

fossils, regarding his *Hydnoceras* as a cephalopod. In the same year Vanuxem described another form, *Uphantænia*, as a plant, and this was the current interpretation for all the *Dictyospongiæ* until 1881, when Whitfield, from Lower Carbonic material, determined that they were the remains of sponges. Nearly all these fossils are found in sandstone, while the living *Euplectellas* are commonly anchored on muddy bottoms.

The present monograph begins with 'General Observations on the Sponges.' These are followed by sections on the affinities, structure of the skeleton, preservation, and occurrence, of the *Dictyospongiæ*. A detailed review of the bibliography, in which there are 42 entries, is next given, and then come a classification and the descriptions of genera and species. The family *Dictyospongiæ* is here divided into seven sub-families, all new. These are: *Dictyospongiinæ*, *Thysanodictyinæ*, *Calathospongiinæ*, *Physospongiinæ*, *Hyphantæniinæ*, *Hallodictyinæ*, and *Aglithodictyinæ*. Of new genera there are *Dictyospongia*, *Hydriodictya*, *Prismodictya*, *Gonglospongia*, *Botryodictya*, *Tylodictya*, *Helicodictya*, *Rhabdosispongia*, *Ceratodictya*, *Lebedictya*, *Thysanodictya*, *Arystidictya*, *Aclæodictya*, *Griphodictya*, *Calathospongia*, *Clepsydropongia*, *Roemerispongia*, *Hallodictya* and *Aglithodictya*. *Mastodictya* is another new genus, but is undefined. *Sphærodictya* is proposed to replace in part *Teganium* Rauff, which seems to include heterogeneous material. *Cyathophycus* is considered objectionable, because the name indicates a plant. On this ground Dawson changed it to *Cyathospongia*, a name used earlier by Hall. In this volume, the latter term is replaced by *Cyathodictya*. It is a question whether anything is gained by these changes (*Cyathophycus* to *Cyathodictya*, and *Uphantænia* to *Hyphantænia*).

*Hydnoceras* Conrad was proposed for 'an extravagant type of orthoceran cephalopod.' This, however, never came into use and is here revived 'not because it was founded on a misconception, but because it perpetuates one' (sic). On the other hand *Dictyophyton* was introduced by Hall in 1863, 'at the request of Mr. Conrad \* \* \* to replace the term *Hydnoceras*.' The genotype is *D. newberryi*, which was also accepted for *Thamnodictya* in 1884.

Under the rules of nomenclature such changes are not usually permissible, but since *Dictyophyton* 'tends to perpetuate the old and erroneous conception of the algaous nature of these fossils' the name may be allowed.

The paleontology of New York serves as the highest expression of the work on American invertebrates, not only from a scientific standpoint, but also in artistic appearance. This volume on the sponges continues the previous standard, in spite of the fact that the preservation of the extinct glass sponges does not permit of much detailed elaboration. From an artistic standpoint, the present monograph is equalled by no other, not even by the elaborate 'Système Silurien du Centre de la Bohême' of Barrande. Professor Hall long ago recognized the accurate and artistic draughtsmanship of Mr. George B. Simpson and the ability of Mr. Philip Ast in lithographic work. Few can appreciate the skill and patience of the latter in overcoming technical difficulties. For 50 years New York has nobly supported her workers in pure science, and paleontologists look to that Commonwealth and to Dr. Clarke for a continuance of the splendid series of volumes on the paleontology of the State.

CHARLES SCHUCHERT.

#### BOOKS RECEIVED.

- The International Geography*, by seventy authors. Edited by HUGH ROBERT MILL. New York, D. Appleton & Co. 1900. Pp. xx + 1088. \$3.50.
- Jenaer Glas und seine Verwendung in Wissenschaft und Technik*. H. HOVESTADT. Jena, Fischer. 1900. Pp. xii + 429. 9 Mark.
- The Criminal*. AUGUST DRÄHMS, with an introduction by CESARE LOMBROSO. New York and London. The Macmillan Company. 1900. Pp. xiv + 402. \$2.00.
- Municipal Government*. BIRD S. COLER. New York, D. Appleton & Co. 1900. Pp. ix + 200.
- Man and his Ancestor*. CHARLES MORRIS. New York and London. The Macmillan Co. Pp. vi + 238. \$1.25.

