SYNOPSIS OF THE GEOLOGY OF CANADA

The Acadian Region.—The Laurentian system is well developed in many portions of Cape Breton, New Brunswick, and Newfoundland where it consists of granitoid and foliated gneisses and syenites.

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In New Brunswick crystalline schists of the *Portland* group, the felspathic and chloritic gneisses of the St. John region are assigned to this horizon by Dr. Matthew and Dr. Ells. The Boisdale and East Bay hills of Cape Breton are also referred to the Laurentian by Mr. Hugh Fletcher. From Cape Ray to Canada Bay and from Hermitage Bay to Cape Freels, two parallel belts of Laurentian rocks occur in Newfoundland.

The Laurentian Highlands.—Rocks of the Laurentian system constitute nearly nine-tenths of the area of the great peninsula of Labrador, and according to Mr. A. P. Low, consist for the most part of foliated hornblende and granite-gneiss, such as occur in the fundamental or Ottawa gneiss, overlaid by mica gneisses and mica schists belonging to the Grenville Series.

In the province of Quebec, north of the island of Montreal, Dr. Adams informs us that the fundamental gneiss consists largely of igneous rocks, banded and foliated, owing to the movements and arrangement amongst the constituents caused by pressure. These gneisses are penetrated everywhere by other igneous masses, including the anorthosite rocks, belonging to the gabbro family, with plagioclase predominant. These latter constitute the *Norian* or Upper Laurentian of Hunt and older geologists, but are known to cut the *Grenville* series also referred to the Upper Laurentian and are therefore post-Grenvillian eruptives.

In Central Ontario, Dr. Adams together with Dr. A. E. Barlow agree in the statement that the Laurentian gneisses occur in that province, and occupy a large portion of the area coloured as Archaean, where they consist of granitoid gneisses, diorites, and gabbros, all more or less clearly foliated. Associated with these gneisses, in the two areas last mentioned, there occur the *Grenvillc* and *Hastings* series respectively. These two are held to be probable equivalents and newer than the fundamental gneiss of the Laurentian.

Dr. Barlow aptly describes the fundamental gneiss of the Laurentian as follows :---

"It may possibly represent, in great part, the first-formed crust of the earth, which, necessarily thin and fragile, and so liable to frequent upswellings of the molten mass beneath, has undergone successive fusions and recementations before reaching its present condition. As at present mapped, it is regarded as a complex of irruptive plutonic rocks, representing replated and intricate intrusions of basic and acidic material.

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