

ART. XXX.—*On the Western Limits of the Taconic System;*
by S. W. FORD.

SINCE the publication of my paper entitled "Notes on the Primordial Rocks in the vicinity of Troy, N. Y. (this Journal for July, 1871), Professor Dana has repeatedly urged that the Troy Primordial beds, together with those of Bald Mountain, Washington County, and their equivalents farther northward in Vermont and Canada, should not, in strictness, be referred to the Taconic, inasmuch as they were added by Dr. Emmons to his Taconic System several years subsequent to its original definition, and upon insufficient grounds. In this view I have always acquiesced, partly because of its essential justness, and partly because of the endless disputes and controversies which its adoption seemed to me calculated to prevent. In my paper referred to, the Troy beds are spoken of by me as part of the Taconic System, not, however, as a believer in the system, but because they appeared to me to have a better right to this title than to any other that had previously been applied to them. The Taconic System, as a system distinct from the Silurian, has appeared to me from my earliest knowledge of it, of questionable standing; but the chances in favor of its general acceptance seemed to me quite as good so long as it rested within the limits originally assigned to it. In extending his system westward, in 1846, from Petersburg, N. Y., to the Hudson River, Dr. Emmons certainly had the remarkable uniformity of dip and conformability of the rocks over the region studied in his favor; but when he found himself under the necessity of assuming an inversion of the whole system in order to get the black slates of Bald Mountain (in which Trilobites had then recently been discovered) at its summit, grave doubts were justly raised respecting the correctness of his interpretations.

I have no doubt that, to many, this assumption in itself (the typical region considered by Emmons being not far from 45 miles wide), has all along been regarded as practically fatal to the Taconic cause. We now know, thanks to the earnest and enlightened researches of Wing, Dana, Billings, Dale, and others, that the true Taconic rocks represent the Champlain Division at least from the Calciferous to the Hudson River group inclusive, and possibly the division entire; but with regard to the North-and-South belt added to them in 1846 (or that lying between Petersburg and the Hudson), while a considerable part of it has been shown to be Primordial, the age of by far its greater portion is still in doubt. How far the Primordial beds which come up at Troy and Bald Mountain are continued eastward as surface rocks, it is impossible at present to say. To

my mind, one of Dr. Emmons's greatest services to the cause of science was his recognition of the great stratigraphical break running east of the Hudson River by which the Primordial rocks were made to stand above those at the top of the Lower Silurian, and his advocacy of it in spite of the adverse paleontological determinations of Professor Hall, who referred the whole at first to the Hudson River group, and subsequently, at least in part, to the Quebec. Dr. Emmons's pronounced antagonism to the Hudson River doctrine grew, in this case at any rate, out of his appreciation of fundamental differences; and for this signally good work, notwithstanding the failure of his favorite system, he should ever receive, it seems to me, the grateful recognition of all workers in the department.

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