

- 1 Dewitt dike near Syracuse. Darton & Kemp, *op. cit.* p.461, analyst, H. N. Stokes.
- 2 Manheim, Herkimer co., C. H. Smyth, *op. cit.* p.325, analyst Smyth.
- 3 Manheim, Herkimer co., C. H. Smyth, *op. cit.* p.262, analyst Smyth.
- 4 Ithaca, J. F. Kemp, *op. cit.* p.412, analyst W. H. Morrison; analysis incomplete, and the alumina and magnesia determinations obviously incorrect.

The first three of these analyses are of *fairly* fresh material, when the character of the rock is taken into consideration. They suffice to bring out clearly the close relationships of the rocks from the different localities, as evinced by the low silica and alumina and the very high magnesia. While these characters belong to the general rock group to which these rocks pertain, they are the only igneous rocks of the group known in the State, and therefore clearly represent outflows from the same subterranean source. So far as known, they are confined to the central part of the State, but the three localities are so widely separated that unquestionably others will be forthcoming.

ROCK STRUCTURES

The rocks of the Adirondack region may be separated into three main groups of widely separated age, owing to the fact that there have been three main periods of rock formation in the region, separated by protracted intervals of wear. The Precambrian rocks constitute the first group, the early paleozoics the second, and the pleistocene deposits the third. The last are so recent as to be in substantially the condition in which they were deposited, unconsolidated masses of glacial deposits and of marine and fresh-water sands and clays. A vast time interval separates them from the paleozoics, which are all thoroughly indurated rocks, but which are otherwise not greatly altered from their original condition, though they have suffered somewhat from earth stresses and movements. Another vast time interval separates these from the Precambrian rocks, and the latter underwent profound changes in character during this interval. They therefore present structural features which are confined to them, as well as others which they share with the Paleozoic rocks.

Foliation

In the Adirondack region the Precambrian rocks alone have suffered metamorphism, but they are so profoundly metamorphosed, the late dikes always excepted, as to have been vastly