

is best developed in Wills Mountain to the northwest of Cumberland. The formation consists of alternating shales and sandstones of a deep red color. The formation has a thickness in Wills Mountain of at least 550 feet.

THE TUSCARORA FORMATION (white Medina sandstone), so called from its typical development in Tuscarora Mountain in Pennsylvania, is found at widely separated points in the Appalachian district. Upon the east it enters into the formation of North Mountain, the most eastern ridge of the central Appalachians, and upon the west forms Wills Mountain just to the west of Cumberland, and also occurs at several points in the intervening country. The rock is chiefly sandstone, which is hard and massive, generally white or gray in color, and consists for the most part of coarse quartz grains. Few fossils have been found in the Tuscarora formation, but it is the undoubted equivalent of the white Medina sandstone of the north. The thickness of the formation is probably not far from 1500 feet in the western portion of the district. The deposits of the Tuscarora formation have been subjected to little alteration and the hard sandstone stands out as ridges upon the surface.

THE ROCKWOOD FORMATION (Clinton shales).—The Rockwood formation, so called from its typical development at Rockwood, Tennessee, is confined to the central district of the Appalachian Region, occurring in three isolated belts in western Washington county, two to the east and one to the west of Hancock, and also in three tracts in central Allegany county, two to the east and one within and to the west of Cumberland, the latter area being separated into two parts by the ridge of Wills Mountain. The Rockwood formation consists mainly of brown and gray shales, which are very fine-grained and homogeneous. Bands of limestone are at times present in the shales in the upper portion of the formation. There are also two beds of iron ore, the lower near the base of the formation and the upper near the top. The original character of these two bands was probably that of a highly ferruginous, fossiliferous limestone from which the calcium carbonate has been removed in solution. Fossils are very numerous in the upper ore bed and in the shales immediately above