

tion of the olivine. Frequently, however, it occurs in tabular or rod-like forms, which are sometimes arranged in one set of parallel planes only, while in other cases they lie in two sets of planes intersecting one another. These rod-like forms penetrate all the constituents of the rock. In many instances the smaller rod-like forms occur in association with the biotite, and their correspondence in position with the planes of cleavage of this mineral suggests that in these cases, at least, their formation has been due to secondary action ("Schillerization"), involving the elimination of the iron and the development of magnetite along the planes of easy cleavage.

2. *Locality*.—S.E.  $\frac{1}{4}$ , N.W.  $\frac{1}{4}$ , Section 19, 65, 3, cutting on the Port Arthur, Duluth and Western R.R., just west of the narrows of Gunflint Lake, Minnesota. (1)

Mr. U. S. Grant, who kindly sent me the specimen at Prof. Winchell's request, says: "The rock is from one of the diabase sills (2) in the lower iron-bearing member of the Animikie. The markedly porphyritic character is only local, the main part of the sill being without phenocrysts. These porphyritic patches are sometimes rather sharply marked off from the main mass of the sill, but they usually pass into the non-porphyrific parts simply by a gradual loss of the large crystals. This sporadic development of large felspar phenocrysts in certain of these Animikie sills is a rather common feature."

Macroscopically the rock resembles very closely the boulder brought from Lake Temagami, being a dark green diabase with phenocrysts of fresh plagioclase which exhibit the polysynthetic twin lamellation very beautifully.

The microscope reveals a rock composed mainly of plagioclase and augite with pronounced ophitic structure. The augite when fresh is of the reddish and slightly pleochroic variety so common in diabase, but it shows abundant alteration to greenish or brownish green hornblende (uralite). The opaque iron ore has the same rod-like development noticed in the examination of the preceding rock. Biotite is present

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(1) Specimen No. 951, Geographical and Natural History Survey of Minnesota, collector U. S. Grant, see 22nd Annual Report, p. 82.

(2) Logan hills of Lawson, see Bulletin 8, Minnesota Survey.