

of mica schist in Connecticut becomes calciferous in Vermont, and just over the Vermont and Canada line, *Favosites Gothlandica*, and other silurian fossils, are found in it. 2. Crystalline schists both overlie and are interstratified with fossiliferous deposits. For example, there is a belt of Upper Helderberg limestone underlying the talcose schist of western New England, in the northern part of Vermont—and in such a way as precludes the idea of inversion. It was this phenomenon of the interstratification of these two kinds of rock that first unsettled the old ideas of geologists in regard to azoic rocks.

The Professors Rogers suppose that the eastern part of the azoic rocks of the Appalachian range are hypozoic, and that a part of the western border is Cambrian.

Taconic Rocks.—Along the western border of the azoic ranges just described, there is a succession of thick deposits, partially metamorphosed, which Professor Emmons has grouped under the name of *Taconic System*. They consist of quartz rock, limestones, dolomites, marbles, imperfect talcose and micaceous schists, and clay slate. They may be found along nearly all the Appalachian range, and, according to Professor Emmons, also upon its eastern side in Maine, Rhode Island, and North Carolina.

Professor H. D. Rogers has described these rocks in Pennsylvania as Lower Silurian. The quartz rock he calls Potsdam or Primal Sandstone, the limestones the Auroral or Lower Silurian Limestones of New York; the schists and slates as the Hudson River Group, or Matinal Shales.

The authors of this book have been examining these rocks as they are developed in Vermont, and take the following positions, the details of which are not yet published: 1. Some of the slates in a few localities, pronounced Taconic by Professor Emmons, belong to the Hudson River group of New York. 2. The remainder, including the typical localities, are of Upper Silurian and Devonian age. 3. The slates and schists are at least as high as Upper Silurian, overlying the Oneida conglomerate. As they so much resemble the Hudson River group, and are the rocks from which the name is derived for the Lower Silurian member, the name *Upper Hudson River Group* may be assigned to them. 4. Some of the limestones contain fossils, apparently identical with certain Devonian forms. Hence they are regarded as Devonian; and as the place in that series is yet uncertain, the name *Dorset Limestone* may be applied to the group, from Dorset Mountain in Vermont, where the whole series is beautifully developed. 5. The quartz rock, being associated with the Dorset limestone, must be newer than Lower Silurian.

SILURIAN SYSTEM.

During the hypozoic period, and at its close, the strata were disturbed by forces of elevation, so that the more elevated parts assumed a V form, as in the northern part of the continent, and there were several islands in the southern part. The Cambrian period seems to have been one of general inactivity; but strata were deposited unconformably upon the older rocks about Lake Huron.

Lower Silurian.—The Huronian rocks were also elevated before the deposition of the Silurian, as is seen at Lake Huron. The first positive evidences of the introduction of life in North America are found in the Potsdam sandstone. In New York the Lower Silurian is divided into the Potsdam sandstone and calciferous sandrock, which form a separate group by their structural and paleontological affinities, which may be called the *Potsdam Group*; the Chazy limestone, Birdseye limestone, Black River limestone, and Trenton limestone, or the *Trenton Group*; the Utica slate and Hudson River group, both of which may be termed the *Hudson Group*.