BROME MOUNTAIN

REMARK

cause a transverse fracture or, at least, a line of weakness along the line of greatest pressure which would be directly at right angles to the Appalachian axis. This would be especially the case were the elevation of the Appalachian axis slightly greater in the vicinity of Brome and Shefford mountains, than elsewhere. Such a fracture would σ greatest at the eastern and least at the western end, which approximr⁺ ly denotes the variation in the size of these hills. Brome is the hargest, Shefford the next in size and Montarville and Mount Royal the smallest of the series, except Mount Johnson, which is quite out of the main line and so may depend on a subordinate longitudinal fold. The compression of the sedimentary rocks, it should be mentioned, took place very largely before the intrusion of the Monteregian hills.

The possibility suggested by Dr. Ells, of the Monteregian chain extending across the Appalachian axis, was inferred f macroscopic resemblance of certain rocks of Orford to the syenitic rock (nordmarkose) of Shefford. The distance between Shefford and Brome mountains and Mount Orford—only twenty miles—is the nearest point of approach of the Monteregian chain to the series of hills to which Orford, Owls Head and the other hills of that range belong. Between them is the axis of the first Appelachian, itself an aneient volcanic ridge.

About a mile and a half west of Mount Orford, i. e. towards Shefford, four dikes are plainly exposed in a cutting of the Canadian Pacific Railway. Their proximity to Mount Orford naturally suggested that they were offshoots from that mass, but specimens taken from the dikes seemed to indicate that they more probably belonged to Shefford mountain. Thin sections of each were, therefore, examined under the microscope. The results as the following descriptions show, were negative, and the dikes should, accordingly, be regarded as offshoots from Mount Orford.

I. A mile and a half west of "Orford Crossing", the point from which the ascent of the mountain is usually begun, a dike some ten feet in width appears in the Pre-Cambrian sedimentary mica schists of the locality. It is a reddish brown porphyritic rock showing light grey phenocrysts and irregular rusty red areas somewhat larger than the phenocrysts.

By the aid of the microscope the phenocrysts, which form only a small portion of the rock, are found to be feldspar. Some of the less decomposed show the polysynthetic twinning of plagioclase, but all are too far altered to admit of more definite determination. The groundmass is composed chiefly of feldspathic and ferruginous material, the lar er being are result ferric iron more or less hydrated and giving the provail to the rock, while the former is in small lath-

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