close of the era of the coal measures, generally under water, and unless Michigan has been the subject of extreme denudation, those portions of the State which surround the coal measures were dry land when these measures were de-Since that period the State has been entirely above posited. water, if we except any depression during quaternary times. Whatever the oscillations have been at different periods, the fact remains that the State is now in considerable sections elevated between one thousand and two thousand feet above the sea, the areas between the central and northern portions of the State forming the highest levels. In the country on the immediate west side of Lake Michigan, the land has, with the same exception, been above water since about the period of the Niagara limestones and shales, and is now there, in many sections, also between one and two thousand feet above the sea. In the Ontario peninsula, on the east side of Lake Huron, there is an elevation reaching on the anticlinal at the Niagara escarpment as high as seventeen hundred feet. There is, however, good evidence, as will be shown farther on, that at some former time there have been certain marked disturbances in the general level of the Michigan, Erie, Huron and Ontario areas, operating probably simultaneously, and that these disturbances had much to do with the more general defining of the contours of these lakes.

In following the history of the Great Lakes, the physical features of the lake bottoms afford some interesting chapters. The soundings undertaken by Cols. Meade, Comstock, and other engineers of the United States War Department, and those of Capt. Bayfield and Commander Bolton of the Canadian Marine Service, enable us to form some important conclusions, especially when taken in connection with the physical and geological features of the coasts of the lakes. That the lakes have to even a moderate extent a glacial origin does not appear to be borne out by the facts which these soundings reveal, however much icebergs and glaciers have contributed their quota of results to the outlines of some portions of the coasts and to the character and disposition of the material upon these coasts and upon the lake bottoms.