Proceedings of the Academy of Natural Sciences of Philadelphia.
Philadelphia,Academy of Natural Sciences of Philadelphia
https://www.biodiversitylibrary.org/bibliography/6885

v.7 (1854-1855): https://www.biodiversitylibrary.org/item/17735

Article/Chapter Title: Description of some new marine invertebrates
Author(s): William Stimpson
Subject(s): polychaeta, taxonomy
Page(s): Text, Text, Text, Text, Text, Text, Text, Text, Text, Text, Text

This page intentionally left blank.

July 17*th*, 1855.

Major LE CONTE in the Chair.

A letter was read from the Corresponding Secretary of the California Academy of Natural Sciences, transmitting the Proceedings of that Society, vol. i. pp. 1—45.

Dr. Leidy presented a paper intended for publication in the Proceedings, entitled, "Descriptions of some new Marine Invertebrata, by William Stimpson, Zoologist to the U. S. Surveying Expedition to the North Pacific, Japan Seas, &c., under Commander C. Ringgold, U. S. N." Communicated by the Smithsonian Institution. Referred to Dr. Leidy, Dr. Bridges and Mr. Cassin.

July 24*th*.

Vice President BRIDGES in the Chair.

Letters were read—

From the Trustees of the New York State Library, dated Albany, 20th July, 1855, acknowledging the receipt of last No. of the Proceedings.

From the Smithsonian Institution, dated Washington, March 26, and June 16th, 1855, also acknowledging receipt of same, and of the Journal, Part i. Vol. iii.

From C. F. Hagedorn, Esq., Bavarian Consul, announcing the decease of Dr. J. G. Flügel, of Leipsic.

Dr. J. Aitken Meigs read a paper intended for publication in the Journal, entitled, "Relation of Atomic Heat to Crystalline Form." Referred to Dr. Leidy, Dr. Bridges and Dr. Drysdale.

July 31*st*.

Vice President BRIDGES in the Chair.

The Committee on Mr. Stimpson's paper, read 17th inst., reported in favor of publication in the Proceedings.

Descriptions of some new Marine Invertebrata. By WM. STIMPSON, *Zoologist to the U. S. Surveying Expedition to North Pacific, Japan Seas, etc., under direction of Commander C. Ringgold, U. S. N.*

(Communicated by the Smithsonian Institution.)

ECHINODERMATA.

1. OPHIOTHRIX SPONGICOLA. Disk covered with short spines, except on the large triangular plates at the bases of the arms; the sides with scattered, minute spines; the interbrachial plates below subrhombic in shape. Arms in length seven times the diameter of the disk, broad near their origins but very slender at their extremities; lateral spines six in each row, the upper ones being largest, subclavate, with rounded extremities, compressed and distantly serrated.

The spines near the extremities of the arms are, however, generally pointed. Disk reddish, with black spots symmetrically arranged; arms red, broadly annulate with black; spines pale brownish. Diameter, 4 inches. Found among soft sponges in the circumlittoral zone.

Hab. Australia, at Port Jackson.

2. OPHIOTHRIX PLANULATA. Disk and arms much depressed; the latter in length ten times the width of the former. Disk small, smooth and glossy above; arm-plates broadly triangular, separated from each other by a row of the small plates with which the rest of the disk is covered. Below, the sides of the disk, between the arms, are soft and covered with short spines; the interbrachial plates subrhombic, but not very distinct. The mouth-fissures have each two large suckers, but no papillæ on their sides. Arms suddenly tapering at the middle; their superior plates trapezoidal and minutely granulated; lateral spines five in each row, the middle ones largest, compressed, with blunt extremities, longitudinally striated, and denticulated on their edges. Disk dark greenish; arms colored with red and light brown alternately: below white. Taken in fifteen fathoms among dead corals, on "Groper Shoal," in S. Lat., 20° E. Lon. 160½.

3. OPHIOLEPIS PERPLEXUS. Arms filiform, in length about seventeen times the diameter of the disk. Dorsal surface of the disk covered with small scales, the arm-plates of each pair being elongated, very narrow, broadest exteriorly, and including a triangular space between them; ventral surface with the interbrachial plates broader than long; mouth with a pair of large scale-like papillæ at the summit of each projecting angle, and a pair at the base of each fissure. Lateral spines of the arms five in number in each row, short, thick, and pointed. Disk above dark greyish; arms purplish-brown, darker and lighter alternately; below reddish. The disk is very soft and is always cast by the animal when caught; the slender arms then twisting together in all directions. Found in the circumlittoral zone in mud.

Hab. Australia, at Port Jackson.

