

a hundred yards, and they possess a well marked columnar structure. Their general bearing appears to approach east and west, but the main dykes occasionally divide, a branch striking off at an angle of from twenty to forty degrees." Some of them have been traced for many miles, cutting both the limestones and gneisses, and sometimes forming a ridge across the limestone and a hollow in the gneiss. Whenever they are seen to come into contact with the syenite they are interrupted or cut off by it, being therefore more ancient; and "the relations" Sir William states "of the base of the Lower Silurian group along the foot of the hills composed of the syenite are such as to make it evident that the Silurian beds in some places overlie eroded portions of the intrusive rock." All the intrusive rocks of this region are, however, cut by a set of dykes the relations of which to the Silurian series is not known. They were described in Sir William's original report under the name of melaphyre, but were afterwards designated by Hunt as dolerites, though differing considerably in characters from the older rocks of that name.

The writer regrets that he has not had an opportunity of visiting any of the places mentioned above, or even of seeing authentic specimens of any of the dykes, with the exception of a few from Grenville and two or three other localities. These specimens have, however, been sliced and studied microscopically, and a few notes on their microscopic characters may be of interest.

MICROSCOPIC CHARACTERS.

I. *Grenville, Lot 9, Range IV.* (Plate, fig. 1) The examination of a specimen from this locality shows it to consist of plagioclase feldspar, augite, magnetite, viridite,* apatite, and a little mica and iron pyrites. The plagioclase forms a very considerable proportion of the rock, and although much of it has undergone alteration and lost its transparency, it still shows in places, with polarised light, the banded appearance common in plagioclastic feldspars. It has evidently crystallised before the augite, as blades of it are frequently seen to penetrate the latter mineral. The augite is pale brown or in places pinkish in colour. Its form has, for the most part, been impressed upon it by the

* This useful name is applied to a number of green substances which often result from the decomposition of augite, hornblende and olivine, and which cannot always be "individualised."