl. 4, fig. 1, text-fig. 7A

Holotype; Department of Botany, Kyoto University no. ?

Locality; Tanakawa, Sennan-gun, Osaka Prefecture

Izumi Sandstone

Cretaceous

(The species was re-described as *A. longifolia* by same authors (1953) in English (*Paleobotanist*, vol. 7, p. 107)

***Asteronereites* Omori, Ishida, Obata and the Research Group of Ripple mark in the Chichibu Basin, 1992**

Bull. Saitama Mus., Nat. Hist., no. 10, p. 60-61, pl. 5, figs. 1, 3-4, text fig. 6

Sakurai Formation

Middle Miocene

(The original proposal of the genus was in Japanese and no species was included)

***Ayalaites zambalensisana* Noda and Miranda, 1974**

Geol. Palaeont. Southeast Asia, vol. 14, p. 167-169, figs. 2a-c

Syntype; IGPS no. 92954

Locality; West of the Zambales Base Metal Inc. Camp on the upper reaches of the Ayala River, Ayala district, Zamboanga City, Philippines

Fortunato Formation

Miocene

***Byakudansauropus shiraminensis* Azuma and Takeyama, 1991**

Bull. Fukui Pref. Mus., no. 4, p. 42-43, pl. 2, fig. 1, text-fig. 14

Holotype; ISBEV no. 003

Locality; Road side cliff of Kuwajima in Shiramine-mura, Ishikawa-gun, Ishikawa Prefecture (Lat. 36°11' N, Long. 136°39'E)

Akaiwa Sandstone Member of Akaiwa Subgroup

Early Cretaceous (Berriasian-Barremian)

***Chondrites maekawaensis* (Hatai and Noda, 1971)**

see *Isawaites maekawaensis* Hatai and Noda, 1971

Saito Ho-on Kai Mus., Res. Rep., no. 40, p. 1-5, 2 figs. on p. pl. 1

Lectotype; IGPS no. 92079

Locality; Maekawa River side, south of Shimo-Orose, Isawa-mura, Isawa-gun, Iwate Prefecture

Maekawa Formation

Middle Miocene

***Cylindrichnus elongatus* Noda, 1984**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 10, p. 102-105, figs. 2a-5

Holotype; IGUT no. 10702

Locality; About 500m N of Takano-cho, Choshi City, Chiba Prefecture

Iioka Formation

Pliocene (late Pleistocene)

***Cylindrichnus japonicus* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 125-127, pl. 18, fig. 3

Holotype; GK-L no. 8737

Locality; NW coast of Iwaya Peninsula, Ashiya City, Fukuoka Prefecture

P₁ Bed of Sakamizu Group

Oligocene

(Two forms of concentric and eccentric are proposed)

***Cylindrichnus japonicus* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 125-127, pl. 18, figs. 5-6

Paratype; GK-L no. 8739

Locality; NW coast of Iwaya Peninsula, Ashiya City, Fukuoka Prefecture

P₁ Bed of Sakamizu Group

Oligocene

(Concentric form of the species)

***Cylindrichnus japonicus erectus* Omori, 1986**

Res. Rep., Fac. Arts and Sci., Azabu Univ., no. 19, p. 74, pl. 4, figs. 7-8, 10

Type; ?

Locality; North of prefectural road, north of Yomiuri-land Studium, Odakyu-line, Kawasaki City, Kanagawa Prefecture

Ikuta Sandstone

Pliocene

***Cylindrichnus miogaformis* Omori and Isogai, in Utashiro et al., 1983**

Mem. Fac. Educ., Niigata Univ., Nat. Sci., vol. 24, no. 2, p. 125-130, pl. 1, figs. 1-6B, pl. 2, figs. 1-9, pl. 3, figs. 1-12

Syntype; Niigata Univ., no. 8201

Locality; Prefectural road side cliff of east of Narasawa-pass

between Mizuguchi, Ojiya City and Narasawa, Oguni-machi, Kariha-gun, Niigata Prefecture
Middle to Lower Formation of Uonuma Group
Late Pliocene to Earliest Pleistocene
(The original description was given in Japanese with plate, and was described again under the new name of *Cylindrichnus* (*Rosselia*) *zingiberifloriformis* by different authors (Omori and Utashiro, 1989; Colab. Res. Group on Lebensspuren, 1989)

***Cylindrichnus* (*Rosselia*) *zingiberifloriformis* Omori and Utashiro, in Collab. Res. Group on "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 99-100, pl. 11, figs. 1-9

Type; Niigata Univ. no. 8201?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lowermost to Middle Formation of Uonuma Group

Pliocene

(The species name was proposed for *Cylindrichnus miogaformis* Omori and Isogai (1983) but is preoccupied)

***Cylindrichnus* (*Rosselia*) *zingiberifloriformis* var. *elongatum* Omori and Utashiro in Collab. Res. Group on "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 100, pl. 12, figs. 1-7, pl. 14, figs. 1-6b

Syntype; Niigata Univ. no. ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Middle Formation of Uonuma Group

Pleistocene

(Newly proposed variation name, *C. zingiberifloriformis elongatum* was originally given in Japanese and is not accepted by code of zoological nomenclature)

***Domichnia ocypodinae* Ohshima, 1971**

Res. Rep., Hokkaido Branch, Geol. Soc. Japan, no. 22, p. 25-26, pl. 1, figs. 1-2

Type; ?

Locality; Road side cliff at Osawa, east of Karihizawa, Shishinai, Toubetsu, Ishikari-gun, Hokkaido Prefecture

Zaimokuzawa Formation

Pliocene

***Domichnia scopimerinae* Ohshima and Matsui, 1966**

Chikyukagaku (Earth Science), no. 83, p. 38, pl. 1, fig. 1

Type; ?

