

whole thickness of the Hamilton group and the Corniferous limestone, but with nothing more than continued "signs" of oil. The same was done in the salt well at Port Austin, and in the deep boring at Jackson, in the same state.

In addition to these and other negative evidences that the view of Dr. Hunt is untenable, we have the demonstration of experiment upon the constitution of limestones and black shales. The amount of oil that can be extracted from any sample of the Corniferous limestone is utterly insignificant in comparison with the amount obtainable from the Genesee shale. It is a matter of ocular demonstration that the Genesee shale incloses a vast supply of the material for petroleum-making, while the Corniferous limestone contains almost none of the material, and comparatively little of the generated product. I shall insist, then, with my distinguished friend Dr. Newberry, late President of the American Association for the Advancement of Science, upon the correctness of that view which regards the black shales as the chief generators of supplies of native petroleum. I dissent from the position of Dr. Hunt with the utmost deference to the weight of his authority, and only because I have enjoyed opportunities seldom equaled to examine the geology of all the "oil-regions" east of the Rocky Mountains.

The petroligenous formation may be present in the absence of reservoirs for the reception of the product. There is a well-defined belt along the eastern and the western slopes of the lower peninsula of Michigan which is immediately underlaid by the Genesee shale, capped by a deposit of argillaceous surface materials adequate to prevent wastage; but no oil has accumulated, because no space has been provided for it. In some portions of the Enniskillen region, twenty miles distant, the geological conditions are perfectly identical, except that a bed of gravel lies at the bottom of the drift materials, and immediately upon the