in this respect. It is very probable, however, that the tropical zone of the Indian Ocean, which has not hitherto been investigated, will prove to be richer in species than that of the Pacific, since in its south temperate zone, which at present is alone available for comparison, it has shown itself to be richer. Hence we may anticipate that an investigation of the tropical region of the Indian Ocean would yield specially rich material as regards the Hexactinellida.

"Finally I will give the principal results of an inquiry undertaken to find out the dependence of the Hexactinellida upon the nature of the sea-bottom. For this purpose the Stations were classed according to the nature of the deposit found at each.

"When the different groups of Stations were examined it appeared that the Diatom ooze was specially favourable to the Hexactinellida, and also that Radiolarian ooze and blue mud were more or less adapted to their existence; while they appeared to be entirely wanting upon bottoms of sand and gravel, which is perhaps owing to the fact that deposits of this kind usually occur at depths of less than 100 fathoms, which are too shallow for these animals.

"It is also worthy of remark that several Hexactinellida, which came from great depths, were filled with Diatoms and Radiolarians, although the bottom at these Stations was not a Diatom or Radiolarian ooze."

The following is a list of the genera contained in the above mentioned families and subfamilies.

Type **CŒLENTERATA.**

Subtype **Spongiæ.**

Class SILICISPONGIÆ. Subclass *Hexactinellida.*

Order I. LYSSACINA, Zittel.

Family I. EUPLECTELLIDÆ.

Subfamily 1. Euplectellinæ.
(1) *Euplectella*, Owen.
(2) *Regadrella*, Osc. Schmidt.

Subfamily 2. Holascinæ.
(1) *Holascus*, n.
(2) *Malacosaccus*, n.

Subfamily 3. Tægerinæ.
(1) *Tæyeria*, n.
(2) *Walteria*, n.
(3) *Habrodictyum*, Wyv. Thoms.
(4) *Eudictyum*, Marshall.
(5) *Dictyocalyx*, n.
(6) *Rhabdodictyum*, Osc. Schmidt.
(7) *Rhabdopectella*, Osc. Schmidt.
(8) *Hertwigia*, Osc. Schmidt.

Family II. ASCONEMATIDÆ.

Subfamily 1. Asconematinæ.
(1) *Asconema*, Sav. Kent.
(2) *Aulascus*, n.

Subfamily 2. Sympagellinæ.
(1) *Sympagella*, Osc. Schmidt.

Subfamily 3. Caulophacinæ.
(1) *Caulophacus*, n.
(2) *Trachycaulus*, n.

Family III. HYALONEMATIDÆ.

Subfamily 1. Hyalonematinæ.
(1) *Hyalonema*, Gray.
(2) *Dictyosphæra*, n.
(3) *Pheronema*, Leidy.
(4) *Poliopogon*, Wyv. Thoms.

Subfamily 2. Semperellinæ.
(1) *Semperella*, Gray.