Locality; River side cliff of the Kenashiporo-sawa, a tributary of the Toikanbetsu River, Horonobe-machi, Teshio-gun, Hokkaido Prefecture

Toikanbetsu Formation

Pliocene

(The present proposal is necessary to discuss by the code of zoological nomenclature)

***Domichnia sesarmae* Ohshima and Matsui, 1966**

Chikyukagaku (Earth Science), no. 83, p. 39-40, pl. 2, figs. 1-4

Type; ?

Locality; River side cliff of the Kenashiporo-sawa, a tributary of the Toikanbetsu River, Horonobe-machi, Teshio-gun, Hokkaido Prefecture

Toikanbetsu Formation

Pliocene

(The present proposal is necessary to discuss by the code of zoological nomenclature)

***Fodinichnia callianassae* Ohshima and Matsui, 1966**

Chikyukagaku (Earth Science), no. 83, p. 39, pl. 1, figs. 3-6

Type; ?

Locality; River side cliff of the Kenashiporo-sawa, a tributary of the Toikanbetsu River, Horonobe-machi, Teshio-gun, Hokkaido Prefecture

Toikanbetsu Formation

Pliocene

(The present proposal is necessary to discuss by the international code of zoological nomenclature)

***Fodinichnia upogebinae* Ohshima and Matsui, 1966**

Chikyukagaku (Earth Science), no. 83, p. 40, pl. 2, figs. 5-6

Type; ?

Locality; River side cliff of the Kenashiporo-sawa, a tributary of the Toikanbetsu River, Horonobe-machi, Teshio-gun, Hokkaido Prefecture

Toikanbetsu Formation

Pliocene

(The present proposal is necessary to discuss by the international code of zoological nomenclature)

***Gigantoshiraminesauropus matsuoii* Azuma and Takeyama, 1991**

Bull. Fukui Pref. Mus., no. 4, p. 40-41, pl. 1, fig. 3, text-figs. 10-11

Holotype; ISBEV no. 002

Locality; Road side cliff called the "Fossil Wall" of Kuwajima in Shiramine-mura, Ishikawa-gun, Ishikawa Prefecture (Lat. 36° 12'N, Long. 136° 38'E)

Kuwajima Member of the Upper part of Itoshiro Subgroup

Early Cretaceous (Berriasian-Barremian)

***Gyrolithes chosiensis* Omori, Ishida and Adachi, 1992**

Res. Rep., Fac. Arts and Sci., Azabu Univ., no. 25, p. 113-118, pl. 1, figs. 1-3, text-fig. 2

Type; ?

Locality; Sea coast of Kimigahama, Choshi City, Chiba Prefecture, Loc. no. 7316 of Obata *et al.* (1982)

Lower Member of the Kimigahama Formation

Late Cretaceous

***Gyrolithes okinawaensis* Myo Myint and Noda, 2000**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 26, p. 65-68, figs. 2A-C, 3

Holotype; IGUT no. 13309

Locality; About 200m SE of Inada Primary School, Gabesoka, along the Gabesoka-gawa River, Nago City, Okinawa Prefecture Nakoshi Formation

Pleistocene

***Haentzschelina shikokuensis* (Katto, 1960)**

Sci. Rep., Tohoku Univ. 2nd Ser. (Geol.), Spec. Vol., no. 4, p. 324, pl. 34, figs. 10, 13

Holotype; Tohoku University no. ?

Locality; Tatsukushi, Misaki, Tosashimizu City, Kochi Prefecture

Misaki Formation

Oligocene

(Originally described under the name of *Spongia shikokuensis* Katto, 1960)

***Halimedia* sp. (n. sp. ?) of Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 24, no. 6, p. 6-7, pl. 1, figs. 6-8

Unnamed in species level

Locality; Takatomi, Kushimoto-cho, Nishimuro-gun, Wakayama Prefecture

Shimosato Formation

Miocene

***Helminthoida japonica* Tanaka, 1970 (MS)**

Rep. Geol. Surv. Japan, no. 236, pl. 10, fig. 2

Paratype; GSJ no. 6905

Locality; Loc. no. IW 786a; Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Yezo Group

Cretaceous

(See *Helminthoida japonica* Tanaka, 1971, pl. 1, fig. 2)

***Helminthoida japonica* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 6-7, pl. 2, fig. 1

Holotype; GSJ no. 6971

Locality; Loc. no. IW 786b; Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Middle Yezo Group

Cretaceous

(The species was first appeared in Tanaka (1970, pl. 10, fig. 2) as a manuscript name)

***Helminthoida japonica* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 6-7, pl. 1, fig. 1

Paratype; GSJ no. 6905

Locality; Loc. no. IW 786a, Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Middle Yezo Group

Cretaceous

(The present paratype is same with the specimen of pl. 1, fig. 1 of Tanaka (1970) under the name of new species)

***Helmenthoida japonica* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 6-7, pl.1, fig. 2

Paratype; GSJ no. 6921

Locality; Loc. no. IW 786b, Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Middle Yezo Group

Cretaceous

***Helmenthoida japonica* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 6-7, pl. 3, fig. 1

Paratype; GSJ no. 6906

Locality; Loc. no. IW 786a, Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Middle Yezo Group

Cretaceous

***Helmenthoida japonica* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 6-7, pl. 3, fig. 2

Paratype; GSJ no. 6919

Locality; Loc. no. IW 786b, Right bank of the Pombetsu Valley, Mikasa City, Hokkaido

Me Member of the Middle Yezo Group

Cretaceous

***Helminthopsis akkesiensis* (Minato and Suyama, 1949)**

see *Magarikune akkesiensis* Minato and Suyama, 1949

***Helminthopsis toyoensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci. I, vol. 13, no. 6, p. 55-56, pl. 7, figs. 3-4

Type; Kochi University, no. ?

