

MN-OLIVINE FROM GANGPUR GROUP OF ROCKS, ORISSA by B.K. Mohapatra and B. Nayak. Jour. Geol. Soc. India, v.61,2003, pp.581-587

Samit Bhattacharyya, Geological Survey of India, Marine Wing, DK-6, Salt Lake, Kolkata - 700 091, comments:

A 1% Yrtrres&ng to read \he abwe. papes. Arofttax T2ff variant of Mn-olivine is knebelite which has been reported from the Eastern Ghats by Bhattacharyya et al. (1979), Krishna Rao et al. (1981) and Bhattacharyya (1986). Knebelite, $(\text{Mn, Fe})_2\text{SiO}_4$, occurs in the Eastern Ghats as a product of regional metamorphism of granulite facies. The knebelite bearing manganese silicate-carbonate-oxide rock represents the manganese protore in the manganese belt of the Eastern Ghats, Andhra Pradesh extending over a length of 50 km and width of 20 km between $18^\circ 13' \text{ N}$ to $18^\circ 30' \text{ N}$ and $83^\circ 13' \text{ E}$ to $83^\circ 45' \text{ E}$. These manganese formations comprise knebelite, johannsenite, K-feldspar, celsian, braunite, hausmannite, jacobosite and rhodochrosite. This assemblage is classified under Type MA and is named 'Queluzite'. Thus, the tephroite bearing manganese formations reported from Gangptfr Group of rocks also belongs to the same manganese protore viz., queluzite. It is important to group such rock into the appropriate protore as it represents a particular sedimentation condition and subsequent petrogenetic history. The occurrence of manganite with relict carbonate leavage in the referred paper, is also observed in manganite from Garbham-Garividi areas of Andhra Pradesh as well as Nishikhal area of Koraut District and Bonai-Keonjhar belt of Orissa. This suggests ' decarbonation of rhodochrosite to form manganite. This observation is very significant from the depositional condition point of view. This feature suggests a reducing environment with fluctuation of Eh-pH resulting in carbonate sedimentation contrary to the belief of oxidizing environment of deposition of manganiferous sediments.

Birendra K. Mohapatra, Regional Research Laboratory, Bhubaneswar - 751 013 and **Bibburanjan Nayak**, National Metallurgical Laboratory, Jamshedpur - 831 007, reply:

We wish to convey our thanks to Mr. Samit Bhattacharyya for his keen interest in our paper.

Mr. Bhattacharyya has suggested that the tephroite bearing manganese assemblage of the Gangpur Group ought to have been grouped under Type HIA! In this context it

may be mentioned that the Mn-bearing rock assemblages of Gangpur Group have been classified on the basis of predominant Mn-minerals in the said assemblage and not of \ht, tfovs. oi partkutat sfc&TreTAaion torioAtion. Various authors have classified similar assemblages differently, as there is no conventional rule. For example, Dasgupta et al. (1992) have classified the manganese silicate-carbonate assemblage containing tephroite and jacobosite in the Sausar Group, under Type-4. Further, Mn-carbonate bearing rocks of the Gangpur Group may be analogous to the of 'Queluzite' of Khondalite Group as reported by some authors but not exactly the same. One can distinctly note the variation in mineralogical assemblage between the two domains indicating thereby the difference in bulk composition of these two protores and/or the prevailing metamorphic conditions in these two widely different geological set-ups.

Mr. Bhattacharyya has also remarked on the occurrence of manganite in the said assemblage and the environmental condition thereof i.e. whether, oxidizing or reducing? For a proper understanding of this point, the illustrations given in the said paper (Figs.3.2, 3.4, 3.7 and 3.8) may kindly be referred. The secondary minerals: manganite, cryptomelane and pyrolusite are various alteration products of rhodochrosite. These have formed during supergene oxidation processes and are much later in age than the associated metamorphic minerals (tephroite, pyroxmangite, jacobosite). Therefore, the manganite has no relation to the environment of deposition/sedimentation of Mn-carbonate (rhodochrosite).

For further clarification it may be indicated that the tephroite bearing assemblage in the Gangpur Group has passed through four stages: Sedimentation, Diagenesis, Metamorphism and Supergene enrichment. In each stage, the environmental condition was different. By saying "the tephroite bearing assemblage in the Gangpur Group has evolved through decarbonation-oxidation reaction of a carbonatic precursor" - the authors mean decarbonation-oxidation reactions during prograde metamorphism (Dasgupta et al. 1990) and not the environment of deposition. Therefore, one has to exercise caution in distinguishing and interpreting the environment of sedimentation, diagenesis, metamorphism and supergene processes while describing the petrogenetic history of a mineral assemblage.

