

Geology of subsheets J, K and Q of Bure map sheet (NC 37 - 5)

By Tagel Lemma

ABSTRACT

The study area contains sub sheets eastern half of J (Kupar), K (Shindi) and north of Q (Gomer) of Bure sheet (NC 37-5) and is located in the Amhara National Regional State with in Western Gojam and Awi Zones. In the area Precambrian rocks, Paleozoic sedimentary rocks, Mesozoic sandstone, Cenozoic volcanics and Quaternary covers are found. The Precambrian rocks are divided into layered and intrusive rocks. The layered rocks are in turn divided in to the Suri and Mabil litho-tectonic domains. The Suri domain contains gneisses and migmatites with interlayered amphibolite and subordinate silvers of metasediments. The Mabil domain contains metavolcanics, metagabbro and amphibolites with subordinate metaultramafics and metasediments. The intrusive rocks contain the Gongi intrusive complex and the granitoids. The granitoids are divided in to pre to syn-tectonic granitoids, syn to late- tectonic granitoids and post- tectonic granitoids.

Four phases of deformation are developed with in the Precambrian rock of the area. F_1 folds, gneissosity in the gneisses and schistosity in the metasediments of the Suri domain and layering in the metagabbro and schistosity in the metavolcanics of the Mabil domain represent D_1 deformation. Open to tight F_2 folds in the gneisses and crenulation cleavages in the metavolcanics represent the D_2 deformation. The dextral Bitir shear zone and sinistral strike- slip shear zones that partition the Mabil domain characterize the D_3 deformation. D_4 deformation is represented by brittle dextral strike- slip faults.

The Suri domain grades between the middle to upper amphibolite grade metamorphism where as upper green schist to lower amphibolite grade metamorphism through the epidote- amphibolite facies metamorphism represent the Mabil domain.

The Paleozoic sediments that contain interbedded shale and mudstone, siltstone and glacial beds are correlated with the Edaga Arbi glacial of northern Ethiopia.

The Mesozoic sandstone could be similar with the Adigrat sandstone in the northern Ethiopia.

The Cenozoic volcanics, which are divided in to aphanitic (TV₁), porphyritic (TV₂) and vesicular to scoriaeous olivine phyric basalts (TV₃), are correlated with the Aiba, Alaji and Quaternary Lake Tana basalts respectively.