

sandstone; but it is thought probable, from some of the mineral characters, no fossils having been seen, that they belonged to the epoch of the Medina sandstone, and that the subjacent Shawangunk grit is equivalent to the gray sandstone (=Oswego) instead of the Oneida conglomerate."

While it is known that Mather¹ recognized and designated a formation in eastern New York as "coralline limestone" which recently has been shown to be identical with the Cobleskill limestone, it is evident from the above citations that Mather could not have regarded it as of Niagaran age, or he would not even have suggested the possibility of the underlying red shales being of Salina age. For many years following the publication of Mather's report the section under consideration was not much studied. The discovery, however, by Dr Barrett, of Cobleskill fossils near Port Jervis in strata which lie above the red shales, and the studies of Lindsley of the same formation at Rondout, left little doubt as to the continuity of these rock masses in the intervening section, and since the Cobleskill at that time was correlated with and generally accepted as the equivalent of the Niagaran formation as developed in western New York, it served for the time being as apparently conclusive evidence that the underlying shales could scarcely be correlated other than with the Clinton and the Medina, or at least it was not thought they could possibly represent the Salina. As we now know that the Cobleskill limestone is of an age later than the Salina, the age of the red shales together with the so called Clinton quartzite lying above the Shawangunk grit again comes into question, since both the Salina and the Medina are below the Cobleskill. As no fossils have been found in the red shales, a feature which contrasts them with the Medina of central New York, it is evident that in any attempt to correlate these red shales, evidence must be had from other sources.

It was early shown by Vanuxem² and Hall³ that in central New York the passage from the Oneida to the Medina was a

¹ Geol. N. Y. 1st Dist. 1843. p. 331.

² Geol. N. Y. 3d Dist. 1842. p. 71.

³ Pal. N. Y. 1852. 2:15, 16.