

ceras and *Cyrtoceras*; among Trilobites, the genera *Olenus*, *Agnostus*, *Asaphus*, *Ogygia*, *Conocoryphe*, *Cheirurus*; and the Caridoid Entomostracans, *Ceratiocaris* and *Lingulocaris*.

*Oldhamia*, from the Bray Head region, Ireland (Figs. 589, 590), has been supposed to be a seaweed, and also Hydrozoan. It is stated by Dr. Kinahan to be only inorganic markings.

In Scandinavia, where the *Olenellus* zone was first shown to be the true Lower Cambrian by Dr. A. G. Nathorst, the Lower beds occur at Andrarum in Scania beneath *Paradoxides* beds. They are also found near Lake Mösen in Norway, and in Esthonia in Russia. They have afforded, besides *Olenellus Kjerulfi*, species of *Lingulella*, *Obolus*, *Discina* (?), *Hyolithes*, *Metoptoma*, *Scenella*, and also impressions which, as stated above, page 479, are referred by Nathorst to Medusæ and called *Medusites*. The Middle Cambrian beds near Kongsberg, Norway, contain *Paradoxides Tessini*, *P. Forchhammeri*, *Agnostus Kjerulfi*, with *Protospongia*; and in Sweden, the same species of *Olenellus* with *Paradoxides* beds at a higher level, and above these *Olenus* schists and *Dictyonema* shales.

The Cambrian beds of Norway are very thin, the beds near Kongsberg being 60 feet thick; in Sweden, the thickness is 2000 feet. The *Eophyton sandstone* lies beneath the *Olenellus* beds in Norway and contains the ambiguous *Eophyton* with *Hyolithes levigatus*, and worm and other doubtful markings. Nathorst supposes the *Eophyton* to be the casts of trails of *Medusites*.

In Bohemia, the region of Barrande's discoveries, — an area about Prague having Archæan rocks around it except on the north and northeast, — the "Primordial zone," his stage C, 300 to 400 yards thick, afforded him the genera of Trilobites, *Paradoxides* (12 species), *Agnostus* (5, among them *A. Rex*, Fig. 592), *Conocoryphe* (4), *Ellipsocephalus* (2), *Hydrocephalus* (2), *Arionellus* (1), *Sao* (*Sao hirsuta*, Fig. 594); also five species of *Cystoids*, with species of *Orthis*, *Orbicula*, and five of *Hyolithes*. From the underlying beds of stage B (which rest on the Archæan, stage A), consisting of slates, quartzites, schists, etc., Barrande reported traces of Annelids, *Arenicolites*. Barrande represents the rocks in a section across from northeast to southwest as lying in a simple synclinal, with an elevation of conformable Upper Silurian strata at the center of the synclinal.

On Sardinia occur Cambrian beds, from which Meneghini described, in 1888, two species of *Paradoxides*, several of *Olenus*, and *Conocephalites*, with others of *Anomocare* and *Asaphus*. No species of the *Olenellus* horizon were reported. J. G. Bornemann described from Sardinia, in 1892, Trilobites of the new genera *Olenopsis*, *Metadoxides*, and *Giordanella*, with Gastropods of the genera *Capulus*, *Bellerophon*, and probably *Carinaropsis*.

In the province of Sian-tung, China, Cambrian fossils were gathered by von Richthofen, and identified by Dames as belonging to the genus *Doropyge*, and referred to the age of the Quebec group. Walcott refers them to the genus *Olenoides*, and to the age of the Middle Cambrian.