Locality; Sea coast of Kannoura, Toyo-cho, Aki-gun, Kochi Prefecture

Naharigawa Formation

Eocene

***Hitachia nakaminatoensis* Hatai and Noda, 1972**

Trans. Proc. Palaeont. Soc. Japan, N. S., no. 88, p. 460-461, pl. 55

Holotype; IGUT no. 91765

Locality; Sea coast at Hiraiso, Nakaminato City, Ibaraki Prefecture

Upper part of Hiraiso-machi Member of the Nakaminato Formation

Late Cretaceous

***Hydrodictyon tertiarum* Koriba and Miki, 1939**

Jubil. Publ., Commem. Prof. H.Yabe, 60th Birth. (Tohoku Imp. Univ.), vol. 1, p. 62, pl. 5, fig. 6

Type; Kyoto Univ. no. ?

Locality; Hologatani of Hokusogi, Kurisugawa, about 12km NE of Port Tanabe, along left side slope of the River Tonda, Wakayama Prefecture
Early Tertiary

***Inamichnis haratai* Nakazawa and Yoshimatsu in Nakazawa, Yoshimatsu, Terai and Mori, 1980**

Prof. S. Kanno Mem. Vol., p. 356-357, pl. 44, figs. 1-3
Type; Kyoto University no. ?
Locality; Maruyama, Innami-cho, Hitaka-gun, Wakayama Prefecture
Lower Member of Haroku Formation
Paleogene

***Isawaites kimatai* Hatai and Noda, 1973**

Saito Ho-on Kai Mus., Res. Bull., no. 42, p. 4, pl. 1, fig. 3
Type; IGPS no. ?
Locality; About 100m downstream from the small bridge crossing Ohatazawa at Hanayama-zawa, Hanayama-mura, Kurihara-gun, Miyagi Prefecture
Ohatazawa Formation
Miocene

***Isawaites maekawaensis* Hatai and Noda, 1971**

see ***Chondrites maekawaensis* Hatai and Noda, 1971**
Saito Ho-on Kai Mus., Res. Rep., no. 40, p. 1-5, 2 figs. on pl. 1
Type; IGPS no. 92079
Locality; Cliff of Maekawa River, south of Shimo-Orose, Isawa-mura, Isawa-gun, Iwate Prefecture
Maekawa Formation
Middle Miocene

***Ischnochiton tanosakiensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., Kochi Univ., Nat. Sci., I, vol. 25, no. 2, p. 20-21, pl. 6, fig. 1
Type; Kochi Univ., no. ?
Locality; Tanosaki near Kushimoto-cho, Nishimuro-gun, Wakayama Prefecture
Tanami Formation
Miocene

***Ischnichiton tanosakiensis* Katto, 1967**

Res. Rep., Kochi Univ., Nat. Sci., vol. 25, no. 2, p. 4-5
Type; ?
Locality; Tanosaki near Kushimoto-cho, Nishimuro-gun, Wakayama Prefecture
Tako Formation
Miocene

***Itsukisauropus izumiensis* Azuma and Takeyama, 1991**

Bull. Fukui Pref. Mus., no. 4, p. 45, pl. 2, fig. 2, text-figs. 17-18
Holotype; FPMN no. 900891
Locality; Road side cliff of Itsuki in Izumi-mura, Ono-gun, Fukui Prefecture (Lat. 35°55'N, 136°41'E)

Itsuki Shale Member of the Itoshiro Subgroup
Early Cretaceous (Berriasian-Barremian)

***Iwakiella ichiroi* Hatai, Kotaka and Noda, 1972**

Saito Ho-on Kai Mus., Res. Bull., no. 41, p. 2-6, 2 figs on p. 6
Holotype; IGPS no. 86669
Locality; Loc. no. 7, Slope of G2 valley at about 2.2km NW of Tamayama Mineral Spring, west of Yotsukura-cho, Iwaki City, Fukushima Prefecture
Kashiwadaira Formation
Middle Permian
(This species was first described under the name of *Tentaculites* sp. indet. by Yanagisawa, 1967)

***Iwateites taroensis* Hatai and Murata, 1974**

Saito Ho-on Kai Mus. Res. Bull., no. 43, p. 2-5, pl. 1
Type; SHM no. ?
Locality; Mouth of Setta River, Taro-cho, Shimohei-gun, Iwate Prefecture
Early Cretaceous

***Jeholosauripus ssatoi* Yabe and Shikama, in Yabe, Inai and Shikama, 1940**

Proc. Imp. Acad. Tokyo, vol. 16, no. 10, p. 560-563, figs. 1-2
Cotype; IGPS no. 61677
Locality; Some 40km south of Chaoyang, and 50km west of Chinchou (Ssuchiatzu near Yangshan), south of Chouyang in Chiuchon, Jeho, Manchuria, China
Jeho Formation
Early Cretaceous
(The new name was introduced by Yabe *et al.* (1940) and the details were discussed by Shikama in 1942)

***Keyia kiiensis* Katto, 1974**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 2, p. 10-12, pl. 1, figs. 1-5
Type; Kochi University no. ?
Locality; Arafune, Tawara, Higashimuro-gun, Wakayama Prefecture
Shimosato Sandstone and Siltstone Member of the Koguchi Formation
Miocene

***Kiivermus sabiuraensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 24, no. 6, p. 2-4, pl. 1, fig. 2
Type; Kochi University no. ?
Locality; Sabiura, Kushimoto-cho, Wakayama Prefecture
Shimosato Formation
Miocene

***Kubikichthys raris* Hatai and Noda, 1976**

Trans. Proc. Palaeont. Soc. Japan, N.S., N.S., no. 86, p. 319-322, pl. 39, fig. 1-3

Holotype; IGPS no. 92084

Locality; Cliff in the upper reaches of the Noo-River, at Kurosawa, Noo-machi, Nishikubiki-gun, Niigata Prefecture
Hiuchiyama Formation
Middle Miocene

***Kuwajimasauropus shiraminensis* Azuma and Takeyama, 1991**

Bull. Fukushima Prefec. Mus., no. 4, p. 43-44, pl. 2, fig. 3, text-figs. 15-16

Holotype; ISBEV no. 001

Locality; Road side cliff called the "Fossil Wall" of Kuwajima in Shiramine-mura, Ishikawa-gun, Ishikawa Prefecture (Lat. 36° 12'N, Long. 136° 38'E)

Kuwajima Member of the Itoshiro Subgroup
Early Cretaceous (Berriasian-Barremian)

***Magarikune akkesiensis* Minato and Suyama, 1949**

Japan. Jour. Geol. Geogr., vol. 21, nos. 1-4, p. 277-279, pl. 11, figs. 1-2

Type; Hokkaido University ?

