period, though the isolation of our sea has resulted in little correspondence of organic remains. The paucity of rock-producing materials seems to have continued through the epoch of the coal—our measures not attaining one-twentieth the thickness of the same rocks in Ohio. The evidences lead us to the conviction that the Onio and Michigan coal basins were never continuous, and that the waters did not flow over the separating ridge between the close of the Helderberg period and the Drift. It cannot be denied, however, that, supposing the carboniferous sea to have been a general one, the remoteness and comparative isolation of the Michigan bay, furnished occasion for great contrasts in stratigraphical, lithological and palæontological characters.

"One other class of facts must be referred to, which weigh in the same direction. They constitute evidence that the materials for our upper Devonian and carboniferous rocks have been derived from the north. The Helderberg limestones are 350 feet thick at Mackinac, and not more than 60 feet thick in Monroe county. The Hamilton Group, so well developed in Thunder and Little Traverse Bays, is not recognized in the southern part of the State. The Huron Group, with its gritstones and flagstones at Pt. aux Barques, contains only two strata of flagstone at Grand Rapids. The conglomerate at the base of the Marshall Group, at Pt. aux Barques, is recognized at none of the Southern outcrops. The pebbles scattered through the Marshall and Napoleon Groups in Huron county, are entirely wanting in Jackson and Calhoun counties; while, on the contrary, extensive patches of the Marshall sandstone are found finely cemented by calcareous matter at Battle Creek, Jonesville and other southern points.

"One other remark is suggested by this review of our rocks. The geology of Michigan discloses little connection between the Carboniferous Limestone and the Coal Measures; while the transition to Devonian rocks is imperceptible. I see no reason for drawing the broad lines which separate great systems, between the Marshall and Napoleon groups, or between the Napoleon group and the Carboniferous limestone. On the contrary, I see this limestone characterized by a peculiar, persistent, marine fauna, while the Parma Sandstone, the Coal Measures and the Woodville Sandstone, were accumulated in shallow waters near shores, or even in marshes; and are characterized, from bottom to top, by evidences of the proximity and abundance of terrestrial vegetation. These contrasts hold throughout the country, and in all countries. Whatever marine remains are found in the coal measures, belong to species distinct from those in the Carboniferous Limestone; and if the generic distinctions are not complete, the organic facies of one is vegetable and terrestrial; that of the other, animal and marine. Downward the types of the lower Carboniferous rocks descend into the upper Devonian—some carboniferous species, and numerous carboniferous types, even reaching the Hamilton group. Observations in Michigan suggest rather to draw the broad systematic lines below the Hamilton group, and between the Carboniferous Limestone and the Coal Measures."

As remarked above, the Drift deposits, in Michigan, immediately overlie the Carboniferous Formation. The rocks beneath the Drift shew the usual glacial striæ, and the lower Drift beds consist of