4. THYONE BUCCALIS. Subfusiform, of a brownish-grey color, with the suckers small, uniformly distributed over the whole surface. Anus with five calcareous papillæ. Tentacula much branched, ten in number, two of which are much smaller than the rest. The oral column is the most remarkable feature in this species, it being about one-half as long as the body, and consisting of a flexible calcareous cylinder, contorted below, and sending ten short spurs of points upward, and five pairs of long twisted ones downward. Its flexibility is owing to the circumstance that its calcareous matter is deposited in the form of irregular plates connected by softer parts. The inferior spurs thus seem jointed. Length, 2 inches; breadth, 0.35 inches. Taken near low water mark, under stones.

Hab. Australia, at Port Jackson.

5. CHIRODOTA AUSTRALIANA. Small, and very slender; surface covered with papillæ of two kinds; the smaller and less conspicuous of which are spread everywhere, and consist of accumulations of spiculæ, which are hooked at one extremity and slightly bent at the other. The larger kind are scattered, quite thickly, along one side of the body only; and are prominent, circular, white, calcareous, varying in size from 1-40th to 1-20th of an inch in diameter; they are composed of accumulations of minute, six-spoked wheels. The tentacula are ten in number, each having ten serrulated digitations, placed on the outer and the lateral margins of a sort of disk, which forms the anterior half of the inner side of the tentacle. Color, pale yellowish. Length, 2 inches; breadth, 0.2 inch. Found under stones, near low-water mark.

Hab. Australia, at Port Jackson.

6. SYNAPTA DOLABRIFERA. Slender, but rather short, of a dirty yellowish color; skin very thickly provided with hook-bearing plates, which have usually

about ten perforations, the middle ones largest. The hamulæ are a little larger than the plates, pickaxe-shaped, with the extremity of the handle also provided with a double hook, though of very small size. Tentacula twelve, digitate nearly to their bases; digitations short, about fourteen in number to each tentacle. Length 2 inches. Found under stones, near low-water mark.

Hab. Australia, at Fort Jackson.

TUNICATA.

7. CYNTHIA ANGULARIS. Small, elongated, with a small base, and seven or eight longitudinal ridges; test coriaceous, nearly smooth between the ridges, of a pale yellowish color; apertures square, at the extremities of short tubes which are placed close together at the extremity of the body; each tube with four longitudinal reddish bands corresponding to the angles. Length, 1 inch; breadth, 0.3 inch. On sea-weeds in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

8. CYNTHIA LÆVISSIMA. Egg-shaped; test very thick, of a pale orange color, very smooth and glossy; apertures small, red. Branchial sac with about 20 folds, and with twenty elongated, fimbriated tentacles at its apertures. Some of these tentacles, as is usually the case in this genus, are much smaller than the others. Length 1 inch. Found under stones in the lower part of the littoral zone.

Hab. Australia, at Port Jackson.

9. CYNTHIA SABULOSA. Rounded, laterally compressed, usually attached by one or more short stalks. Test strong and hard, but not very thick; surface covered with sandy particles, which adhere so strongly as to form part of its substance. Apertures on slight prominences, the branchial largest and dotted with black. Branchial folds eight in number, narrower than their interspaces. Branchial tentacles simple, filamentary, long and very numerous. Diameter 1 inch. Found in the circumlittoral zone, on muddy bottoms.

Hab. Australia, at Port Jackson.

10. CYNTHIA DUMOSA. Globular, of a yellowish-brown color; surface villous, and provided with numerous stout, sub-conical processes of the test, which have short irregular branches. Apertures cross-shaped when contracted; the branchial more than twice the size of the anal. Branchial sac with twelve very large folds, which are much broader than their interspaces. Tentacula also twelve in number, including four or five small ones; biserrate, folded longitudinally, and curved so as to present their pinnæ toward the branchial cavity. Diameter 1 inch. Found in the circumlittoral zone, on muddy bottoms.

Hab. Australia, at Port Jackson.

11. MOLGULA INCONSPICUA. Small, free, bullet-shaped; test thin, brittle, with a thin but solid coating of sand; apertures clear, transparent white; the branchial six-rayed; the anal with four well-marked lobes. Branchial sac with eight folds equalling their interspaces in width. Diameter, half an inch. Found in the circumlittoral zone, on sandy bottoms.

Hab. Australia, at Port Jackson.