Locality; Itoizawa, Akkeshi, Nemuro City, Hokkaido

Unnamed Formation

Cretaceous

(Tanaka (1971) revised the genus to *Helminthopsis*)

***Manchuriophycus inexpectans* Endo, 1933**

Japan. Jour. Geol. Geogr., vol. 11, nos. 1-2, p. 48, pl. 6, figs. 1-2, pl. 7, fig. 1

Syntype; IGPS no. 48104

Locality; Slope of Jinjayama (Shrine-hill), near Chiao-tou Station on the Antung-Mukden Line, South Manchuria

Nanshan Formation

Pre-Cambrian (Sinian)

***Manchuriophycus sawadai* Yabe, 1939**

Japan. Jour. Geol. Geogr., vol. 16, nos. 3-4, p. 205-207, pl. 10

Holotype; IGPS no. 62779

Locality; Ryozyun (Port Arthur), Ryoto Peninsula, Manchuria

Unnamed Precambrian

Pre-cambrian (Sinian)

***Manchuriophycus sawadai* Yabe, 1939**

Japan. Jour. Geol. Geogr., vol. 16, nos. 3-4, p. 205-207, pl. 11

Paratype; IGPS no. 62780

Locality; Ryozyun (Port Arthur), Ryoto Peninsula, Manchuria

Unnamed Precambrian

Pre-Cambrian (Sinian)

***Manchuriophycus yamamotoi* Endo, 1933**

Japan. Jour. Geol. Geogr., vol. 11, nos. 1-2, p. 47, pl. 6, fig. 3, pl. 7, fig. 2

Syntype; IGPS no. 48105

Locality; Slope of Jinjayama (Shrine-hill), near Chiao-tou

Station on the Antung- Mukden Line, South Manchuria

Nanshan Formation

Pre-Cambrian (Sinian)

***Mesonereis ragaensis* Hatai, 1968**

Japan. Jour. Geol. Geogr., vol. 39, nos. 2-4, p. 125-134, figs. 1-2

Holotype; IGPS no. 86733

Locality; South sea cliff of Raga, Tanohata-cho, Shimohei-gun, Iwate Prefecture

Miyako Group

Lower Cretaceous

***Mitospiralis ashizawaensis* Noda, 1982**

Inst. Geosci. Univ. Tsukuba, p. 20

Type; GIUM no. 3921

Locality; Road side of Ashizawa, Hisanohama-machi, Futaba-gun, Fukushima Prefecture

Ashizawa Formation

Cretaceous

(The name was proposed to the unnamed ichnofossil illustrated by Saito (1962) from the Ashizawa Formation)

***Moniopterus japonicus* Hatai, Masuda and Noda, 1974**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 95, p. 368-369, pl. 50, fig. 3

Holotype; IGPS no. 92956

Locality; Cliff south of the Oide Bridge crossing the Natori River, Sendai City, Miyagi Prefecture

Moniwa Formation

Middle Miocene

***Moniopterus japonicus* Hatai, Masuda and Noda, 1974**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 95, p. 368-369, pl. 50, figs. 4-6

Holotype; IGPS no. 92957

Locality; Southern cliff of the Aoba Golf Links, north of Osawa, Sendai City, Miyagi Prefecture

Moniwa Formation

Middle Miocene

***Nagatopedulichnus nabeshimaensis* Noda and Okamoto, 1988**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 14, p. 52-54, figs. 3-4

Syntype; Yamaguchi Prefectural Museum no. ?

Plastotype; IGUT no. 110239

Locality; Sea coast of Nabeshima, about 500m W of Okubo, Hohoku-cho, Toyoura-gun, Yamaguchi Prefecture

Taoyama Formation

Oligocene

***Nankaites kochiensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 13, p. 54-55, pl. 6, figs. 3-4

Type; Kochi University, no. ?

Locality; Sea coast of Ochikubo, Tosashimizu City, Kochi Prefecture

Shimizu Formation

Eocene

(*Tosalorbis kochiensis* (type species of *Nankaites*) was appeared for *Nankaites kochiensis*)

***Nereites murotoensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 326, pl. 35, fig. 3

Holotype; Tohoku University, no. ?

Locality; Sea coast of Hanezaki, Muroto City, Kochi Prefecture
Muroto Formation

Eocene

***Nereites murotoensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 326, pl. 35, figs. 14-15

Paratype; Tohoku University, no. ?

Locality; Sea coast of Hanezaki, Muroto City, Kochi Prefecture
Muroto Formation

Eocene

***Nereites murotoensis misakiensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 13, no. 6, p. 53-54, pl. 6, figs. 1-2

Type; Kochi University, no. ?

Locality; Sea coast of Chihiromisaki, Misaki, Tosashimizu City, Kochi Prefecture

Misaki Formation

Oligocene

***Nereites naganoensis* Saito, 1962**

Jour. Fac. Edu., Shinshu Univ., no. 12, p. 163, pl. 1, figs. 1-5

Type; Shinshu University ?

Locality; Bed of the Kanakuma River, a tributary of the Sai River, between Uruga and Ai in Ikusaka-mura, Higashi-Chikuma-gun, Nagano Prefecture

Aoki Formation

Middle Miocene

***Nereites tosaensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 324-326, pl. 35, fig. 17

Holotype; Tohoku University no. ?

