

these masses made room for themselves in two principal ways: (1) by thrusting aside the older rocks; and (2) by *lit par lit* injection. That the batholiths have roomed themselves in part, in the first manner, is indicated (1) by the distribution of the older rocks in the form of belts and scalloped-shaped areas intervening between the batholiths and (2) by the manner in which the foliation, banding, and bedding in the intruded rocks tend to parallel the batholithic margin. This parallelism is especially well developed in the easily deformed limestone member of the Grenville series. The second mode of intrusion was evidently a widespread phenomenon, for throughout the larger part of the batholithic masses of granite and syenite there are numerous included bands of garnet gneiss, quartzite, and pyroxenic gneiss ranging in width from a fraction of an inch to several hundred feet, which are penetrated by numerous transverse dykes emanating from the adjoining granite and syenite (Plate V).

LATE PRE-CAMBRIAN INTRUSIVES.

General Statement.

The rocks occurring in the Grenville district, which have been classed as late Pre-Cambrian, are igneous intrusions which are lithologically different from the rocks of the basal complex and unlike the rocks of the basal complex have not been greatly deformed or otherwise metamorphosed. On the other hand, no rocks of similar character have been observed to intrude the Palæozoic sediments which overlie the Pre-Cambrian in the southern part of the district. It is probable, therefore, that these intrusives are not only considerably younger in age than the basal complex but also are older than the Palæozoic and are, therefore, late Pre-Cambrian in age. They include two separate types of intrusives: (1) diabase dykes and (2) a single stock-like mass of granite, quartz syenite, syenite, and quartz syenite porphyry.

Diabase.

The rocks of this class occur as numerous approximately east-west trending dykes of diabase ranging from less than a foot to several hundred feet in width, which form part of a widely extended dyke system which parallels the southern margin of the Laurentian plateau for a distance of at least 150 miles in this region. The diabase is a typical, fine-grained to coarse variety consisting of labradorite, augite, and scattered grains of ilmenite.

Granite, Quartz Syenite, Syenite, Quartz Syenite Porphyry.

Extending along the margin of the Laurentian plateau to the north-east of the town of Grenville there is an elliptical-shaped mass of rock