12. ASCIDIA SYDNEIENSIS. Gregarious, several specimens growing together in one mass. Test irregular in shape, thin, often translucent, of a pale purplish color. Apertures on long tubes, which are marked with longitudinal ridges corresponding in number with the rays of the apertures; the branchial having seven, the anal six rays. Branchial sac finely reticulated, the transverse threads much less prominent than the longitudinal ones. Tentacula simple, thread-like, about one hundred in number, curved and projecting into the cavity so as to form a dome-like filter for the water as it enters the branchial sac. Length $1\frac{1}{2}$ inches. Found near low-water mark, among rocks.

Hab. Australia, at Port Jackson.

13. ASCIDIA SUCCIDA. Test thick, cartilaginous, juicy, irregularly lobed, especially near the apertures, which are sessile, rather large, valvate, and difficult to detect in the contracted specimen. Branchial sac reticulated, the reticulations sharply projecting, the transverse striæ, being as prominent as the longitudinal ones, which are about ninety in number. Tentacles simple, filamentary, distantly arranged around the entrance of the sac, and only twenty in number. Color of the posterior part of the body purplish; the rest much paler; apertures ferruginous. Length $1\frac{1}{2}$ inches. Found near low-water mark, among stones.

Hab. Australia, at Port Jackson.

NUDIBRANCHIATA.

14. EOLIS CACAOTICA. Slender, tapering posteriorly to a fine point; of a clear pale rose color on the body above, and on the anterior margin of the foot. Tentacula rather short, rose-colored; the orals a little the longest; dorsals tipped with white, and having a ring of white at the base; eyes large and conspicuous Branchiæ of a dark chocolate color, compressed, tipped with white; arranged in eight or ten clusters, and placed on the sides of the body, anteriorly, leaving much of the back bare; more numerous and crowded posteriorly so that the clusters become indistinct. Length $1\frac{1}{2}$ inches. Found under stones, in the littoral zone.

Hab. Australia, at Port Jackson.

15. TRITONIA PALLIDA. Truncate in front, tapering gradually behind; of a transparent white color, with a few flake-white spots on the back; oral veil large, with eight elongated digitations, four on each side; tentacles rather long, with their sheaths having waved edges, and the filaments around the truncated extremity of a dark brownish color. Branchiæ small, margined with flake-white, extending in a line on each side along the upper edges of the body; the more conspicuous tufts being sixteen in number, having smaller ones between them. A white line extends below and parallel to the branchiæ, on the sides of the body. Length, 1 inch; breadth, 0.25 inch. On rocky bottoms, in the coralline zone.

Hab. False Bay, Cape of Good Hope.

16. TRIOPA LUCIDA. Depressed, broadest anteriorly; clavate appendages constricted at their bases, in number about forty, numerous and small in size at the head, the posterior ones largest. Tentacula long, with about twelve laminæ. In front of each tentacle, near the margin, stands a clavate process much longer than the others. Branchiæ consisting of three plumes, about equal in size. Color uniform transparent white, except that the tentacula, branchiæ, and appendages are all of a yellowish color towards their extremities. The tips of the clavæ appear open or hollow from their transparency. Length, 0 8 inch. Found under stones, at low-water mark.

Hab. Cape of Good Hope, at Simon's Bay.

17. GONIODORIS? OBSCURA. Oblong, quadrilateral; cloak broad, widely projecting so as to conceal the oral tentacles anteriorly, and tapering from opposite the branchiæ, to a blunt point behind, disclosing the foot, which extends further to a distance of one-fourth the length of the body. Dorsal tentaculæ elongated, retractile, smooth and glossy to appearance, but having from twelve to fourteen laminæ. Branchiæ retractile, consisting of twelve elongated, simply-pinnate leaflets, which form a cup around the anus. Color a dark greenish, or yellowish grey, with numerous black and yellow dots; a row of black spots is conspicuous, margining both the mantle and the foot. Head and oral tentacles bluish-grey. Dorsal tentacles with red tips. Length, $1\frac{1}{4}$ inches; breadth, 0.3 inch. Found among soft sponges in the circumlittoral zone.

Hab. Australia, at Port Jackson.

This species, with another closely allied and occurring in the same locality form a genus probably new. It differs from *Goniodorus*, in having retractile ten-

tacula, and in the greater development of the mantle; and from *Doris* by the elevated, oblong, quadrangular shape of the body. I would propose for it the name of *Hypselodoris*.

18. Doris obtusa. Body very convex above; of a pale yellowish color, with brownish spots; mantle covered with minute crowned tubercles. Tentacula short, of a purplish brown color, with five transverse laminæ at their tips, where they are broadly and obliquely truncated. Branchiæ cousisting of a crown of eight short, simply pinnate leaflets. Length, 0.35 inch. Found among sponges in the circumlittoral zone.

Hab. Australia, at Port Jackson.