Locality; Sea coast of Hanezaki, Muroto City, Kochi Prefecture
Muroto Formation

Eocene

***Nereites tosaensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 324-326, pl. 34, figs. 6, 12

Paratype; Tohoku University no. ?

Locality; Cliff at Jadani, Kitagawa-mura, Aki-gun, Kochi Prefecture

Muroto Formation

Eocene

***Notaculites toyomensis* Kobayashi, 1945**

Japan. Jour. Geol. Geogr., vol. 20, no. 1, p. 15-16, pl. 2

Type ; University of Tokyo no. ?

Locality; Southern slope of the Iwai Promontory, Iwaizaki, about 10km to south of Kesenuma, Miyagi Prefecture

Okatsu Claystone Member of Toyoma Series

Permian

***Odotula miyazakiensis* Hayasaka and Aoshima, 1975**

Rep. Fac. Sci., Kagoshima Univ., (Earth Sci. and Biol.), no. 8, p. 31, pl. 1, figs. 3-6

Syntype; ESK no. F-5011

Locality; Sea cliff at Izaki, about 1km NE of the Odotsu Railway Station on the Nichinan Line, Miyazaki Prefecture

Takigahirayama Formation of the Nichinan Group

Oligocene

***Okinawatubus cylindricus* Noda, 1983**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 9, p. 61-64, figs. 3a-3b

Holotype; IGUT no. 10701

Locality; Loc. no. 4, Cliff about 1km NE of Ihara, Sashiki-son, Shimajiri-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Ophiomorpha ashiyaensis* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 117-121, pl. 16, fig. 3

Holotype; GK-L no. 8725a

Locality; NW coast of Iwaya Peninsula, Kitakyushu City, Fukuoka Prefecture

Jinnohara Sandstone Member (O₁ Bed) of the Sakamizu Formation (Ashiya Group)

Miocene

***Ophiomorpha ashiyaensis* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 117-121, pl. 17, figs. 1, 2, 8, text-figs. 3-5B-C

Paratype; GK-L no. 8725b

Locality; NW coast of Iwaya Peninsula, Kitakyushu City, Fukuoka Prefecture

Sakamizu Formation

Miocene

***Ophiomorpha ashiyaensis* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 117-121, pl. 16, fig. 4

Paratype; GK-L no. 8725c

Locality; NW coast of Iwaya Peninsula, Kitakyushu City, Fukuoka Prefecture
Sakamizu Formation
Miocene

***Ophiomorpha ashियाensis* Shuto and Shiraishi, 1979**

Trans. Proc. Palaeont. Soc. Japan, N.S., no. 115, p. 117-121, pl. 18, figs. 1-2
Paratype; GK-L no. ?
Locality; NE sea coast of Ashiya, Kitakyushu City, Fukuoka Prefecture
Sakamizu Formation
Miocene

***Paleodictyon hokkaidoense* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 15-16, pl. 8, fig. 1
Holotype; GSJ no. 6964
Locality; Loc. no. IW 786a, Pombetsu Vallry, Mikasa City, Hokkaido Prefecture
Me Member of Middle Yezo Group
Cretaceous

***Paleodictyon hokkaidoense* Tanaka, 1971**

Rep. Geol. Surv. Japan, no. 242, p. 15-16, pl. 10, fig. 1
Paratype; GSJ no. 6965
Locality; Loc. no. IW 5008, Ikushumbetsu Valley, Mikasa City, Hokkaido Prefecture
Mb Member of the Middle Yezo Group
Cretaceous

***Paleodictyon robustum* Koriba and Miki, 1939**

Jubil. Publ., Commem. Prof. H. Yabe, 60th Birth. (Tohoku Imp. Univ.), vol. 1, p. 62, pl. 5, fig. 5, text-fig. 7
Type; Kyoto University no. ?
Locality; Horagatani of Hokusogi, Kurisugawa, about 12km NE of Port Tanabe, along left side slope of the River Tonda, Wakayama Prefecture
Unnamed Early Tertiary

***Paleodictyon tenue* Koriba and Miki, 1939**

Jubil. Publ., Commem. Prof. H. Yabe, 60th Birth. (Tohoku Imp. Univ.), vol. 1, p. 61-62, pl. 5, fig. 4
Type; Kyoto University no. ?
Locality; Horagatani of Hokusogi, Kurisugawa, about 12km NE of Port Tanabe, along left side slope of the River Tonda, Wakayama Prefecture
Unnamed Early Tertiary

***Paleoscopimera peculiaris* Katto, 1963**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 11, no. 5, p. 29-30, pl. 1, fig. 5
Type; Kochi University, no. ?
Locality; Higashi-shimozu, Sanyo-cho, Asa-gun, Yamaguchi Prefecture

Nakatsuka Formation
Triassic

***Pectinaria kiiensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 25, no. 2, p. 18, pl. 1, fig. 1
Type; Kochi University no. ?
Locality; Sea coast of Nakahirami, Kushimoto-cho, near the tip of Kii Peninsula, Nishimuro-gun, Wakayama Prefecture
Tako Formation
Miocene

***Pseudocucumaria arafunensis* Katto, 1974**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 3, p. 13-15, figs. 1-2
Lectotype; Kochi University no. ?
Locality; Arafune, Tawara, Higashi-muro-gun, Wakayama Prefecture
Shimosato Sandstone and Siltstone Member of Koguchi Formation
Miocene

***Pseudogalaxaura tube* Katto, 1975**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 15, p. 119, figs. 2, 4--5
Type; ?
Locality; Arafune, Tawara, Higashi-muro-gun, Wakayama Prefecture
Shimosato Formation
Miocene
(This is probably of *Tawara tube* Katto, 1975)

***Rodfaecis pelletica* Noda and Arakawa, 1994**

Ann. Rep., Inst. Geosci. Univ. Tsukuba, no. 20, p. 30-32, figs. 2-4
Syntype; IGUT. nos. 11804, 11805
Locality; Sea side cliff of south of Numanouchi, Toyoma-machi, Taira City, Fukushima Prefecture
Numanouchi Formation
Middle Miocene

***Sabiuracolites wakayamaensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 24, no. 6, p. 5-6, pl. 1, fig. 5
Holotype; Kochi University no. ?
Locality; Takatomi, Kushimoto-cho, Higashi-muro-gun, Wakayama Prefecture
Shimosato Formation
Miocene

***Sabiuracolites wakayamaensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 24, no. 6, p. 5-6, pl. 1, figs. 3-4
Paratype; Kochi University no. ?

