

Fluorite occurs only in pockets in the dolomite. There are no regular veins or zones which can be traced for some distance. Galena, chalcopyrites, malachite, barytes and calcite are associated. Quartz veins are found quite close to most of the fluorite-bearing pockets. The fluorite of this area is usually pink, but colourless and blue varieties are also present. This colour disappears on heating the mineral. These different varieties of fluorite were tested for fluorescence under ultra-violet light from a mercury vapour lamp. Except one blue variety which showed slight blue fluorescence, the others were non-fluorescent. It was observed, however, that pink fluorite after being decolourized on heating, gives a fairly strong fluorescence when placed in ultra-violet light.

The country close to the lode and the vein materials do not apparently show any sign of shearing in the field but a definite indication of shearing of the minerals has been detected under the microscope. The country rock has been successively replaced by barytes, mica, metalliferous ore-minerals, fluorite and quartz. It is probable that shearing action took place when the ore-minerals were being deposited or before their deposition was complete, that is to say, before the beginning of the fluorite deposition. This is very easily noticed under the microscope, as there is no trace of any shearing phenomena in the fluorite mineral, of the region. The sulphide minerals usually occur as irregular masses scattered at random from the walls to the centre of the pockets. Barytes is a common gangue mineral present in almost all the veins. In some of the fluorite bearing pockets baryte and fluorite form alternating bands and some of the barytes lumps show a coating of fluorite on the surface. Argentiferous galena occurring along the fluorite-bearing pockets is considered as indication of the magmatic origin of the mineralizing materials in this region. Crystallisation of fluorspar is undoubtedly the pneumatolitic phase of the mineralizing magma.

Four prospecting trenches (30' × 12' × 10') have been dug in this area. Out of these four, two are producing galena, and fluorite and one of them contains copper-ore also. The third one produces argentiferous galena and copper ores (melachite and traces of primary sulphide). The fourth one yields melachite incrustations along with the other gangue minerals. In all the trenches the trend of deposits are found to run N.N.W.-S.S.E. In the first trench the galena and fluorite-producing zone is about 3', out of which the western portion produces fluorspar only. Fluorite produced from this pit is generally medium-grained and pink in colour. The yield of fluorite is 20 to 25 per cent. of the rock-body that has been excavated. The second trench produces also fluorite, the pit has been dug about 10' away from the first one along the line of the strike of the lode. The quality produced is good and comparatively bigger crystals are found. The fluorite-producing zone is about 1½' to 2' wide. The percentage of fluorite in the rock-body is about 25 to 30 per cent. of the rock excavated. Hand-picking by breaking the lump rock raised the percentage to nearly 50 per cent. and it is expected that crushing and washing would

increase the concentration of fluorite upto a minimum commercial specification. A more elaborate milling with flgs. and tables followed by a suitable flotation-concentration operation, might further increase the percentage of fluorite to a very high degree. As regards the quantity of material available in this area, it is difficult to say anything definitely at this stage, a further detail prospecting work would prove ore reserve.

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#### OCCURRENCE OF GARNETIFEROUS LEPTYNITE AT MEENAKSHNIPURAM, COCHIN STATE

LATE Mr. K. K. Sen Gupta, in his 1911 report on the Geology of Cochin State, described two garnet-bearing rocks, one along the tramway line between Mudavarichal and Oorukumbankutty and the other at Pothupara. "The rocks of South Travancore are conspicuous by the abundance of garnets present in them, those of North Travancore and Cochin hardly growing any. Sir Thomas Holland discusses the origin and growth of garnets from pyroxenes and their micropegmatite intergrowths in pyroxenic rocks of South India. The total absence of garnetiferous rocks in the State except two exposures, makes it extremely difficult to verify his conclusion."

We have recently found a big quarry of garnetiferous leptynite on the northern side of the road at the western extremity of Meenakshipuram village in Chittur Taluk. This rock exactly resembles the garnetiferous leptynite of South Travancore. It is leucocratic and consists of quartz, felspar and garnet with biotite and magnetite as accessory minerals. The garnet occurs as reddish-brown grains and patches and belongs to the variety, grossularite.

This discovery proves that this rock is not confined to South Travancore. The relations of this rock with the other rocks of the area are being studied.

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#### ASSAY OF THE GROWTH-PROMOTING ACTIVITY OF THE "FATS" ASSOCIATED WITH SOME CEREALS

It has been shown<sup>1,2,3</sup> that the larvæ of the rice moth (*Corcyra cephalonica* Staint) can be employed as a test animal for the biological assay of fat-soluble factors. It was of interest to make a comparative study of the growth-promoting potency of "Fats" from cereals obtained by solvent extraction. Chloroform-extracted jowar constituted the basal diet from which the "whole" diets were reconstituted by enriching the flour with the fat from each of the cereals to the extent of 4.28 per cent.—this being the percentage of "fat" in jowar.

A further comparison of the fats of the cereals was made with a sample of shark liver oil.

Results are tabulated below:—