19. Doris excavata. Broad, depressed, of a yellowish color; mantle widely expanded, covered with minute, distant, tubercles. Foot broad in front, narrow behind and projecting a little distance beyond the posterior margin of the mantle. Tentacula of a purplish-brown color. Branchiæ consisting of five large, much branched plumes, which are retractile into a large, widely-open cavity. Length, 0.7 inch; breadth, 0.4 inch. Found among stones, etc., in the circumlittoral zone.

Hab. Australia, at Port Jackson.

TURBELLARIA.

20. Leptoplana patellarum. Large, dilated, depressed, nearly ovate in shape, broadest behind. Eyes in four clusters; the anterior ones elongated and nearest each other; the posterior ones rounded and situated on wart-like protuberances. Color above dark yellowish, mottled, darkest in the middle; below white. Length, 0.9 inch: breadth, 0.65 inch. Found under the large lime-pits which are common on the rocks at half-tide in Simon's Bay, Cape of Good Hope.

DIONCUS, n. g. Corpus planum, dilatatum. Caput corpore continuum. Os subcentrale. Ocelli numerosi, in umbones duos claros subdistantes dispositi. Maricolæ.

21. D oncus badius. Body half as broad as long, of a reddish-brown color, above, with a flake-white dust intermixed. Anteriorly there are two colorless, slightly prominent, circular knobs, which contain, scattered over the whole surface, the very numerous and minute eyes. Below, the body is of a pale sepia color, except the white digestive organs; and the mouth is placed behind the centre. Length, 1.5 inches; breadth, 0.75 inch. Found under stones in the littoral zone.

Hab. Australia, at Port Jackson.

22. Dioncus oblongus. Oblong-oval, of a pale, transparent, brownish-grey color above. Eye-clus ers two, black, conspicuous, each surrounded by a ring of white; the few large eye spots being crowded together at the summit only of the oculiferous knobs. Length, 1 inch; breadth, 0.35 inches. Found under stones in the littoral zone.

Hab. Australia, at Port Jackson.

23. Thysanozoon Australe. Oval, rather broad, of a dark color, mottled with blackish and brownish above; papillæ large, about sixty in number, nearly equal in size on all parts of the body. Eyes numerous, in an oval white patch between the bases of the tentacula, which is nearly divided in two by a wedge-shaped clear space entering from behind. Length, 1 inch; breadth, 0.6 inch. Found on soft sponges in the circumlittoral zone.

Hab. Australia, at Port Jackson.

24. Valencinia annulata. Elongated, convex above: head broad, abruptly truncated in front with a sligbt sinus at the middle, rounded at the sides and narrowing gradually to the neck. Color purplish-brown, with a pale-yellowish band across the head, and a narrow white annulation around the body just be-

hind the neck, which is followed by other similar rings at regular distances throughout the length of the body, to the number of about sixteen. A narrow median dorsal white line, commencing at the head, and two lateral ones, one on each side, communicating at the neck, also extend throughout. Length, 3 inches; breadth, at the middle, 0.08 inch. On weedy sand in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

25. POLIA RHOMBOIDALIS. Convex, largest anteriorly, of a pale reddish color, with darker sub-margined longitudinal stripes. Head narrower than the body, rounded in front; neck slightly marked. Eyes in four clusters; with four ocelli in each cluster, arranged at the angles of a diamond-shaped area. The clusters of the posterior pair are much the smaller, and are placed in the dark spots forming the commencement of the longitudinal stripes. Length, 1 inch: breadth, 0.05 inch. Found in the littoral zone.

Hab. Australia, at Port Jackson.

26. POLIA GRISEA. Elongated, subcylindrical, of a grey color; head distinct, subtriangular, much narrower than the body, and separated from it by a well-marked neck. Eyes in four clusters; two irregular rows on each side of the head to the number of twenty more; while on each side of the neck there is an elongated, oblique, reddish spot, with two or three ocelli along its outer edge. Length, 0.8 inch. Found on sand-flats in the litteral zone.

Hab. Coast of Virginia, at Norfolk.

27. TETRASTEMMA INSICUM. Minute, slender, convex, broadest behind the middle; head with the eyes distinct, and with a lateral fold between the anterior and posterior pairs, and one also behind the posterior pair. Color pale-brownish. Length, 0.4 inch; breadth, 0.025 inch. On weedy sand in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

28. MECKELIA OLIVACEA. Slender, convex above, especially anteriorly where is also the greatest breadth; head with a longitudinal slit which extends far down each side, and is covered by a slight vertical notch at the anterior extremity; genital opening large, on the lower surface of the neck, just behind the termination of the lateral slit. Color anteriorly very dark greenish, or olivaceous; posteriorly a much paler green, Length, 3 inches; breadth, 0.1 inch. Common in sandy bottoms in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

GEPHYREA.

