

A NOTE ON THE DISCOVERY OF MANGANESE MINERALIZATION IN KUMAON HIMALAYA

VINOD C. TEWARI

Wadia Institute of Himalayan Geology, Dehra Dun-248 001

Manganese mineralization has been discovered for the first time from Almora district, Kumaon Lesser Himalaya, India.

The mineralization is found associated with dark reddish brown ferruginous slates in the form of lenses in Gangolihat Dolomite which is the youngest formation of Calc-Zone of Pithoragarh in Almora and Pithoragarh districts (Kumar and Tewari, 1978). The occurrence is about 50 km north of Almora near Jhiroli where magnesite mining is being done. The chemical analysis of ore bearing sample was done for major and trace elements. Manganese oxide varies from 30 to 50 per cent and even more and about 6 per cent Iron oxide is found. The manganiferous shales dominantly contain Pyrolusite mineral. Detailed work is being done with Sri Santosh Pant, geologist at Almora Magnesite Limited which will throw more light on the possibility of large scale reserves and nature of mineralization.

Petrographic studies show that stromatolitic laminations are found associated with iron and manganese minerals. The association of iron and manganese with stromatolitic laminae suggest that algae must have played some role in deposition of these metals. Kumar and Tewari (1978) suggest

a Lower to Middle Riphean (Pre Cambrian) age to Gangolihat Dolomite on the basis of stromatolitic assemblage *Conophyton garganicus*, *Colonnella columnaris* and *Baicalia*. Recently, Tewari (1983) has discovered *Plicatina antiqua*, Rabben 1980 from lower part of Gangolihat Dolomite about 2 Km west of the present area which also suggest a Lower Riphean age. *Conophyton garganicus* is also recorded from the Magnesite deposits of the present area. These stromatolites indicate that blue green algae was flourishing in Gangolihat sea during Riphean times and have played major role in deposition of Magnesite and other metals.

A thorough search for manganese can be done in similar other Pre Cambrian belts of lesser Himalaya.

ACKNOWLEDGEMENTS

The author is thankful to Dr. S. C. D. Sah, Director, Wadia Institute of Himalayan Geology, Dehra Dun for providing field and laboratory facilities. He is also thankful to Dr. V. C. Thakur, Deputy Director, Wadia Institute of Himalayan Geology for encouragement.

REFERENCES

KUMAR, S. and TEWARI, V. C.

- 1978 Occurrence of *Conophyton garganicus* from the Gangolihat Dolomite, Kathpuria Chhina area, district Almora, U.P., Jour. Geol. Soc. India vol. 19, no. 4, pp. 174-178.

TEWARI, VINOD C.

- 1983 On the occurrence of *Plicatina antiqua*, Raaban, 1980, from Kumaon, Himalaya, U. P. Geoscience Journal, vol. 1V, no. 1, pp. 87-89.

Manuscript received : 18-12-82.