Locality; Takatomi, Kushimoto-cho, Higashi-muro-gun, Wakayama Prefecture
Shimosato Sandstone and Siltstone Member of the Koguchi Formation
Miocene

***Sakoites yukioia* Katto, 1974**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 1, p. 2-5, pl. 1, figs. 1-4

Type; Kochi University no. ?

Locality; Arafune, Tawara, Higashi-muro-gun, Wakayama Prefecture

Shimosato Sandstone and Siltstone Member of the Koguchi Formation

Miocene

***Salmacinoidea kushimotoensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 25, no. 2, p. 18-19, pl. 1, fig. 2

Lectotype; Kochi University no. ?

Locality; Sea coast of Eda, Kushimoto-cho, Nishi-muro-gun, Wakayama Prefecture

E-Bed of Muro Group

Oligocene

***Sanbongicola nakagawai* Hatai and Masuda, 1973**

Saito Ho-on Kai Mus., Res. Bull., no. 42, p. 22-23, pl. 3, figs. 1-4

Holotype; IGUT no. ?

Locality; Tateyama, Sanbongi-machi, Shida-gun, Miyagi Prefecture

Omori Formation

Pliocene

***Sanyohelminthes egawasakiensis* Katto, 1965**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 13, no. 6, p. 56, pl. 7, fig. 5

Type; Kochi University no. ?

Locality; Egawasaki, Nishi-tosa-mura, Hata-gun, Kochi Prefecture

Susaki Formation

Cretaceous

***Sanyohelminthes takahashii* Katto, 1963**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 11, no. 5, p. 28-29, pl. 1, fig. 2

Type; Kochi University no. ?

Locality; Higashi-shimozu, Asa-machi, Sanyo-cho, Asa-gun, Yamaguchi Prefecture

Nakatsuka Formation

Triassic

***Scalartuba kiensis* Katto, 1976**

Res. Rep., Kochi Univ., Nat. Sci., vol. 24, no. 6, p. 4-5, pl. 1, fig.

1

Type; Kochi University no. ?

Locality; Takatomi, Kushimoto-cho, Nishi-muro-gun, Wakayama Prefecture

Shimosato Formation

Miocene

***Shiraminesauropus hayashidaniensis* Azuma and Takeyama, 1991**

Bull. Fukui Pref. Mus., no. 4, p. 39-40, pl. 1, fig. 2, text-figs. 8-9

Holotype; FPMN no. 900881

Locality; Road side cliff of Hayashidani in Izumi-mura, Ono-gun, Fukui Prefecture (Lat. 35°53'N, Long. 136°46'E)

Itsuki Shale Member of the upper part of Itoshiro Subgroup

Early Cretaceous (Berriasian-Barremian)

***Shiraminesauropus reini* Azuma and Takeyama, 1991**

Bull. Fukui Pref. Mus., no. 4, p. 38, pl. 1, fig. 1, text-figs. 6-7

Holotype; FPMN no. 850321

Locality; Road side cliff called "Fossil Wall" of Kuwajima, Shiramine-mura, Ishikawa-gun, Ishikawa Prefecture (Lat. 36°12'N, Long. 136°38'E)

Kuwajima Member of the Itoshiro Subgroup

Early Cretaceous (Berriasian-Barremian)

***Skolithos longituberlosum* Omori and Utashiro, in Coll. Res. Group of "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 100, pl. 11, figs. 10a-13

Type; Niigata University ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lower most to Lower Formation of Uonuma Group

Pliocene-Pleistocene

***Skolithos longituberlosum tenue* Omori and Utashiro, in Coll. Res. Group of "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 100, pl. 13, figs. 1-5

Type; Niigata University ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lower most to Lower Formation of Uonuma Group

Pliocene-Pleistocene

***Skolithos minutuberlosum* Omori and Utashiro, in Coll. Res. Group of "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 100-101, pl. 13, figs. 6-8

Type; Niigata University ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lower most to Middle Formation of Uonuma Group

Pliocene - Pleistocene

***Spiroraphe concentrica* Katto, 1965 (sic. for *Spirorhaphe*)**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 13, no. 6, p. 54, pl. 6,

fig. 5, pl. 7, fig. 2

Type; Kochi University ?

Locality; Sea coast of Kannoura, Toyo-cho, Aki-gun, Kochi Prefecture

Naharigawa Formation

(The species name was preoccupied by *Azpeitia*, 1933)

***Spongia shikokuensis* Katto, 1960**

Sci. Rep., Tohoku Univ. 2nd Ser. Geol., Spec. Vol., no. 4, p. 324, pl. 34, figs. 10, 13

Holotype; Tohoku University no. ?

Locality; Benten-jima, Tsumajiro, Tosashimizu City, Kochi Prefecture

Misaki Formation

Oligocene

(The species was transferred to the genus *Haentzschelina*)

***Takatomi rods* Katto, 1975**

Res. Rep., Kochi Univ., Nat. Sci., p. 116-117, pl. 1, figs. 6-7

Syntype; Kochi University no. ?