29. PHASCOLOSOMUM NODULIFERUM. Sub-fusiform broad, terminating in a point posteriorly, of a pale brownish color; surface with numerous hard, dark-brown, large, elevated tubercles, which are uniformly scattered, and extend much beyond the arms toward the proboscis, around the base of which they become smaller. Proboscis smooth, except near its extremity, where it is annulated with narrow, crowded, delicate, black rings, which are seen by means of a magnifyer to be composed of minute echinulations. Mouth with two clusters of short tentacles or fimbriations, of different lengths. Color pale brown. Length of the body, 1.15; breadth, 0.4 inch. Under stones in the littoral zone.

Hab. Australia, at Port Jackson.

30. PHASCOLOSOMUM SEMICINCTUM. Of a light brown color, with bluish reflections; surface very smooth in appearance, but showing, under a magnifyer, a few minute, black, granulations, distantly scattered. Proboscis very long, annulated with narrow black rings towards the extremity; mouth with two tufts of blunt tentacula. Found in holes in coral, etc., in the coralline zone.

Hab. Cape of Good Hope, in False Bay.

In both these species the generative organs are placed one on each side of

the rectum ; their openings externally are indicated by a bluish spot on each side of, and distant from, the anus.

ANNELIDA.

31. Tecturella luctator. Subquadrilateral, turrited above, of the same thickness throughout except toward the posterior extremity ; the rings usually indicated by transverse folds of the envelope which is loose and flabby when the animal is alive, agglutinating sand, and of a yellowish-green color. Rings about forty in number. Anterior tentacles capable of being protruded to considerable length, when they are smooth and cylindrical. Posterior tentacles dark green, slender, and very numerous, in two clusters. Superior setæ capillary, as long as the inferior ones, and eight in number in each of the compressed fascicles which contain them. Inferior pinnæ containing each a single long stout hooked seta. Length, 1.5 inch. Found loosely attached under stones near low-water mark.

Hab. Cape of Good Hope, at Simon's Bay.

32. Siphonostomum læve. Body thickest near the middle, suddenly tapering and slender posteriorly ; much smoother than is usual in the genus, showing only the delicate, close, slightly-raised annulations. Superior setæ capillary ; inferior ones short, strong, curved, but not hooked. Setæ of three segments directed forward ; those of the first in four fan-like clusters, arranged so as to form a circle around the mouth ; those of the second segment much fewer in number, and placed on the sides of the body only ; those of the third not conspicuous. Anterior tentacles long, diverging ; posterior ones shorter, slender, about twenty in number, arranged in a half-circle as in *Sabella*. Colors : body pale reddish ; tentacles zonate with white, brownish, and pale green. Length, 2 inches ; breadth, 0.2 inch. Found in holes which it forms in fragments of corals, in the coralline zone.

Hab. Cape of Good Hope, at False Bay.

33. Chætopterus capensis. Small, short, having a general resemblance to *C. pergamentaceus ;* inhabiting a papyraceus tube. Annulations about thirty in number. Cephalic ring equalling in size the succeeding or first ring. In the first eight rings, the superior pinnæ only are developed, and are provided with long lanceolated setæ ; those of the third pair, however, have a fasciculus of stout black truncated setæ at their bases. Inferior pinnæ first appearing on the ninth ring, and provided with short uncinate setæ, which have each six or eight uncinæ, occupying the whole length of their edges. Dorsal pinnæ of the tenth ring expanded into wing-like lobes ; ventral pinnæ united into a transverse disc, as is also the case on the 11th, 12th and 13th. In the 11th—15th rings the dorsal pinnæ are united to form sacs, of which those of the 14th and 15th are much the smallest, and compressed above ; the ventral shields of these two rings are compressed, bilobate, and protruded so as to lose the disc-like form. Dorsal pinnæ of the 16th and succeeding rings large and finger-shaped, with capillary setæ ;—posteriorly they grow more slender but not much shorter. In these rings the ventral pinnæ form four lobes. Length 2 inches. Found in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

34. Chœtopterus luteus. Long and slender, cylindrical, of nearly the same thickness throughout ; color lemon-yellow. Tube thin, membranous within, exteriorly composed of mud. Rings about forty in number. Ventral shields of the 14th and 15th rings disk-like as in the others ; those of the posterior rings with the two middle lobes only developed. Dorsal pinnæ of the posterior rings full and lobe-like at the base, but suddenly tapering into a long sheath for their few capillary setæ. Length three inches. Found abundantly on muddy bottoms in the circumlittoral zone.

