

yard to six miles, with an average of perhaps 100 yards. The areal distribution in Maryland is confined to the low land north of the Potomac river, between the Blue Ridge and Catoctin mountains. No evidence is at hand to show the relation between this mass of granite and those already described from northeastern Maryland. It seems probable, however, that they are of the same age and origin. The small tongues of granite running out into the schistose basic rocks indicate that the former is the younger and that it has been intruded into the latter. The granites show only a moderate amount of mica and are frequently garnet or epidote-bearing, the garnet-bearing type being well exposed along the Potomac a mile or so east of Harper's Ferry. Here, as in the rest of the area, the granites show marked evidence of dynamic metamorphism. The feldspars have been deformed and altered, first along the cracks and then finally entirely into lenticles of quartz, muscovite and chlorite. This final stage is macroscopically nothing more than a silicious slate or schist and is barely distinguishable from the end products of similar metamorphism in the more feldspathic schists and the Loudoun sandy slates.

#### THE CAMBRIAN PERIOD.

The rocks of the Cambrian are confined to the eastern division of the Appalachian Region, previously described as comprising the Blue Ridge and Great Valley, and cover considerable areas in Frederick and Washington counties. They consist of sedimentary materials that have been much metamorphosed since they were deposited, and also subjected to marked structural disturbances, rendering their relations at times difficult of interpretation. Five divisions have been recognized in the sequence of Cambrian deposits, known respectively as the Loudoun, Weverton, Harpers, Antietam and Shenandoah formations, the latter, however, being also in part of lower Silurian age.

**THE LOUDOUN FORMATION.**—The Loudoun formation, so called from its typical development in Loudoun county, Virginia, is represented in Maryland in long narrow belts of rock accompanying the mountain ridges, and is found in the Catoctin Mountain, the Blue Ridge and the Elk Ridge. The deposits consist largely of a fine dark