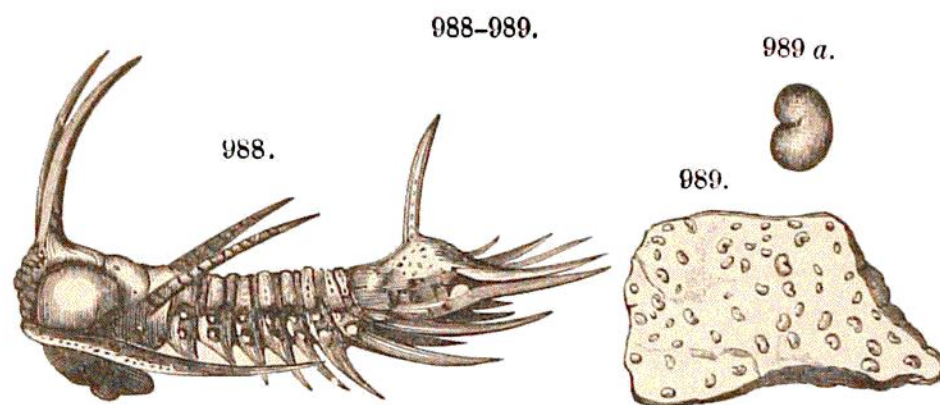


In the Eifel, the three divisions, the *Rhénan*, *Eifelian* and *Famennian* are well developed. The *Rhénan* contains *Dalmanites*, *Phacops latifrons*, *Spirifer cultrijugatus*, etc. The *Eifelian* consists below of the *Calceola* beds, with *C. sandalina* and *Spirifer cultrijugatus*, and above, of the *Stringocephalus* beds.

The *Famennian*, or Upper Devonian, consists of (1, or below) the *Cuboides* shale with dolomitic beds, containing *Rhynchonella cuboides*, *Spirifer glaber*, *S. Verneuli*, *S. Uriei*, *Atrypa reticularis*, *Athyris concentrica*, *Productus subaculeatus*, *Camarophoria formosa*; (2) Goniatite bed, with *Goniatites retrorsus* (Fig. 987), *G. primordialis*, *Orthoceras subflexuosum*, *Bactrites gracilis*, *Pleurotomaria turbinea*, *Cardiola retrostriata*, *Cypridina serrato-striata*; (3) the *Cypridina* shale, with *C. serrato-striata* (Fig. 989) and *Posidonomya venusta*.

Similar subdivisions occur in Westphalia and Nassau, the Fichtelgebirge, and other areas of Germany. In the Thuringian Forest and the Fichtelgebirge, the Upper Devonian contains in the *Clymenia* and *Orthoceratite* limestones, *Clymenia levigata*, *C. undulata*,



CRUSTACEANS. — Fig. 988, *Arges armatus* of the Eifel; 989, slate, from Wellburg, containing *Cypridina serrato-striata*, natural size; 989 a, same enlarged. Vogt.

*Goniatites retrorsus*, *G. intumescens*, *Orthoceras interruptum*, *Gomphoceras*, *Cyrtoceras*, *Athyris concentrica*, *Rhynchonella cuboides*, *Bronteus grandis*, and other species, besides remains of *Calamites*, *Lepidodendron*, *Stigmaria*, *Aporocydon*.

In Russia (the Continental Interior of Europe) the Devonian beds cover a large area, and are nearly horizontal. The western areas include only Middle and Upper Devonian. Below are limestone and red marls; and above, limestone and shales with some sandstones, having partly the character of the Old Red sandstone of Scotland, and like that containing, says Murchison, remains of Fishes as almost the only fossils. Pander has described species of *Coccosteus*, *Osteolepis*, *Dipterus*, and *Diplopterus* from the Middle, and *Holoptychius nobilissimus*, *Pterichthys major*, and *Asterolepis* from the Upper. The Lower, Middle, and Upper Devonian occur in the Urals, through nearly the whole length of the range.

In South America, Devonian beds occur over the Highlands of eastern Bolivia, — Lower and Middle Devonian (D'Orbigny, M. D. Forbes, Steinmann); in the region of Lake Titicaca, Lower Devonian (Agassiz and Garman); in Brazil, in the province of Para, north and south of the Amazon, 200 to 400 miles from the coast, Lower, Middle, and Upper Devonian (O. A. Derby, and others); in the Falkland Islands (Darwin). In the vicinity of the Amazon, on its north rise, Hamilton beds include species of the genera *Vitulina*, *Tropidoleptus*, *Retzia*, and others, described by Rathbun, and one variety of *Discina Lodensis* Hall. Ulrich reports, from eastern Bolivia, species of the genera *Leptocalia*, *Vitulina*, and *Tropidoleptus*, besides others, and states that the first of these three genera occurs also in the Devonian of the Falkland Islands and of South Africa, and that the second is also South African. (For remarks on the distribution of these and other genera, see