References

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ANNOUNCEMENTS

WORKSHOP ON METHODOLOGY FOR SEISMIC MICROZONATION AND ITS APPLICATIONS FOR SOCIETY: This workshop being organised jointly by the Wadia Institute of Himalayan Geology (WIHG), Dehra Dun, Indian Institute of Remote Sensing (IIRS), Dehra Dun and the International Institute for Geoinformation Science and Earth Observation (ITC), Enschede, The Netherlands, is scheduled during 10-11 November, 2003 at WIHG, Dehra Dun. For further details, please contact Dr AK Mahajan, Organizing Secretary and Coordinator, Wadia Institute of Himalayan Geology, 33, GMS Road, Dehra Dun 248 001. **Phone:** 91 135 2624806 (O), 91 135 2625967 (R), **Fax:** 91 135 2625212, **Email:** akmahajan@rediffmail.com

WORKSHOP ON CURRENT TRENDS IN RESEARCH ON QUATERNARY SEA LEVEL CHANGES: This UGC sponsored workshop will be held at the Department of Geology, National College, Tiruchirappalli - 620 001 during 5-6 December 2003. Research scholars and teachers who are working on Quaternary sea level changes can attend the programme. Papers are also invited for presentation. For further details, please contact Dr K Anbarasu, Reader, Department of Geology and Workshop Coordinator, National College, Tiruchirappalli - 620001, Tamil Nadu. **Phone:** 0431-2418437 (R), **Email:** anbarasu_gk@yahoo.com

WINTER SCHOOL ON SEDIMENTARY FACIES AND BASIN ANALYSIS: The Second Winter School on Sedimentary Facies and Basin Analysis sponsored by the Department of Science and Technology will be held at the Department of Earth Sciences, IIT, Bombay from 17 November to 7 December, 2003. For further details, please contact Prof. P K Saraswati, Department of Earth Sciences, IIT, Bombay, Powai, Mumbai - 400 076. **Phone:** 022-25767268, 25767251, **Fax:** 022-25767253, **Email:** pratul@utb.ac.in. Details of the Winter School can also be viewed at the website <http://www.geos.utb.ac.in/dstschool>

CONFERENCE ON ANTHROPOLOGY, ARCHAEOLOGY, HISTORY AND CULTURAL HERITAGE OF PENINSULAR INDIA: This conference is scheduled to be held during 19-22 December, 2003, at the Department of Archaeology, S V University, Tirupati, Andhra Pradesh. This event will coincide with the Joint Annual Conference of the Indian Archaeological Society (IAS), Indian Society for Prehistoric and Quaternary Studies (ISPQS) and Indian History and Culture Society (IHCS). For further details, please contact Prof. Jacob S. Jaya Raj, Organising Secretary, Dept of Anthropology, Sri Venkateswara University, Tirupati - 517 502, Andhra Pradesh, **Phone:** 0877-2248852 (O), 2249666 Ext 263 (Dept), 2248626 (R), **Email:** jac2003svu@rediffmail.com, profjacobsk@yahoo.co.in

IGC SILVER JUBILEE AWARDS: The Indian Geological Congress (IGC) has instituted several cash awards for the Poster Sessions in connection with the National Conference on Natural Hazards and the 13th Convention of the IGC scheduled to be held at Dehra Dun during 26-28 December 2003. Further details may be obtained from Dr AK Mahajan, Secretary/IGC, Wadia Institute of Himalayan Geology, 33, GMS Road, Dehra Dun-248 001, **Email:** akmahajan@rediffmail.com

IV INTERNATIONAL CONGRESS ON MICROPALAEONTOLOGY, MICROBIOLOGY AND MEIOBENTHOLOGY, ISEMMM - 2004: This conference is scheduled to be held during 6-11 September, 2004 at the Suleyman Demirel University, Isparta, Turkey. Full details of the conference may be accessed from the website www.isemmm.org, www.geo.sdu.edu.tr. For additional details, please contact Dr PK Kathal, Vice-President, Inter Soc of Micropal Microbio and Meioben, (ISEMMM), CAS in Geology, Dr H S G University, Sagar - 470 003, **Email:** kathal_sgr@sancharnet.in, pkkathal@rediffmail.com