

dry and spongy in summer and covered mostly with sedges and grasses. Sandy spots and a few low sand ridges are noticed at the upper ends. Tamarack swamps, marshy and boggy places, ponds and shallow lakes, are noticed in various parts of the county, but these have been greatly modified and have partially disappeared in recent years on account of drainage and fires. Along the Lake Huron shore for nearly the whole distance from Point Edward to the north-east limit of the county are sand hills and sand ridges, known also as sand dunes, usually parallel with the shore, ranging from a few to nearly 100 feet in height and extending back from a few rods to a mile. For a short distance near Camlachie and Kettle Point, the latter place famous for its peculiar rock formation, sand ridges for the most part disappear and flat and naturally wet land covered with the prevailing forest of the county runs down to the shore. These dunes are pure sand and owe their origin exclusively to local conditions and the combined action of waves and wind. They are not so extensive as on the west coast of Michigan and not very prominent here except at and near Port Franks, where a vast amount of sand has been piled up and ridge succeeds ridge for a mile back from shore. Most of them are fixed, being covered with trees, shrubs and herbaceous plants that substantially hold the sand in place. Near the lake, especially at Port Franks, the dunes are still forming and being blown first one way and then another, but nowhere, so far as observed, are they encroaching upon good agricultural land. The lake shore of the county running quite uniformly north-east and south-west, the question naturally arises as to why the dunes are so much more prominent and massive at Port Franks than at any other point. On the west coast of Michigan it has been noticed that the largest dunes have been formed at the mouths of rivers.\* This, perhaps, fully explains the situation at Port Franks. At this point the Aux Sables River enters the lake, brings down and carries into it immense amounts of sand, which is again washed up by waves and then blown up into dunes.

From the foregoing it will be seen that the district under consideration may be conveniently divided into three plant habitats: 1, Hydrophytic, the very wet; 2, Mesophytic, the medium wet; 3, Xerophytic, the very dry.

#### HYDROPHYTIC.

This includes lakes, rivers, creeks, parts of their shores, ponds and bogs. From the favorable situation of the locality

\*The Ecological Relations of the Vegetation on the Sand Dunes of Lake Michigan, by Henry Chandler Cowles. Botanical Gazette, Vol. XXVII, Nos. 2, 3, 4 and 5.