

tuffs and volcanic conglomerates, indicating vigorous volcanic action. An intercalated zone of shales in the lower conglomeratic and volcanic part of the series in the Val Trompia has yielded *Walchia piniformis*, *W. filiciformis*, *Schizopteris fasciculata*, *Sphenopteris tridactylites*, etc., and serves to mark the Permian age of the rocks. Eastward, at Funfkirchen, in Hungary, in a corresponding position below the Verrucano conglomerate, a group of younger Permian plants has been found, including species of *Baiera*, *Ullmannia*, *Voltzia*, *Schizolepis*, and *Carpolithes*, nearly half of which occur also in the German Kupferschiefer. Above the conglomerate or the porphyry comes a massive red sandstone called the "Groden Sandstone," containing carbonized plant-remains. But the most distinctive and interesting feature in the Alpine development of the Permian system is found in the upper portion of the series in the southern region of Tyrol and Carinthia. The red Groden sandstone is there succeeded by beds of gypsum, rauchwacke, and dolomite, above which comes a bituminous limestone known, from the abundance of species of *Bellerophon*, as the "Bellerophon Limestone." This calcareous member is highly fossiliferous. It contains an abundant marine fauna, which includes ten species of *Bellerophon*, and species of *Nautilus*, *Natica*, *Pecten*, *Aviculopecten*, *Avicula*, *Bakevella*, *Schizodus*, *Spirifer* (7 species), *Spirigera*, *Streptorhynchus*, *Orthis*, *Strophomena*, *Leptaena*, *Productus*, and *Fusulina*. Nearly all these are peculiar species, but the *Schizodus*, *Bakevella*, and *Natica* connect the assemblage with that of the Zechstein.

It is interesting to trace in this Bellerophon Limestone an indication of the distribution of the more open sea of Permian time in the European area. While the Zechstein was in course of deposition in isolated Caspian-like basins across the centre of the Continent, calcareous sediments were accumulated on the floor of a wider sea which, lying to the south, stretched over the site of the present Mediterranean, eastward across Russia and the heart of Asia. A portion of this sea-floor has been detected in Sicily, where near Palermo M. Gemmellaro has described the abundant fauna found in its limestones. Foraminifera (*Fusulina*) abound in these rocks, but their most remarkable feature is the number and variety of their cephalopods, which, besides Palæozoic types (*Goniatites*, *Orthoceratites*), comprise many new forms (17 genera and 54 species) akin to the tribe of Mesozoic *Ammonites* (*Adrianites*, *Agathiceras*, *Cyclolobus*, *Daraelites*,