

the structure of an animal, and the epoch of its first appearance on the earth's surface, may be traced.

472. As a general result of the inquiries hitherto made, it may be stated that the palæozoic animals belong, for the most part, to the lower divisions of the different classes. Thus, of the class of Echinoderms, we find scarcely any but Crinoids, which are the least perfect of the class. We have represented, in the above sketches, several of the most curious forms,* as well as of the Polyps, of which there are some quite peculiar types from the Trenton limestone, and from the Black River limestone.

473. Of the Mollusks, the bivalves or Acephala are numerous, but, for the most part, they belong to the Brachiopoda, that is to say, to the lowest division of the class, including mollusks with unequal valves, having peculiar appendages in the interior. The *Leptæna alternata*, (b,) which is found very abundantly in the Trenton limestone, is one of these shells. The only fossils yet found in the Potsdam sandstone, the oldest of all fossiliferous deposits, belong, also, to this family, (*Lingula prima*, a.) Besides this, there are also found some bivalves of a less uncommon shape, (*Avicula decussata*, e.)

474. The Gasteropods are less abundant; some of them are of a peculiar shape and structure, (*Bucania expansa*, f; *Euomphalus hemisphericus*, c.) Those more similar to our common marine snails have all an entire aperture; those with a canal being of a more recent epoch.

475. Of the Cephalopods we find some genera not less curious, part of which disappear in the succeeding epochs;

* (i) *Cyathocrinus ornatissimus*, Hall; (j) *Melocrinus Amphora*, Goldf.; (k) *Cariocrinus ornatus*, Say; (l) *Columnaria alveolata*; (m) *Cyathophyllum quadrigeminum*, Goldf.; (n, o) *Caninia flexuosa*; (p) *Chaetetes lycoperdon*.