

In conclusion I wish to protest against the restoration Huene has made of my figure of the pelvis of *Eubrachiosaurus* Will. (p. 49). The outlines as I gave them are essentially correct, and the bones do *not* belong on the right side. As to the distinction of the genus from *Placerias* Lucas, I am, however, not so sure.

S. W. WILLISTON

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*The Monroe Formation of Southern Michigan and Adjoining Regions.*

By A. W. GRABAU AND W. H. SHERZER. [Michigan Geological and Biological Survey. Publication 2. Geological Series 1.]

This report describes a series of Paleozoic beds and their faunas which have their greatest development in southeastern Michigan and the adjacent portions of Ontario and Ohio. In the past these strata, which constitute the Monroe formation, have been much misunderstood, and their importance in the Paleozoic section of the region has been greatly underestimated. The maximum thickness of the formation is about 1,200 feet.

The Monroe as a whole is divided into two series of dolomitic beds, the Lower and Upper Monroe, separated by the Sylvania sandstones, a bed of exceptionally pure, white, and almost incoherent sand in its more typical development, but merging into arenaceous dolomites in its less typical expression. The maximum thickness of the Sylvania is 300 feet, and the peculiar nature of the formation is explained on the hypothesis that it is an aeolian deposit laid down under essentially desert conditions, the original source of the material being the exposures of the Saint Peter sandstone to the northwest in Wisconsin.

The Monroe faunas are described in detail and are illustrated by twenty-five plates; 126 species in all are defined, many of them new forms, and seven new genera are proposed. The faunas of the two divisions of the Monroe are shown to be essentially different, there being almost no species in common. The Lower Monroe faunas are all late Silurian in aspect, being more or less closely related to the Manilus and Rondout formations of eastern New York. In the lower divisions of the Upper Monroe a conspicuous coral element appears which was entirely lacking in the Lower Monroe faunas, and among these corals are many strikingly Devonian forms; among the brachiopods are found both Devonian and Silurian types; the pelecypods are Devonian while the gastropods and cephalopods are essentially Silurian in aspect.

Lying above the beds carrying the strikingly Devonian fauna of the Upper Monroe, is the Lucas dolomite, the youngest member of the series, in which the fauna is Silurian in aspect throughout.

In their correlation of the Monroe series the authors adopt a new arrangement of the North American Silurian formations, as follows: (1) Lower Silurian or Niagaran, (2) Middle Silurian or Salinan, (3) Upper Silurian of Monroan. The Lower Monroe is said to be unrepresented in either western or eastern New York, but is correlated with the so-called "Salina" and the lower portion of the Corrigan formation of Maryland. The lower portion of the Upper Monroe is correlated with the Bertie waterlime and Akron dolomite of western New York, and with the Rosendale waterlime and Cobleskill of eastern New York. An equivalent of the Lucas dolomite is wanting in western New York but it is represented by the Rondout and Manlius of eastern New York and by the Corrigan formation of Maryland.

In a discussion of the paleogeography of Monroe times it is suggested that the faunas of Silurian aspect in the Lower Monroe and in the Lucas dolomite have had an Atlantic origin, while the faunas with the notable Devonian expression in the Upper Monroe below the Lucas dolomite have come in from the north.

S. W.

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*The Fossils and Stratigraphy of the Middle Devonian of Wisconsin.*

By HERDMAN F. CLELAND. [Wisconsin Geological and Natural History Survey, Bulletin No. XXI.]

The Devonian faunas occurring in the neighborhood of Milwaukee and Lake Church, Wisconsin, are of especial interest to students of Paleozoic historical geology because of their intermediate geographic position between the much better known Devonian faunas of New York and of Iowa. The present report by Dr. Cleland records a complete census of these faunas with detailed descriptions of the species, accompanied by fifty-three plates of illustrations. Something over 200 species are recognized. Of the total number of species 81 occur in Devonian faunas east of Wisconsin, mostly in New York, while 48 species occur in the Devonian of Iowa and other localities to the west. This mingling of the eastern and western faunas of late Middle and early Upper Devonian time in the Milwaukee region has been pointed out before, but here for the first time do we have a full statement of the evidence.

S. W.