

layers of muscovite. In the micaceous layers are numerous broken crystals of tourmaline whose fragments are separated along a single line as though they had been compressed and pulled apart by some earth movement.

THE MARBLE.—The marbles of the Piedmont Plateau are of interest topographically, structurally, mineralogically and economically. There are few areas in Maryland where the dependence of topography upon the nature of the underlying rocks is better shown than in the contrasts between the flat, narrow valleys in the marbles and the abrupt ridges or gorges of adjacent gneisses and quartz-schist. Geologically the marbles are younger than the gneisses and quartz-schist, but the detailed relations are obscured by great structural complexity and recrystallization. The general lines of structure might be inferred from the areal distribution were this not so anomalous and irregular as to render any explanation unsatisfactory. It is clear, however, that it is to be accounted for not by folding alone, but by folding accompanied by thrusts and faults at several successive periods.

The marbles of this division differ in texture and composition from the finer and more compact crystalline limestones of the western or semi-crystalline area. In the latter the impurities are in the form of thin, argillaceous bands, while in the former they are represented by layers of accessory minerals, including tremolite, white pyroxene, green muscovite, brown and black tourmaline, scapolite, quartz, pyrite and rutile, which correspond more or less closely with the original bedding planes. The marbles are often dolomites, frequently showing over 40 per cent of magnesium carbonate. The Baltimore county marbles are extensively quarried, either for burning or for use as a flux, or as a building stone (magnesian).

THE GABBRO.—One of the most ancient and most extensive of the three eruptive rocks which so abundantly intrude the gneiss complex is the gabbro. There are three main areas of this rock within the limits of the state—the Stony Forest area of Harford and Cecil counties; the great belt or sheet which extends from the north of Conowingo, on the Susquehanna river, in a south-southwest direction to Baltimore city; and the irregular intrusive area which is mainly developed to the