

UPPER SILURIC

Salina beds

Camillus shale

The lowest formation exposed within the limits of the quadrangle is the Camillus shale, which is the surface rock over an area of 35 square miles north of Buffalo and Williamsville.

It is entirely covered by drift on the American side of Niagara river excepting a small outcrop at the extreme south end of Grand island. On the Canadian side the upper beds are exposed in the low cliffs along the river from a point opposite Strawberry island almost to the International bridge.

The rock at these exposures is mostly soft, light gray or olive gypseous shale; a few thin layers are harder and more blocky in structure.

About 75 feet of Camillus shale come to the rock surface on this quadrangle but these do not represent the entire formation. Its precise thickness here is not known, but well cores show that beds of gypsum, thinner and less pure toward the bottom, occur at intervals through 150 feet or more of strata.

The Vernon red shales that underlie the Camillus shale in the central part of the State have not been recognized in the deep borings about Buffalo, and if the Camillus formation is to here include all of the strata between the Guelph dolomite of the Niagaran group beneath, and the Bertie waterlime above, its average thickness as shown in 10 wells is 333 feet.

Gypsum and plaster have been mined in the Camillus shale in Genesee, Monroe, Ontario, Seneca, Cayuga and Onondaga counties in very large quantities but thus far no fossils have been found in these beds in the western part of the State. The little brackish water crustacean *Leperditia alta* occurs below the upper gypsum bed in Onondaga county.

Bertie waterlime

The passage from the Camillus shale to the succeeding formation is a gradual one, the gypsum slowly diminishing in quantity and the rock becoming much harder and, by the addition of alumina and carbonate of magnesia, highly dolomitic. The Bertie waterlime is usually in layers from a few inches to 2 to 3 feet thick, separated by thin seams of carbonaceous matter. Though very dark when fresh the rock weathers to a light brown or buff.

The proportion of calcareous matter varies considerably in the different layers, the composition of many of them being such as to make true hydraulic limestone or "cement rock." A bed of this