The Konnarock Formation was deposited on the North American Craton most likely during a cut short phrase of rifting which preceded continental disjoining and the forming of the Iapetus Ocean. (Miller, 1994) Konnarock was named for the town of Konnarock of Washington County in Southwestern Virginia. It was previously named and mapped as the upper part of Mount Rogers.

Konnarock was formerly included in Mount Rogers but was separated by Rankin into its own unit. It is believed to rest unconformably on top of the Mount Rogers Formation and may be possibly significantly younger.( Rankin, 1993) This means that the Konnarock Formation is structurally separate from Mount Rogers Formation. Which means that the Konnarock is likely sitting on the eroded surface of Mount Rogers. The Konnarock formation has a lower contact with Mount Rogers and an upper contact with the Lower Cambrian Unicoi Formation. The nature of the lower (Mount Rogers) and upper contact (Unicoi) of the Konnarock are of importance because of the wide age range between the two formations. With nearly 200 million years between Mount Rogers and Uncoi it leaves some uncertainty of the age of the Konnarock.

The Konnarock Formation was deposited on the North American Craton most likely during a cut short phrase of rifting which preceded continental disjoining and the forming of the Iapetus Ocean. (Miller, 1994) The Konnarock Formation consists of mostly massive and bedded diamictite, graded sets of siltstones, sandstone, and mudstone which forms the rhythmites. It also includes rhythmite with dropstones, massive argillite, arkose, and minor conglomerate. The lower Konnarock is mostly mud, sargillite and fine sand/silt. (Rankin 1993) The rocks are divided into three types: coarse laminates, fine laminates, and massive mudstones. (1994 Miller) The dropstones found are massive unsorted rock consisting of the interlayered sandstone and diamictite.

Evidence of the glacial deposition comes from the presence of thick less structured diamictite, the dropstones, till clasts and pellets in laminated diamicite. The sharp gap between Konnarock and Mount Rogers indicates a large time gap. These constraints allow for Konnarock to have been deposited during an episode of glaciation occurring between 700 and 650 ma. (Rankin 1993) The Konnarock Formation contains the best record of Neoproterozoic glaciation in southeastern North America. Both the Konnarock and Mount Rogers mostly likely accumulated in a rift valley prior to the complete opening of the Iapetus Ocean (Rankin, 1967)

Lithology/Mineralogy

The lower part of the Konnarock Formation contains “fine laminites” which resemble seasonal varves that would have formed in a lake that was periodically frozen. (Miller 1994) The Konnarock Formation consists of mostly massive and bedded diamictite, graded sets of siltstones, sandstone, and mudstone which forms the rhythmite. It also includes rhythmite with dropstones, massive argillite, arkose, and minor conglomerate. The lower Konnarock is mostly mud, sargillite and fine sand/silt. (Rankin 1993) The rocks are divided into three types: coarse laminates, fine laminates, and massive mudstones. (1994 Miller) The dropstones found are composed of mostly Cranberry Gneiss. The upper part of the Konnarock is the massive unsorted rock consisting of the interlayered sandstone and diamictite.