PETROLOGY, GEOCHEMISTRY AND GEOCHRONOLOGY OF IGNEOUS AND METAMORPHIC ROCKS IN MONG-LONG AREA, SHAN STATE (NORTH)

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ABSTRACT

Mong-Long is situated about 34 km (21 miles) southeast of Mogok. The study area lies between latitudes 22° 45′ 00′′ to 22° 52′ 00′′ and Longitudes 96° 27′ 00′′ to 96° 39′ 00′′ in topographic map number 93B/5 and 93 B/9. The area is approximately 11.2 km from north to south and 17.6 km from east to west, covering about 197.12 square kilometers. Regionally, the study area is a part of the Mong-Long Mica Schist which is adjacent to the Mogok Stone Tract of Iyer (1953) and Mogok Belt of Seale and Ba Than Haq (1964). The regional trend of Mong-Long is roughly northeast to southwest direction. According to the TM image and photogeological interpretation, thrust movements are dominantly found in southeast potion of Mogok gneiss. So, it may be assumed that older Mong-Long mica schist is overlying upon the Mogok gneiss by the thrust contact. The study area is occupied by igneous rocks and metasedimentary rocks. The metasedimentary rocks are mica schist and garnet-biotite gneiss. Tourmaline bearing granite is the major intrusive igneous rock of the study area. Notably two distinct types, regional and dynamic metamorphism played an important role in the entire area. Chlorite is the diagnostic mineral of greenschist facies that is stable about 250°C and 1.6 Kb. Moreover, the diagnostic mineral of sillimanite is stable about 650°C in amphibolites facies. The mineral assemblages are indicative of regional metamorphism which reaches the green schist facies to upper amphibolites facies, the metamorphic grade is possibly low to high grade. Both primary and secondary deposits of gemstones are observed in the study area. As the primary deposits, bi-coloured and black colour tourmalines are found in pegmatite vein and it intrudes between muscovite-biotite-quartz mica schist and tourmaline bearing muscovite biotite granite near *Legyi village*. Beautiful sky-blue colour aquamarine crystals are products from pegmatite which intrude into garnet-biotite gneiss near *Kyauktalon village*. Gold production is the major economy of the study area. Moreover, ruby, sapphire and other precious gemstones are extracted together with gold. Namseka valley is one of the famous ruby deposits in Myanmar and is located about 24 km (15 miles) southwest of Mong-Long. Secondary deposits of gemstones are found in alluvial deposits. The chief gems of the study area are ruby, sapphire and other precious gemstones are spinel, garnet, quartz, zircon, tourmaline, apatite, fluorite, scapolite, fibrolite, topaz, aquamarine, chrysoberyl, chalcedony, agate, phenakite and kornerupine.

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