Hab. Australia, at Port Jackson.

35. Cirratulus australis. Large, rounded above, and flattened below, pos-

teriorly tapering. Head obtuse, eyes none; neck with two crowded clusters of filaments, one on each side of the back at the fourth segment; body with a series of filaments along each side, one to each ring; which, however, are in most specimens wanting on some of the rings. Setæ in two rows on each side; the superior ones capillary; the inferior ones (except anteriorly) short, stout and arranged three in number to each ramus. Color greenish or reddish-brown. Length, 9 inches; breadth, 0 45 inch. Found in the circumlittoral zone.

Hab. Cape of Good Hope, False Bay.

36. GLYCERA KRAUSSII. Of a light flesh color, composed of about 100 closely-set rings, at the 10th of which the breadth is greatest. Head subtriangular, with 16 segments; terminal tentacula scarcely perceptible. Proboscis smooth, in length one-fourth that of the body; teeth small, much curved. Pinnæ quadrilobate; the few superior setæ capillary; the inferior ones very numerous and falcate. Inferior cirrus large, lobe-like, placed close to the pinnæ; superior cirrus placed on the side of the body, remote from the pinnæ. The branchial tonguelet was retracted in the specimen examined. Length, 2 inches. Found in the circumlittoral zone, on sandy bottoms.

Hab. Cape of Good Hope, at Simon's Bay.

37. NEPHTHYS LONGIPES. Body somewhat depressed, of a bluish-white color, narrow in comparison with the length of the pinnæ which project to a distance equalling its width, on each side. Rings about eighty in number. Tentacula small, placed rather near the base of the head, two on each side. Proboscis with the terminal cirri short, the lateral ones large, curving backward, and covering the anterior half of the organ, in eight circular approximated rows. Pinnæ large; their membranous leaflets very narrow; the setæ capillary, of great length, and equal in number in the superior and inferior pinnæ. Branchial tonguelet large, much curved; often with a smaller one placed close to it on the superior pinnæ. Length, 3 inches; breadth, 0.42; of the body alone, 0.16 inch. In sand at low-water mark.

Hab. Australia, at Botany Bay.

38. LYSIDICE ROBUSTA. Body much thicker than is usual in the genus; very convex above, and flat below; of a copper color. Rings very closely-set, about one hundred and twenty in number. Head concealed, but provided with three conspicuous, tri-articulate tentacula, and with two large rounded lobes below. Proboscis very short; jaws very strong, calcareous externally, corneous within. Neck equalling the succeeding two rings together in size. Pinnæ very small; superior cirrus large, inferior one short; superior setæ capillary, lanceolated but tapering to a long hair-like extremity; inferior ones falcate with short smooth terminal joints; acicle blunt, of a dark-brown color. Length, 2.8 inches; breadth, 0.15 inch. Found under stones near low-water mark.

Hab. Australia, at Port Jackson.

39. NEREIS MENDAX. Small, rather slender, largest anteriorly, flattened posteriorly. Head elongated, narrow, with the terminal tentacles well developed and extending somewhat beyond the thick inferior ones; tentacula cirri very slender, variable in length, but usually reaching beyond the tentacles; eyes very conspicuous, the posterior ones largest and nearest to each other. Pinnæ rather large, anterior ones with pointed lingulæ, and dorsal and ventral cirri; in the posterior pinnæ the superior lingula loses its cirrus, and expands into a broad lamella. Color variable; pale red, or brownish, often farinaceous posteriorly; always with a dorsal line of flake-white, and a white spot between the eyes. Length, 1.5 inches; breadth, 0.2 inch. It inhabits a tube. Common in the circumlittoral zone.

Hab. Cape of Good Hope, at False Bay.

40. NEREIS OPERTA. Large, of an uniform dark sepia color above, paler below and posteriorly. Head short, eyes nearly hidden under the integument; inferior tentacles extending beyond the others. Anterior pinnæ with blunt lin-

gulæ, large superior cirri, and very stout inferior setæ. Posteriorly the cirri are reduced, the superior lingula compressed and slightly expanded, bearing the cirrus upon its upper edge. Maxillæ broad, little curved, and nearly smooth on their inner edges. Length, 4 inches; breadth, 0.35 inch. Found among rocks at low-water mark.

Hab. Cape of Good Hope, at Simon's Bay.

