fossils, regarding his *Hydnoceras* as a cephalopod. In the same year Vanuxem described another form, *Uphantania*, as a plant, and this was the current interpretation for all the *Dictyospongidae* 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 *Euplectella* 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 *Dictyospongidae*. 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 *Dictyospongidae* is here divided into seven sub-families, all new. These are: *Dictyospongini*, *Thysanodictyini*, *Calathospongini*, *Phyospongini*, *Hyphantenii*, *Hallockdicyini*, and *Aglithodicyini*. Of new genera there are *Diictyospongia*, *Hydriodictya*, *Prismodictya*, *Gonglospongia*, *Botryodictya*, *Tylodictya*, *Heliocdictya*, *Rhabdiospongia*, *Ceratodictya*, *Lebediictya*, *Thysanodictya*, *Aristodictya*, *Acteodictya*, *Griffodictya*, *Calathospongia*, *Clepsydraspongia*, *Roemerspongia*, *Hallockdicyta* and *Aglithodicyta*. *Mastodictya* is another new genus, but is undefined. *Sphaerodictya* is proposed to replace in part *Teganium* Rauf, 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 (*Cyathodictya* to *Cyathodictya* and *Uphantenia* to *Hyphantenia*).

*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 *etc.* 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 algous 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 'Systeme Silurien du Centre de la Boheme' 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 continuation of the splendid series of volumes on the paleontology of the State.

**CHARLES SCHUCHERT.**

**BOOKS RECEIVED.**


**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