Foerste reports the absence of several Clinton fossils from the Clinton beds along the borders of the Cincinnati geanticline in Ohio and Indiana that occur in New York (*B. S. N. H.*, 1889).

According to Salter, a number of species of the Upper Silurian, and probably of this part of it, have been observed in Arctic rocks on the shores of Wellington and Barrow Straits and on King William's Island, lat. 72° to 76°; *Halysites catenulatus*, *Orthis elegantula*, *Favosites Gothlandicus*, *Leperditia Baltica* Hisinger, species of *Calophyllum*, *Heliolites*, *Cystiphyllum*, *Cyathophyllum*, *Syringopora*, with *Pentamerus conchidium* Dalm., *Atrypa reticularis*, etc.; and, at the southern extremity of Hudson Bay, *Pentamerus oblongus*, *Atrypa reticularis*, etc. *Trochoceras boreale* Foord is from Wellington Channel. Between 79° and 82° 5′, the expedition of Captain Nares obtained, according to Etheridge, Corals of the genera *Halysites*, *Favosites*, *Heliolites*, *Favistella*, *Zaphrentis*, *Amplexus*, *Cyathophyllum*, and *Arachnophyllum*, and Trilobites of the genera *Bronteus*, *Calymene*, *Encrinurus*, and *Proetus*, with Brachiopods of *Pentamerus*, *Rhynchonella*, *Chonetes*, *Atrypa*, *Strophomena*. About Lake Winnipeg, also, Upper Silurian fossils have been found. See *Am. Jour. Sc.*, II., xxi. 313, xxvi. 119; III., xvi., 1878.

The beds of northern Maine, about Square Lake, described by C. H. Hitchcock, have afforded both Niagara and Lower Helderberg fossils, and many of them are made new species by Billings.

The Niagara beds of the vicinity of Cobscook and Penobscot bays, Maine, contain, besides Niagara fossils, some of the Clinton group; the latter, in Penobscot Bay, are mostly confined to the lower half, but many Niagara species occur with them. (Shaler, 1886; Dodge and Beecher, 1892.)

2. The Onondaga Period.

ROCKS — KINDS AND DISTRIBUTION.

The Onondaga period embraces two somewhat unlike formations; one, the *Salina* beds of shales and marlytes, or the *Salt group*, the source of the brines of central New York and of rock salt in the western half of the state, as well as in Ontario and Ohio; the other, the *Water-lime group*, in general an impure limestone, along with the overlying *Tentaculite limestone*. Each was of shallow water origin, and partly marsh-made; but the former was produced under conditions suited for the deposition and storing of salt from the sea water. This classification was first proposed by D. Sharpe, in 1847.

The following sections (Figs. 790, 791, from Hall), taken on a north-and-south line south of Lake Ontario, show the relations of the Onondaga beds (6, *a*, *b*) to those above and below, — they being underlaid in one section (Fig. 790) by the Niagara beds (5 *c*), Clinton (5 *b*), and Medina (5 *a*), and overlaid in the other (Fig. 791) by rocks of the Upper Helderberg (9), Hamilton (10 *a*, 10 *b*, 10 *c*) and Portage group (11), the Lower Helderberg being there absent.

The rocks spread eastward to the Hudson River valley, the Water-lime occurring as a thin stratum even east of the river in the base of Becrafts Mountain, near Hudson, N.Y., and also in Mount Bob, a few miles farther north, in each case resting on the upturned Hudson formation. They increase in thickness westward. They extend beyond New York over much of Ohio, cross Ontario to Lake Huron and northwestward to Mackinac in