41. LEPIDONOTE SEMITECTA. Scales about twelve in number on each side, so small as to reach each other without overlapping and to leave the middle of the back bare. Head quadrangular with four minute eyes; and five tentacles, the median largest, the exterior ones longer than the intermediates, but like those annulated with black. Lateral cirri short, each with a black ring near its tip. Color greyish-crimson, with black dots along the middle of the back. Scales bright crimson, except at their attachments where they are white. Length 1 inch; breadth, 0.3 inch. Found at low-water mark, in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

CHORISTOPODA.

42. ANTHURA POLITA. Cylindrical, smooth and shining; the seventh segment nearly as large as the sixth. Head small, inferior antennæ as long as the head, somewhat larger than the superior ones and placed before them; eyes very minute, black, placed rather on the sides of the head at the anterior corners. Legs of the first pair very thick, the rest slender. Abdomen short and broad. Color pale greyish, mottled. Length, 0.9 inch; breadth, 0 13 inch. Found at the depth of two inches in sand, above half-tide.

Hab. Coast of the United States, at Norfolk.

43. ANTHURA PUNCTATA. Anterior segments elongated and slender, the sixth broadest, the seventh very short, and bearing a much smaller pair of legs than the others. Head scarcely narrower than the first thoracic segment, with a slight rostrum, and large black eyes at the anterior corners; the inferior antennæ largest. The first three pairs of legs have much larger hands than the posterior ones; those of the first pair being somewhat shorter and thicker than the others. Color greyish above, from the numerous minute, black punctations; pale yellowish or whitish below. Length, 0.8 inch; breadth, 0.8 inch. Found among Gorgoniæ in the coralline zone.

Hab. Cape of Good Hope, at Simon's Bay.

44. ANTHURA CATENULA. Very slender, whitish, with a hollow square of black on each segment above, giving a chain-like appearance to the back; head smaller than the first thoracic segment; antennæ rather long; eyes black, at the anterior corners of the first square of color; anterior pair of legs short, thick, and with strong, sub-cheliform hands; remaining legs slender. Abdomen slightly depressed, with a black transverse bar, and a few symmetrically arranged black spots posteriorly. Length, 0.7 inch; breath, 0.06 inch. Found under stones at low-water mark.

Hab. Cape of Good Hope, at Simon's Bay.

45. ANTHURA LÆVIGATA. Body smooth and shining, transparent white, except a few crimson spots at the extremities. Head narrow; antennæ small, flattened; eyes minute, red. First three pairs of legs stout, with equal, sub-cheliform hands; posterior legs slender. Abdomen with its posterior funnel-shaped cavity large, and with its anterior segments well-marked. Length, 1 inch; breadth, 0.2 inch. On sandy bottoms in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

46. CAPRELLA SOLITARIA. Smooth, slender, bright crimson; superior antennæ with large peduncles, inferior ones slender, sub-pediform. Head with a strong spine, pointed forward, between the minute eyes. Hands large, with two

spines within, the largest next the finger. Branchial leaflets of the third and fourth segments very small. Posterior legs with their terminal articles much curved. Length, 0.6 inch; breadth, 0.05 inch. A single specimen, the only *caprella* taken at the Cape, occurred on a gravelly bottom in Simon's Bay.

47. IPHIMEDIA OBESA. Robust, thick; superior antennæ longest, in length two-thirds that of the body, and with thick basal articles. Eyes very large, sub-reniform, black. Feet of the first two pairs with equal subcheliform hands of moderate size. Caudal stylets slender, smooth; the posterior ones bi-ramous. Tail terminating in one elongated scale. Color crimson with flake-white blotches. Length, 0.25 inch. Found in the circumlittoral zone, on weedy and sandy bottoms.

Hab. Australia, at Port Jackson.

48. ŒDICERUS FOSSOR. Body rounded above; abdomen with the third and fourth articles compressed and raised above into a sharp crest. Head with small round black eyes; superior and inferior antennæ equal, with stout flagella forming half their length, each flagellum consisting of about eighteen articles, and having a serrated appearance from the produced, spine-like inferior corners of each article. Mandibles palpigerous. External maxillipeds much elongated, and curving downward. Feet of the first two pairs with equal, rather broad, ovate hands, the finger being one-half as long as the hand; those of the third and fourth pairs with the terminal article sub-ovate or paddle-shaped, with a rounded extremity covered with hairs, without an unguiculus; fifth and sixth pairs very short, with a compressed, clavate, or cutlass-shaped terminal article. Epimera of the fifth pair very large, square. Caudal stylets all bi-ramous; those of the third pair with flattened rami, very hairy on their inner edges. Color white with a few blackish spots. Length 0.2 inch. Found in the littoral zone; concealing themselves in the sand as they are washed out from it by successive waves.

Hab. Australia, at Botany Bay.