Locality; Takatomi, Kushimoto-cho, Higashi-muro-gun, Wakayama Prefecture

Shimosato Formation

Miocene

***Taonurus uedai* Yabe, 1950**

Proc. Japan. Acad. Sci., vol. 26, no. 8, p. 36-38, fig. 1

Holotype; IGPS no. 66344

Locality; Near Mengchiaching, eastern hills of Taiyuan, Shansi, China

Taiyuan Formation

Lower Permian

***Tawara tube* Katto, 1975**

Res. Rep., Kochi Univ., Nat. Sci., vol. 23, no. 15, p. 119, pl. 1, figs. 2, 4-5

Type; Kochi University no. ?

Locality; Arafune, Tawara, Migashi-muro-gun, Wakayama Prefecture

Shimosato Sandstone and Siltstone Member of the Koguchi Formation

Miocene

(Same with *Pseudogalaxaura tube* Katto, 1975)

***Terebellina kattoi* Hatai and Saito (sic)**

Japan. Jour. Geol. Geogr., vol. 33, nos. 2-4, p. 246-249, fig. 2

Holotype; IGPS no. 79327

Locality; Road side outcrop, about 1km east of Minamihana, Sakaki-mura, Hanishina-gun, Nagano Prefecture

Bessho Formation

Early Middle Miocene

(This was misspelled as *Terebellina* for *Terebellina* and was transferred to *Yokoia* by Hatai and Noda in 1975)

***Terebellina kochiensis* Katto, 1977**

Res. Rep., Kochi Univ., Nat. Sci., vol. 25, no. 13, p. 114, pl. 2, figs. 1-2

Type; Kochi University no. ?

Locality; Mama, Kochi City, Kochi Prefecture

Arida Series

Early Cretaceous

***Terebellina nichinanensis* Aoyama, 1976**

Chigaku Kenkyu, vol. 27, nos. 1-3, p. 92-95, fig. 3

Type; ?

Locality; Sea cliff at Izaki of Odotsu, Nichinan City, Miyazaki Prefecture

Takigahirayama Formation

Oligocene-Miocene

***Terebellina shikokuensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 328-329, pl. 34, fig. 1, pl. 35, fig. 7

Holotype; Tohoku University no. ?

Locality; Sea cliff at Kannoura, Toyo-cho, Aki-gun, Kochi Prefecture

Naharigawa Formation

Eocene

***Terebellina shikokuensis* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 328-329, pl. 34, fig. 3

Paratype; Tohoku University no. ?

Locality; Fishing-port of Nabae, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Terebellina kattoi* Hatai and Saito, 1962 (sic)**

Japan. Jour. Geol. Geogr., vol. 33, nos. 2-4, p. 246-249, fig. 2

Holotype; IGPS no. 79327

Locality; Road side outcrop, 1km E of Minamihana, Sakaki-machi, Hanishina-gun, Nagano Prefecture

Bessho Formation

Early Miocene

(This was misspelled as *Terebellina* for *Terebellina* and transferred to *Yokoia* by Hatai and Noda, 1975)

***Thalassinoides giganteus* Shuto and Shiraishi, 1979**

Trans. Prooc., Palaeont. Soc. Japan, N.S. no. 115, p. 124-125, pl. 16, figs. 5, 7

Holotype; GK-L. no. 8735a, Kyushu University

Locality; Western sea coast of Iwaya, Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture

Jinnohara Sandstone Member of the Sakamizu Formation

Miocene

***Thalassinoides giganteus* Shuto and Shiraishi, 1979**

Trans. Prooc., Palaeont. Soc. Japan, N.S. no. 115, p. 124-125, pl.

16, fig. 8

Paratype; GK-L. no. 8735b, Kyushu University

Locality; Western sea coast of Iwaya, Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture

Jinnohara Sandstone Member of the Sakamizu Formation

Miocene

***Thalassinoides iwayaensis* Shuto and Shiraishi, 1979**

Trans. Proc., Palaeont. Soc. Japan, N.S. no. 115, p. 121-124, pl. 17, fig. 4

Holotype; GK-L. no. 8731a

Locality; NE coast of Iwaya Peninsula, Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture

Jinnohara Sandstone Member of the Sakamizu Formation

Miocene

***Thalassinoides iwayaensis* Shuto and Shiraishi, 1979**

Trans. Proc., Palaeont. Soc. Japan, N.S. no. 115, p. 121-124, pl. 17, fig. 9

Paratype; GK-L. no. 8731b

Locality; Wakamatsu-ku, Kitakyushu City, Fukuoka Prefecture

Jinnohara Sandstone Member of the Sakamizu Formation

Miocene

***Tibikoia fudoensis* Hatai, Kotaka and Noda, 1970**

Saito Ho-on Kai Mus., Res. Bull., no. 39, p. 7-9, fig. 1

Holotype; IGPS no. 88062

Locality; Fudo, Kogota-machi, Toda-gun, Miyagi Prefecture

Kogota Formation

Pliocene

***Tigillites annulatus* Omori and Utashiro, in Collab. Res. Group on "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japan, no. 35, p. 101, pl. 12, figs. 8-10

Type; ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lower most Formation of the Uonuma Group

Pliocene

***Tigillites pipeformis* Omori and Utashiro, in Collab. Res. Group on "Lebensspuren", 1989**

Monogr. Assoc. Geol. Collab. Japn, no. 35, p. 101, pl. 13, fig. 9

Type; ?

Locality; Near Narasawa-pass, Ojiya City, Niigata Prefecture

Lower Formation of the Uonuma Group

Pliocene

***Tisoa okinawa* Noda, 1987**

Ann. Rep., Inst. Geosci., Univ. Tsukuba, no. 13, p. 100-103, figs. 5-8b

Holotype; IGUT no. 11025

Locality; About 500m east from Tobaru, Miyagi-shima, Yonagusuku-son, Nakagami-gun, Okinawa Prefecture

Shinzato Formation

Pliocene

***Tosahelminthes curvata* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 333, pl. 35, fig. 1

Holotype; Kochi University no. ?