#### SCIENTIFIC JOURNALS AND ARTICLES.

THE January number (Vol. I., No. 1) of the *Transactions* of the American Mathematical Society contains the following articles: 'Conics and cubics connected with a plane cubic by

certain covariant relations,' by H. S. White; 'Formentheoretische Entwicklung der in Herrn White's Abhandlung über Curven dritter Ordnung enthaltenen Sätze,' by P. Gordan; 'Sur la définition générale des fonctions analytiques, d'après Cauchy,' by E. Goursat; 'On a class of particular solutions of the problem of four bodies,' by F. R. Moulton; 'Definition of the Abelian, the two hypoabelian, and related linear groups as quotient-groups of the groups of isomorphisms of certain elementary groups,' by L. E. Dickson; 'Note on the unilateral surface of Moebius,' by H. Maschke; 'On regular singular points of linear differential equations of the second order whose coefficients are not necessarily analytic,' by M. Bôcher; 'The elliptic sigma-functions considered as a special case of the hyper-elliptic sigma-functions,' by O. Bolza; 'On the groups which are the direct products of two subgroups,' by G. A. Miller; 'On certain crinkly curves,' by E. H. Moore; 'A new definition of the general Abelian linear group,' by L. E. Dickson.

THE February number of the *Bulletin* of the American Mathematical Society contains the following articles: Report of the annual meeting of the Society, by the Secretary; a report of the December meeting of the Chicago Section, by Professor T. F. Holgate; 'On cyclical quartic surfaces in spaces of  $n$  dimensions,' by Dr. Virgil Snyder; 'On the singular transformations of groups generated by infinitesimal transformations,' by Professor Henry Taber; 'Proof of the existence of the Galois field of order  $p^r$  for every integer  $r$  and prime number  $p$ ,' by Professor L. E. Dickson; a review of Méray's Infinitesimal analysis, by Professor E. Lovett; 'Notes'; and 'New Publications.'

THE contents of the March number of the *American Journal of Science* are as follows:

'Hot Water and Soft Glass in their Thermodynamic Relations,' by C. Barus.

'Conrad's Types of Syrian Fossils,' by C. E. Beecher.

'Electrical Thermostat,' by W. Duane and C. A. Lory.

'Toxic Action of a Series of Acids and of their Sodium Salts on Lupinous Albus,' by R. H. True.

'Explorations of the *Albatross* in the Pacific,' by A. Agassiz.

'Ægirite Granite from Miask, Ural Mountains,' by L. V. Pirsson.

'Illinois Gulch Meteorite,' by H. L. Preston.

'Silurian-Devonian boundary in North America,' by H. S. Williams.

#### SOCIETIES AND ACADEMIES.

THE ANNUAL MEETING OF THE NEW YORK ACADEMY OF SCIENCES, FEBRUARY 26, 1900.

PROFESSOR HENRY F. OSBORN, President of the Academy, opened the meeting with a brief address in which he spoke particularly of the needs of the Academy in reference to a permanent home, and a larger publication fund; of the work of the sections of the Academy, particularly of that of the Section of Anthropology and Psychology, in association with the recently organized Ethnological Society; and of the Section of Astronomy and Physics, which has lately added Chemistry to its field of operations. Professor Osborn paid brief tribute to certain of our distinguished Honorary members who have died during the year, particularly to Professor Bunsen, Dr. Geinitz, Sir William Dawson, and Sir William Flower.

The Recording Secretary reported a total of 333 resident members, and analyzed the 82 papers given before the Academy during the last year, as to their subjects, showing that the largest attention has been given to anthropology, astronomy, geology, paleontology, petrography, physics, and zoology. The Recording Secretary also reported that the annual reception and exhibition which was held in April, in the American Museum of Natural History, was, like its predecessors, extremely successful. For the first time since the reception has been held in the American Museum it was possible to have an unoccupied room, whereby there was no confusion between the Academy and Museum exhibits. The same plan will be followed during the coming year. The Academy feels that it owes a great deal to the President and Trustees of the American Museum of Natural History, for their kindness and courtesy in allowing the Annual Reception to be held in the Museum, under such favorable auspices, and at such a moderate expense to the Academy.

The Council feels that the success and increased interest evident in the meetings since