49. GAMMARUS RUBRO-MACULATUS. Rather large, spotted with crimson above, white below. Eyes sub-ovate. Superior antennæ half as long as the body, inferior ones much shorter and more slender. First pair of hands very small and weak; those of the second pair large, compressed, and with a sharp spine at the middle of the lower edge, where the finger terminates. Abdomen exceeding the thorax in length, or at least equalling it, the appendages excluded. Last pair of caudal stylets half as long as the abdomen; their rami long and broad, equal, and spinulated along their edges. Length half an inch. Found on muddy bottoms in the circumlittoral zone.

Hab. Australia, at Port Jackson.

50. LEUCOTHOE AFFINIS. Robust, thick anteriorly, narrowed much at the abdomen, of a crimson color, mottled with white. Antennæ equal in length, slender, uniform in thickness as far as the short flagellum, where they abruptly diminish in size. Eyes large, ovate, broadest above, whitish, with black beneath. First pair of hands with the thumb and first article of the bi-articulate finger greatly elongated and slender; second pair of hands very large, ovate formed of the penult joint, with a parallel curved thumb projecting from the antepenult. Legs very slender, the posterior pair longest. Length, 0.5 inch. Found on a gravelly bottom in the coralline zone.

Hab. Cape of Good Hope, at False Bay.

51. ANONYX VARIEGATUS. Large, slightly compressed; back rounded, smooth and glossy, with a sinus at the abdomen. Antennæ about equal in length, the superior ones thickened to the origin of the accessory flagellum, which is short and hair-like, equal in size with the true flagellum. Eyes large, black, reniform. First pair of legs with an elongated, tapering hand, and a minute finger; basal joints of the posterior pairs smooth. Caudal stylets elongated and slender. Coler yellowish mottled with brown, with scattered white dots. Length, 0.8 inch. On sandy bottoms in the circumlittoral zone.

Hab. Cape of Good Hope, at Simon's Bay.

The Committee on a paper by Dr. J. Aitken Meigs, entitled "Relation of Atomic Heat to Crystalline Form," reported in favor of publication in the Journal.

On leave granted, Dr. Leidy presented for publication in the Proceedings a paper entitled "Indications of twelve species of Fossil Fishes," which was referred to the following Committee: Mr. Cassin, Dr. Le Conte and Dr. Hallowell.

On leave granted, Dr. Carson presented a paper, intended for publication in the Journal, entitled "Descriptions of a new species of Carica, by José del Solar, of Lima, Peru." Referred to Dr. Carson, Dr. Bridges and Major Le Conte.

ELECTION.

The Rev. Henry S. Spackman, Mr. Stacy B. Barcroft, Dr. Richard Clements, and Dr. Henry Tiedemann, of Philadelphia, were elected *Members*.

August 28th.

Vice President BRIDGES in the Chair.

The Committee to whom was referred Dr. Leidy's paper, entitled "Indications of twelve species of Fossil Fishes," reported in favor of publication in the Proceedings.

Indications of Twelve Species of Fossil Fishes.

By JOSEPH LEIDY, M. D.

1. MYLIOBATES SERRATUS. Based upon a specimen consisting of four median dental plates, with parts of two others and the first row on each side of lateral dental plates. The triturating surface of the specimen is quite level, except that it is slightly depressed along the median line, and slopes off in a concave manner. The median dental plates are united by sutures slightly convex forward, and distinctly serrated at their outer part. The first row of lateral dental plates are nearly hexagons, and they are connected with each other and with the median plates by distinctly serrated suture.

The attaching surface of the specimens forms two planes inclining to a median, convex angle.

Breadth of median plates $10\frac{1}{2}$ lines, width antero-posteriorly $1\frac{3}{4}$ lines.

Locality. Discovered by Dr. C. H. Budd, in the Green Sand of Burlington Co., New Jersey.

Remarks. The specimen closely resembles a corresponding one characterized by Agassiz, as *Myliobates suturalis*.

2. MYLIOBATES RUGOSUS. Based upon a specimen, consisting of four median dental plates, indicating a large species of the genus, though not so large as the *Myliobates Holmesii*, Gibbes, which, however, appears rather to be an *Aetobatis*, judging from Dr. Gibbes' figures,* of the same type as the *A. eximius*. The two latter might be considered as the representatives of a new genus, in which there exists a median row of dental plates, and a single row laterally of small trilateral plates. It would be intermediate to *Aetobatis* and the true *Myliobates*, and might be called *Mesobatis*. The triturating surface of the specimen of *Myliobates*

* Journ. Acad. Nat. Sc. 2d s. i. pl. 42, fig. 1.