Locality; Sea coast of Kaname, Shishikui-cho, Kaifu-gun,

Tokushima Prefecture

Naharigawa Formation

Eocene

***Tosalorbis hanzawai* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 327-328, pl. 34, fig. 7

Paratype; IGPS no. ?

Locality; Sea coast of Gyotozaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Tosalorbis hanzawai* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 327-328, pl. 35, figs. 8, 10

Holotype; IGPS no. ?

Locality; Sea coast of Gyotozaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Tosalorbis hanzawai* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 327-328, pl. 35, figs. 8, 10

Paratype; IGPS no. ?

Locality; Sea coast of Gyotozaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Tosalorbis hataii* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 327-328

Type; IGPS no. ?

Locality; South of Aterazawa-machi, Higashi-murayama-gun, Yamagata Prefecture

Toyoda Formation

Miocene

(The new name was proposed for peculiar-sand pipe from the Miocene Toyoda Formation in Yamagata Prefecture reported by Hatai 1957, p. 95, figs. 1-5)

***Tosalorbis kattoi* Hatai and Kotaka, 1961**

Trans. Proc. Palaeont. Soc. Japan, N.S. , no. 43, p. 124-126, pl. 17, figs. 1-4

Holotype; IGPS no. 79186

Locality; Near the Seto Marine Biological Laboratory at Shirahama, Nishi-muro-gun, Wakayama Prefecture

Kanayama Formation
Miocene

“*Tosalorbis*” *kochiensis* Katto, 1965

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 13, no. 6, p. 54-55, pl. 6, figs. 3-4

Type; Kochi University ?

Locality; Sea coast of Ochikubo, Tosashimizu City, Kochi Prefecture

Shimizu Formation

Eocene

(This name was used as *Nankaïtes kochiensis* Katto, n. sp. at the explanation of plate. In 1965, Katto mentioned “*Tosalorbis*” *kochiensis* should be included in the genus *Nankaïtes*)

***Tosalorbis onoppunaiensis* Noda, 1987**

Human Culture and Environmental Studies in Northern Hokkaido, Univ. Tsukuba, no. 8, p. 1-11, 8, p. 1-11, pl. 1, figs. 1a-b, text-fig. 3

Holotype; IGUT no. 11020

Locality; Road side cliff along the Teshio River, about 2.1km east of Onoppunai, Teshio-cho, Teshio-gun, Hokkaido

Wakkanai Formation

Late Miocene

***Tosalorbis peculiaris* Katto, 1960**

Sci. Rep., Tohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 328, pl. 35, fig. 9

Holotype; Tohoku University, no. ?

Locality; Sea coast of Gyotozaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Tosalorbis peculiaris* Katto, 1960**

Sci. Rep., Toohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 328, pl. 34, fig. 5

Paratype; Tohoku University, no. ?

Locality; Sea coast of Gyotozaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Tosalorbis peculiaris* Katto, 1960**

Sci. Rep., Toohoku Univ., 2nd Ser., Geol., Spec. Vol., no. 4, p. 328, pl. 35, fig. 4

Paratype; Kochi University, no. ?

Locality; Sea coast of Gyoto-zaki, Muroto City, Kochi Prefecture

Muroto Formation

Eocene

***Toyonereites eitaroi* Katto, 1963**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 11, no. 5, p. 26-28, pl. 1, fig. 1

Type; Kochi University no. ?

Locality; Kamonosho, Sanyo-cho, Asa-gun, Yamaguchi Prefecture
Kamonosho Formation
Triassic

***Toyonereites eitaroi sanyoensis* Katto, 1963**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 11, no. 5, p. 29, pl. 1, figs. 3-4

Type; Kochi University no. ?

Locality; Kamonosho, Sanyo-cho, Asa-guni, Yamaguchi Prefecture

Kamonosho Formation

Triassic

***Toyonereites kannourens* Katto, 1963**

Res. Rep., Kochi Univ., Nat. Sci., I, vol. 11, no. 5, p. 26-27

Type; Kochi University no. ?

Locality; Sea coast of Kannoura, Toyo-cho, Aki-gun, Kochi Prefecture

Naharigwa Formation

Eocene

(This species was named for the excrements of unknown affinity by Katto, 1960, p. 332-333, pl. 34, fig. 4)

***Utatsuia miyagiensis* Hatai and Murata, 1976**

Saito Ho-on Kai Mus., Res. Bull., no. 44, p. 3-4, pl. 1, fig. 3

Holotype; SHM no. ?

Locality; About 450m NE of Ishihama, Utatsu-cho, Motoyoshi-gun, Miyagi Prefecture

Toyoma Formation

Late Permian

***Utatsuia miyagiensis* Hatai and Murata, 1976**

Saito Ho-on Kai Mus., Res. Bull., no. 44, p. 3-4, pl. 1, figs. 1-2

Paratype; SHM no. ?

Locality; About 450m NE of Ishihama, Utatsu-cho, Motoyoshi-gun, Miyagi Prefecture

Toyoma Formation

Late Permian

***Vermitubus sumitaensis* Hatai, Murata and Kawakami, 1972**

Saito Ho-on Kai Mus., Res. Bull., no. 41, p. 30-33, pl. 4, figs. 1-14

Syntype; IGPS no. 92044

Locality; Motoiwazawa, Kawaguchi, Sumita-cho, Kesen-gun, Iwate Prefecture

Motoiwazawa Member of Sakamotozawa Formation

Permian

(This is originally described under the name of *Dentalium (Plagioglypta) herculum* de Konick and *D. (Laevidentalium) cf. priscum* Muenster by Hayasaka (1925; Sci Rep., Tohoku Imp. Univ., 2nd Ser., vol. 8, no. 2)

***Yokoia kattoi* (Hatai and Saito, 1962)**

See *Terebellina kattoi* Hatai and Saito, 1962