south of the Alaskan boundary at Dixon entrance, are the Queen Charlotte islands (4,000 square miles) and Vancouver island (13,500 square miles), besides innumerable smaller islands. Manitoulin island in lake Huron and the Thousand Islands in the St. Lawrence at its outlet from lake Ontario are among the most important islands of our inland waters. On the eastern borders of the Dominion are the island of Anticosti, Prince Edward Island, one of the nine provinces, Cape Breton island and the Magdalen islands.

II.—GEOLOGICAL FORMATION.[1]

1.—Historical Outline and Geological Divisions.

Introduction.—While politically and economically Canada is a new country, from the geological point of view its central and eastern parts are of extreme old age, forming probably the largest area of Archaean or pre-Cambrian rocks in the world. At the same time comparatively recent geological events have rejuvenated the region, impressing upon it many of the characteristics of youth, as a result of which the Dominion presents impressive contrasts in geological structure and physical features.

When the officials of the Geological Survey commenced to study the geology of eastern Canada they found that the more ancient and crystalline rocks, the nucleus or protaxis about which the remainder of the continent was built up, extended north-eastwards and north-westwards on each side of James bay and Hudson bay. The American geologist Dana called this Canadian Archaean with its spreading arms a V-formation, but when it became evident that the ancient rocks extended also along the north side of Hudson bay, the Viennese geologist, Suess, gave to this vast area the name of *the Canadian Shield*, a term which has been accepted by subsequent writers. In the centre of the Shield there was at least in early times a depression filled by a shallow sea and now occupied by Hudson bay.

A second Archaean protaxis is situated 500 miles south-west of the edge of the Shield, that of the Selkirk and Gold Range mountains in British Columbia. This is long, narrow, and somewhat interrupted, running from south-east to north-west parallel to the coast. The *débris* resulting from the destruction of the mountainous Archaean areas piled up in the shallow seas around, and on their flanks and in the wide trough between them marine Palaeozoic rocks were laid down. Later, Mesozoic sediments were deposited upon them, practically completing the outline of Canada and extending south into what is now the United States.

Together with this growth in area went the upheaval of mountains, first in Archaean times, when apparently the whole surface of the Shield was covered by great mountain chains, next at the end of the Palaeozoic age, along the south-eastern and south-western sides, and finally at the end of the Mesozoic era, when the Rocky mountains were elevated on the margin of the shallow interior sea. Outside of this area of mountain-building the rocks are fairly level and undisturbed, showing comparatively stable conditions throughout the continent.

Historical Outline.—Since more than half of Canada is covered by Archaean or pre-Cambrian formations, these must first be considered. The lowest rocks are

[1]Adapted from articles by R. W. Brock, M.A., LL.D., University of British Columbia, and Wyatt Malcolm, M.A., Dept. of Mines, Ottawa, in the Canada Year Book, 1921.