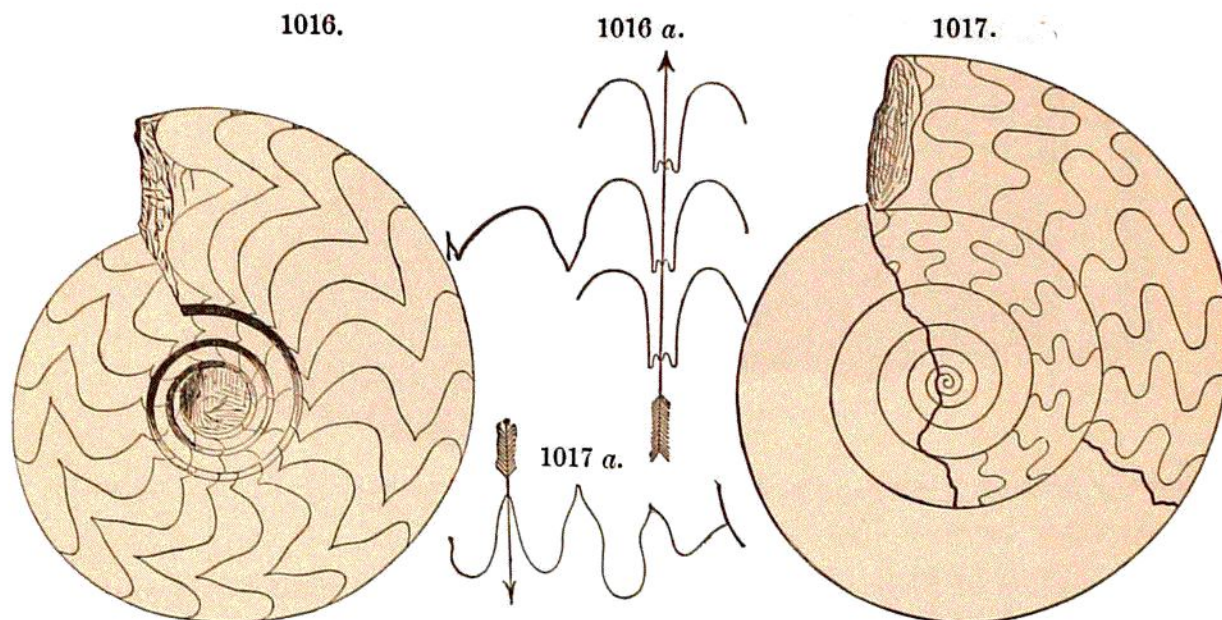


5. **Crustaceans.** — *Trilobites* were of twenty or more species, all small prim-looking forms, of the Devonian genera *Proetus*, *Phæthonides*, and the related, but low-featured, Carboniferous genera *Griffithides* and *Phillipsia*. Half of the twenty species are of the genus *Phillipsia*.

The other Crustaceans known from the beds are *Phyllopods* and *Ostracoids*; and the shells of a *Beyrichia* make the chief part of the material of a layer four feet thick, north of Pella, Iowa.



CEPHALOPODS. — Fig. 1016, *Goniatites* Oweni; 1016 a, id., outline, showing direction of septa; 1017, *G. (Prolecanites)* Lyonii; 1017 a, id., direction of septa. Hall.

6. **Insects.** — Remains of *Insects*, and other terrestrial species, are necessarily rare in marine deposits, and no species have yet been reported.

7. **Vertebrates.** — *Vertebrates* were represented by Ganoids and Selachians, as in the Devonian, but with apparently no *Placoderms*. There were also the first yet known of *Amphibians*.

The remains of Selachians are teeth and fin-spines. The teeth are either of the pavement kind, allied to those of the living Cestracion (or Port Jackson Shark), and to *Myliobatis* (or Eagle Ray), or of pointed and triangular form, more or less resembling some of the modern type referred to the Hybodont and Petalodont families.

Of the pavement-mouthed forms, the *Cochliodonts*, which have a large massive plate on either ramus of the jaw, were numerous in the Subcarboniferous. One of these plates is represented, natural size, in Fig. 1018, from Worthen's Illinois Report; and the form for the whole jaw in a foreign species is shown one third the natural size in Fig. 1019. Over 50 species are described from the Illinois limestone. The *Psammodonts*, having the inner surface of the jaw covered by flat rectangular plates, nearly as in *Myliobatis*, have over a dozen Subcarboniferous species of the genera *Psammodus* and *Copodus*. A Petalodont tooth, *Petalodus curtus*, has been reported from the