typical specimens, representing seventy-eight species described by Mr. U. P. James, from the Hudson River group in southern Ohio. These are the gift of Mr. James, and have been recorded. Mr. Walcott has also received, from Cornell university, for study and illustration, the type specimens used by Prof. C. F. Hartt, in Dawson's 'Acadian geology,' in his descriptions of the fossils of St. John, N.B. All the species described by Professor Hartt will therefore now be illustrated for the first time.

Prof. O. C. Marsh, in charge of vertebrate paleontology for the survey, has had parties working in Wyoming during the past season, and also in the Jurassic of Colorado, and reports to the director that they have made large additions to the collections, and very important discoveries, the results of which will be reported later.

Chemistry. — The chemical division of the survey will hereafter occupy the laboratory of the U.S. national museum, where work will be begun at once on material that has been accumulating in the hands of the chief chemist, Prof. F. W. Clarke.

Professor Clarke has been appointed honorary curator of mineralogy in the U.S. national museum. At the New Haven laboratory, Dr. Carl Barus and Dr. William Hallock are conducting thermo-electric investigations. They find that thermo-electric couples containing nickel behave anomalously at temperatures above 400° C., but that couples of platinum, with palladium or iridium, are available for the meassurement of high temperatures. With such couples, temperatures as high as 1200° may be measured as exactly as with the air-thermometer.

Fresh-water shells from the paleozoic rocks of Nevada. — The bed of calcareo-argillaceous strata containing this unusual fauna is situated near the base of the great lower belt of carboniferous limestone of the Eureka mining district, Nevada. The argillaceous layers pass into calcareous strata above, that contain a few plates of crinoidal columns, and fragments of brachiopods, and besides these a fauna of forty or more species that is purely marine, and closely related to that of the lower carboniferous fauna of the Mississippi valiey.

Although there is now a large collection of material from the band containing the fresh-water shells that was collected subsequent to the geologic field-work, during which the specimens now to be mentioned were collected, it will not be studied until after the publication of the report on the Eureka district. This brief notice is to call attention to the occurrence of fresh-water shells in the paleozoic rocks, and also to state that more is to be presented when the paleontologic collections shall have been thoroughly worked over and studied.

The first species discovered was a Physa, —a form of the genus so characteristic that there is no need of making any other generic reference; judging, of course, from the shell, and not presupposing that any variation existed in the animal inhabiting it. For this species I have proposed the name Physa prisca (fig. 2). The second is a species so Ampullaria-like that a reference is made to that genus (fig. 3). The oper-

culum is shelly, calcareous, concentric (fig. 3a). If not generically identical with Ampullaria, it certainly belongs to the group in a closely allied genus. The name Ampullaria? Powelli is proposed for it. The third species is a pulmonate shell that appears to be

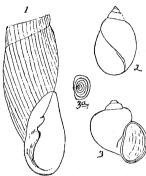


Fig. 1.—Zaptychius carbonaria × 5. Fig. 2.—Physa prisca × 2. Fig. 3.—Ampullaria? Powelli × 2. Fig. 3a.—Operculum of A.? Powelli.

closely related to Auricula, and for which the name Zaptychius carbonaria (nov. gen. et sp.) is proposed.

A small lamellibranchiate shell that may be a Nucula, Corbicula, or Cyrena, probably one of the two latter, is associated with the above, and also fragments of twigs and small cones that may be referred to the Coniferae. The landshells thus far de-

scribed from the paleozoic series are all referable to the sub-order Geophila or terrestrial pulmonates, and comprise six species; viz., Pupa vetusta, P. Bigsbyi Dawson, P. vermilionensis, Dawsonella Meeki Bradley, Zonites (Conulus) priscus Carpenter, Anthracopupa ohioensis Whitfield (from the horizon of the coal-measures), and one species (Strophites grandaeva Dawson) from the erian plant-beds of St. John, N.B. To these we now add two species of the Limnophila (Physa prisca and Zaptychius carbonaria), and one species of an operculated fresh-water shell (Ampullaria? Powelli). It may be said of these species, as Principal Dawson has said of Pupa vetusta, they are remarkable not only for their great antiquity, but also because they are separated by such a vast interval of time from other known species of their race.

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The natural-history department. — Through the liberality of friends, the college has secured a permanent table, with the necessary facilities for its use, in the museum of the U.S. fish-commission at Wood's Holl. The table will be occupied every summer by the department. The college has also leased for a series of years a table at Professor Dohrn's international zoölogical station at Naples, from the use of which it is hoped that permanent benefits will inure to this department. The conditions of the gift of the late Dr. William J. Walker make provision for a scientific expedition every fourth year.

NOTES AND NEWS.

THE extensive collections of American Coleoptera made by the late Dr. J. L. LeConte, containing an immense number of original types, become the prop-



Notes and News

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