

THE PORT BYRON LIMESTONE AND ITS FAUNA

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It has long been recognized that a part of the Racine limestone, as developed at Racine, Wisconsin, and in the vicinity of Chicago, Illinois, contains some fossils that are characteristic of the Guelph limestone at Guelph, Ontario, and in New York. However, the coral-reef development of the typical Racine continued without apparent interruption to the end of Racine deposition, and there seems to be no place to divide Racine strata that would separate the part that contains the Guelph species from the part in which these species are absent.

In the northwest part of Illinois there is exposed in a quarry near the village of Port Byron, a Niagaran horizon belonging to a level higher than that of the Racine limestone in the vicinity of Racine or Chicago. During Port Byron time the coral reef conditions appear to have prevailed without a break. Pockets in the reef rock, and on the flanks of the reefs, contain a rich fauna of species other than corals, most of which are not found in the Racine limestone, nor are they known in any other formation except the Le Claire of Iowa.

Among this unique fauna from Port Byron there have been described several new genera and about seventy-five species of cephalopods, and the writer has a dozen or more species of brachiopods and mollusks, none of which occur in the Racine limestone, or in any other member of the Niagaran limestone at any known locality.

This large number of fossil species that seem to be restricted to the Port Byron limestone might be accounted for in two possible ways. It might be assumed that, as this limestone is younger than the Racine, it might originally have been deposited widely over this region, and that it has been removed by erosion over all Illinois except in the vicinity of Port Byron. An alternative explanation might assume that the Port Byron locality was situated in a different marine province from that in which the Racine limestone in the northeast part of the State was deposited.

During Edgewood time the Essex limestone on the east side of the LaSalle anticline, was represented by a similar limestone that occurs at the base of the bluff of Silurian limestone a short distance north of Savanna. The *Stricklandinia pyriformis* zone that, in the vicinity of Savanna, is found about forty feet above the base of the Silurian, occurs at a corresponding horizon on the east side of the anticline near Joliet and St. Charles. The limestone quarried extensively in the river bluff between Port Byron and Fulton, in western Illinois, appears to be the Waukesha limestone.

The above facts make it seem more probable to the writer that the Niagaran limestone in the northeast and the northwest parts of Illinois was deposited in the same marine basin, and that these areas have since been separated by the erosion of the Silurian strata from the top of the anticline in the north-central part of the State.

Neither of the foregoing assumptions explains the source or origin of the Port Byron fauna. It seems certain that it could not have developed from the earlier Racine fauna in this region, for the latter fauna does not contain species from which the Port Byron forms could be expected to have evolved.

Forms ancestral to these species are not known from any other region or provinces of the Niagaran, and the explanation of the source of this fauna must wait a more complete knowledge of the Silurian history.