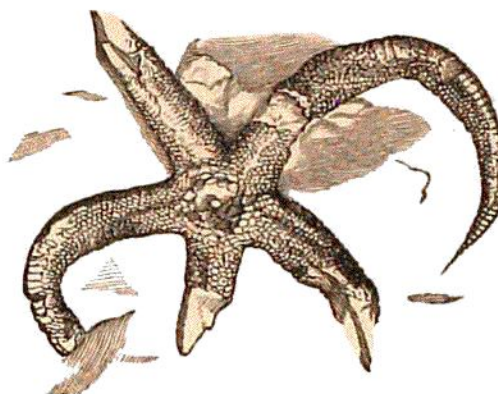ments of branches of the slender polypary. The diameter of the form Fig. 604, when living, and having its arms of full length, may have been 15 to 20 inches. Figs. 607, 608 represent a species of the two-edged forms (Diprionidæ), that is, those having cells along both margins.

Besides Graptolites, there were massive Hydrozoan corals, of the *Stromatopora* type, related, it is supposed, to the modern Millepora.

Under *Echinoderms*, there were Crinoids and Cystoids, and also the earliest known of American Starfishes (Fig. 610). Among the Brachiopods, a common species is the *Orthis* (*Billingsella*) *grandæva* (Fig. 611).

Gastropods, of flat or short spiral forms, like Figs. 612–614, of species of the genus *Ophileta* and *Maclurea*, were common, and some were of large size. The genus *Platyceras* continued on from the Cambrian. There were also spiral forms of the genera *Pleu-*
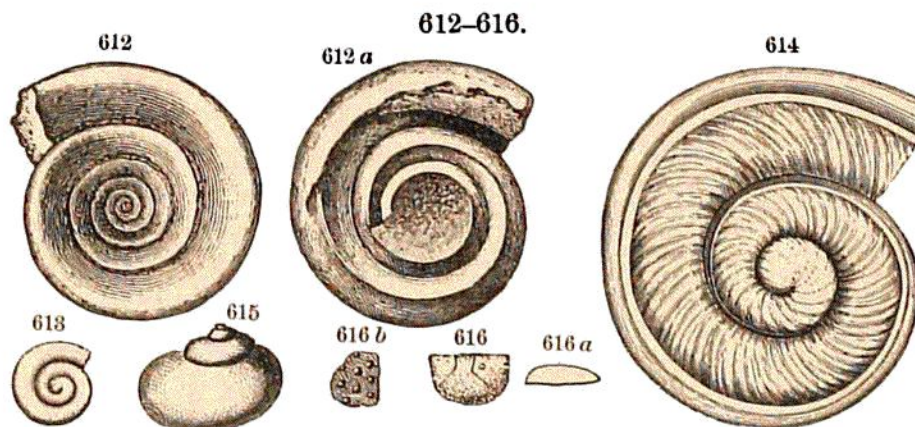
610.

Stenaster Huxleyi (× 4). Billings.

611.

Orthis (Billingsella) grandæva.

rotomaria, Murchisonia, Holopea (Fig. 615), and others of the Bellerophon family. The shells of *Cephalopods* in the Calciferous beds occur of many and varied forms, and some are over a foot in length. Those of the genus *Orthoceras* are straight or slightly curved. In *O. primigenium* of Vanuxem, first described from the Mohawk Valley, N.Y., the septa, as shown in Fig. 618, are closely crowded. A curved species is represented in Fig. 620, *Cyrtoceras* (?) *Vassarinum* from Dutchess County, N.Y.

612–616.

GASTROPODS. — Fig. 612, 612 *a*, Ophileta complanata (1), opposite sides; 613, O. levata (1); 614, O. uniangulata (1); 615, Holopea dilucula. — OSTRACOID CRUSTACEAN: 616, Leperditia Anna enlarged, side view; 616 *a*, same, upper view; 616 *b*, several of the shells, natural size. Figs. 612, 612 *a*, Whitfield; 613, 614, 615, Hall; 616, 616 *a*, *b*, T. R. Jones.

There were also coiled species, both the open-coiled of the genus *Lituites*, and others that were close-coiled, Nautilus-like. *Lituites* (?) *imperator* B., Philipsburg, Canada, had a diameter of 10½ inches.