mapped by Mr. A. E. Murlin. In the following years those in the mountains were revised for the purpose of adapting them to the two-mile scale, and in 1895 and 1896 those on the eastern shore were mapped, thus completing the mapped area of the state. This is shown on the small accompanying map. The tier of partial quadrangles just south of the Pennsylvania line, in the western part of the state, was originally surveyed for publication on the four-mile scale, and this area has never been revised to adapt it to a larger scale.

GEOLOGIC WORK.

The earliest geologic work carried on by the United States Geological Survey in Maryland was, as has been said, of the nature of reconnaissance, with chief reference to the general stratigraphic relations. There followed from time to time the detailed mapping of certain formations, accompanied by extensive laboratory study of crystalline rocks, and field and laboratory studies of fossil plants and animals. The work is conveniently described under three geographic heads, the Piedmont Plateau, the Appalachian Region, and the Coastal Plain.

Piedmont Plateau.

The principal work of the Survey in the Piedmont region was conducted by Professor George H. Williams, of the Johns Hopkins University, who for several years made detailed studies of the crystalline rocks and their relations under the joint auspices of the Geological Survey and the University.

His field work for the Survey began in the spring of 1888, but for several years prior to this he had been engaged in the study of the crystalline rocks in the vicinity of Baltimore, some of the results of which were published in a government bulletin entitled "The Gabbros and Associated Hornblende Rocks occurring in the neighborhood of Baltimore, Maryland."[1]

His principal work in 1888-89 was carried on along two distinct lines and with two distinct sets of problems in view. First, to trace out the relations of the slightly crystalline or non-crystalline rocks

[1] Bull. U. S. Geol. Survey No. 28, vol. iv, 1886, pp. 613-688.