

OCCURRENCE OF RUBY CORUNDUM BELOW LATERITE PROFILE ASSOCIATED WITH ALTERED META-ULTRAMAFITES AND GNEISSIC CONTACT AT CHANAPARA VILLAGE NEAR MANATHANA, CANNANORE DISTRICT, KERALA by K.T.Vidyadharan, M.M.Nair, R.S.Nair and K.R.Pillay

At Chanapara near Manathana village, below the laterite cover of 5 to 6 m thickness, metaultramafite-gneissic/pegmatite contact indicated a rich zone of pink coloured ruby corundum crystals. These pink corundum crystals are picked by local villagers and are reported to have been sold for Rs.250 to Rs. 900/per kg depending upon the quality and colour of the crystals. These crystals are very small in size (1 cm x 0.5 cm, 1 cm x 0.75 cm) and are invariably altered to micaceous mineral (mainly green chlorite impregnated with ruby corundum) aggregates as seen from an isolated weathered boulder from within the laterite quarry. At Chanapara village

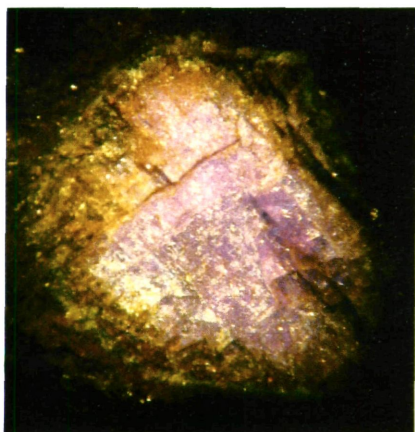


Fig.1. Pink corundum with more of a violet hue shows an alteration rim of corundophyllite (ephesite-margarite). From the metaultramafite-gneiss contact at Chanapara village (49M/3) near Manathana.

(toposheet No:49M/3) a northeast-south-west trending zone hosting corundum crystals have been reported from west of Kanichar from the geological milieu of Wynad Schist belt of Kerala. Similar altered

corundum crystals were recorded from near northwest of Sulthan's Battery area while carrying out investigation for talc-steatite from gneissic contact zones (Vidyadharan, 1982a, b). The rim of the crystals are altered to micaceous minerals like ephesite, margarite or soda margarite. Pink coloured ruby crystals show elongated nature with vitreous luster showing partings. Meta-ultramafite-gneissic/pegmatite zones at several places of Karnataka also are reported to be rich in gem tracts containing ruby corundum. Corundum crystals show alteration rims and patchy development of ruby. The green chlorite rich meta-ultramafite boulder from the laterite quarry which is hard to break, host innumerable pink coloured minute crystals of corundum (corundum plumasite?) varying in size from 1 to 1.5 cm in length and 0.5 to 0.75 cm in width with alteration rims indicating the zone of desilication of granite-pegmatite near a metaultramafite contact (Rossovsky and Konovalevko, 1977). The border zone of meta-ultramafites and intruded pegmatite bodies at Chanapara show a highly altered mass of *plumasite* with notable amounts of dark green chlorite mica and richly developed pink coloured ruby corundum.

Corundum is generally formed as magmatic segregation in quartz-free igneous rocks such as nepheline syenites. Corundum also occurs as a reaction casing between pegmatite dykes and intruded basic igneous rocks by process of desilication of the dyke. In south Africa, USA, North Carolina and in Georgia, south west Palmirs eastern Afganistan where pegmatite dykes intersect ultramafic rocks, desilication results in the formation of corundum. *Corundum plagioclases* result from the transformation of veins of normal quartz-feldspar pegmatites in magnesium rich

rocks by high temperature solution of metamorphic origin under conditions of amphibolite facies involved in the process of diaphoresis which resulted in intense desilication and increase in basicity of feldspars. Though historical background shows that, one century ago richest corundum mine in the world was in Canada at Craigmont, located several kilometers south of Combermere, Ontario in the woody hill country of Raglan and Carlow townships. The present scenario show that notable occurrence include deposits of Burma, Sri Lanka, North Carolina and Montana in USA, many African localities, several localities in India and Middle eastern and south Asian countries.

This zone at Chanapara and Kanichar which represents a classical case of desilication of pegmatite-ultramafite contact rock in *Sargur milieu*, warrants a systematic study to delineate the ruby corundum tract by trenching and sampling and to establish its corundum potential and gem quality with detailed petro-mineralogical and petrochemical studies.

References

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