

slate with limestones, shales, sandstones and conglomerates. The coarser and thicker deposits are found in narrow synclines upon the surface of the Algonkian rocks; the thinner and finer beds are in the synclines, which are succeeded by the Weverton sandstone. The limestones occur in the form of lenses in the slate and are best developed along the eastern side of the district just to the west of the Catoclin Mountain, where they are generally highly metamorphosed. Beds of sandstone occur in the Loudoun formation, although more prominently developed to the south of the Potomac river. The thickness of the formation is very variable, ranging from a few to over 500 feet.

The formation as a whole has been much metamorphosed, alteration being most apparent in the argillaceous beds, which have been changed into slates and schists, all traces of the original bedding being frequently lost. The slate readily decomposes, forming low ground, but the more silicious rocks commonly occur as small hills or ridges.

**THE WEVERTON FORMATION.**—The Weverton formation, so called from its occurrence near Weverton at the point where the Blue Ridge reaches the Potomac river, consists of massive beds of fine, pure sandstone, quartzite, and conglomerate. They are usually white, the coarser beds somewhat gray. In the Blue Ridge the sandstones are streaked with black and bluish bands. The deposits are mainly composed of quartz grains, which are well worn and are washed quite clean of fine argillaceous materials. They at times show cross-bedding, which indicates that the formation was largely laid down in shallow water. The thickness of the formation is quite variable, between 200 and 300 feet.

The Weverton sandstone has been subjected to but little metamorphism, as the quartz particles which comprise the deposits do not afford materials which admit of much alteration. Slight schistosity is evident in the southern part of the Catoclin Mountain. The sandstone decays slowly and generally forms projecting ledges on the surface of the country.

**THE HARPERS FORMATION.**—The Harpers formation, so called from its typical occurrence at Harper's Ferry, is composed largely of sandy shales with a few sandstone layers imbedded in its upper por-