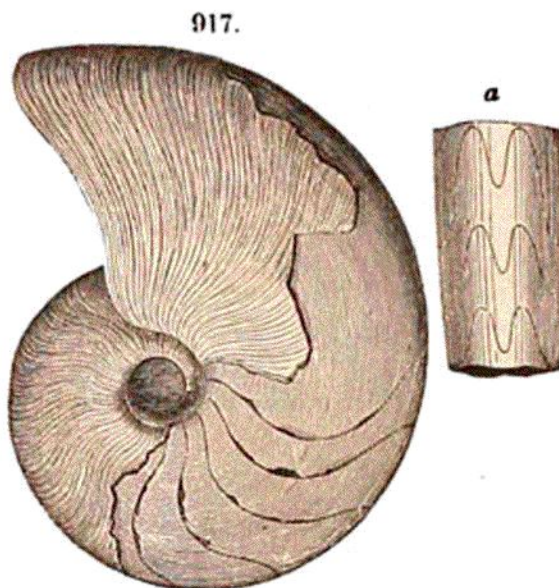


*phalus*, *Bellerophon* (many species), *Murchisonia* (but one), *Loxonema* (many), with also the Devonian and Carboniferous genus *Macrocheilus*. Pteropods were still represented by *Tentaculites*, *Hyolithes*, and *Conularia*, and also by species of *Styliolina* (Fig. 916), *Coleolus*, etc. *Styliolina* is like *Tentaculites*, but has a smooth shell.

Under Cephalopods, the old genus, *Orthoceras*, had 29 described species in 1880 (to 30 in the Corniferous); with these were species of *Gomphoceras*, *Cyrtoceras*, and *Gyroceras*. The Nautiloid, *Nephriticeras maximum* occurs over a foot in diameter. The genus *Goniatites*, first known from the Corniferous group, has a number of species; *G. Vanuxemi* (Fig. 917) is one of the earliest, being from the Marcellus shale; it has only one flexure in the septa, as shown in Fig. 917 *a*, a mark of its antiquity; and it has been made, on this account, by Hyatt, the type of the new genus *Agoniatites*. The largest specimens are a foot or more in diameter. A straight form of *Goniatites*, *Bactrites clavus* H., has been found in the New York Marcellus shale.



CEPHALOPOD. — Figs. 917, *a*, *Goniatites Vanuxemi*. Meek.

6. Crustaceans. — The most characteristic species of Trilobite, *Phacops rana* of Green (= *P. bufo*), is represented in Fig. 918; its maximum length is eight inches. The genus *Dalmanites*, which had nearly 25 Corniferous species, has five described from the Hamilton; the pygidium of *D. Boothi* Green is represented on page 587, and that of the variety *calliteles*, in Fig. 919. Other genera are *Homalonotus* (which has a species 15 inches long), *Proetus*, and *Acidaspis*. Fig. 880 (page 587) is the pygidium of *A. Romingeri*. There is also a species of the European genus *Bronteus*, *B. Tullius* H., found in the Tully limestone. Out of all the genera of Trilobites existing during the Hamilton and earlier geological time, only *Phacops* and *Cyphaspis* have species reported from the later Devonian. Others no doubt existed; but still the decline of what was once the leading life of the seas is strongly manifested. The dash for ornamentation in the early and middle Devonian was a mark of luxuriant, rather than natural progress, and the same appears in the size of many of the species.



Fig. 918, *Phacops rana*; 919, pygidium of *Dalmanites calliteles* ( $\times \frac{1}{2}$ ). Meek.

Phyllopod, of the Ceratiocarid type, are of several kinds. Fig. 920 represents an *Echinocaris*, one specimen of which, figured by Hall, from