

are not the only ones which belong to these rocks, but that their present metamorphism and complexity must be accounted for by assuming that they have been subjected to several successive periods of disturbance.

The rocks composing the holocrystalline portion of the Piedmont Plateau in Maryland are petrographically divisible into seven distinct types. Four of these are of undoubtedly eruptive origin and may be designated according to their chemical and mineralogical composition as diorite, gabbro, peridotite or pyroxenite, and granite. The remaining types through which the eruptive rocks have broken—gneiss, marble and quartz-schist—are completely crystalline, and therefore exhibit no certain trace of clastic structure, although it seems highly probable that they were of sedimentary origin. Since all four types of eruptive rocks have broken through and more or less modified the other rocks, they are younger than the latter. The intense dynamic action which has produced such recrystallization in the gneiss complex has likewise greatly metamorphosed the eruptive rocks, and yet not enough to obliterate their original character. Each type exhibits several chemical and structural facies dependent upon the original differentiation of the magma or upon the conditions of solidification, to which must be added other variations due to subsequent metamorphism.

THE GNEISS.—The prevailing rock of the entire holocrystalline area is the gneiss. It enters the state from the north in a very wide band, completely surrounding the Delta Peach Bottom slate area, but its breadth rapidly contracts toward the Potomac. The remarkably irregular form of the marble areas which are intercalated in the gneiss complex shows how intricate the stratigraphy of the latter really is. Much of its apparent simplicity is due to the obliteration of its true bedding through secondary foliation. The Maryland gneiss embraces a great variety of types, which range from granitoid aggregates of feldspar and quartz on the one hand to nearly pure mica or hornblende schist on the other. All of these also show considerable structural variation in the coarseness of their grain, the perfection of their parallel arrangement, etc. The gneiss is sometimes quite constant or