

BOOK REVIEWS

GRANULITES OF INDIA, SRI LANKA AND ANTARCTICA, (1995), Memoir No. 1, Eds. M. Yoshida and M. Santosh, pp.355, Price: Rs.500/- (50% concession to IGAR members); Foreign : US \$ 50.

INDIA AS A FRAGMENT OF EAST GONDWANA, (1995) Memoir No.2, Eds. M. Yoshida, M. Santosh and A.T. Rao, pp.241, Price: Rs.400/- (50% concession to IGAR members); Foreign : US \$ 40.

Published by *Gondwana Research Group*, Faculty of Science, Osaka City University, Sugimoto-33-138, Sumiyashi-ku Osaka 558, Japan.

The Collaboration between India and Japan for carrying out studies in East Gondwana, with special focus on India, is a welcome development in recent years. These joint studies have already resulted in a rich harvest of research contributions which form the subject of a recently issued Memoir of the Geological Society of India (Memoir No.34, *India and Antarctica during the Precambrian*). Closely following this volume have appeared two other volumes brought out by the Gondwana Research Group entitled "*Granulites of India, Srilanka and Antarctica*" and "*India as a Fragment of East Gondwana*". The first of these includes research contributions published in recent years in different journals. The subject matter of the papers is mainly focused on geology, structure, fluids, geochronology and palaeomagnetism.

The second memoir running to 241 pages contains as many as 16 articles, containing good reviews on aspects like geochronology, tectonics, geology, geochemistry, metamorphism of rock formations specially of South India. The second volume, edited by Yoshida, Santosh and Rao is very well produced with an excellent get up and is full of well drawn illustrations.

Of particular interest to those working in South India is the recognition of three reworking events at 2.5, 1.0 and 0.5 Ga corresponding to Late Archaean-Early Proterozoic, Mesoproterozoic and Neo-proterozoic respectively. Of these the 2.5 Ga event is the major one which has greatly affected the cratonic terrain through increased granitic activity. Geochronological and structural studies are making it more and more clear that the Southern Indian Shield is formed of different crustal blocks which have accreted together at different periods in geological history. Dayal has produced new isotopic ages of mafic dyke swarms in Dharwar Craton which cluster round 2400 Ma, 1800 Ma and 400 Ma. Youngest Re-Os ages of 557 ± 28 Ma for molybdenite of Kerala defines a Pan-African metallogenic event in the region.

In another set of papers, the sediment disposal pattern in the Chintalputti sub-basin of the Godavari graben is described. The source rocks for the sediments are indicated to be the high-grade metamorphic complex lying to the SE. A NW palaeo-current direction has been inferred. This raises important questions about the placement of South India in East Gondwanaland.

Geochemistry of Gundlupet gneisses of south Karnataka indicate extensive reworking around 2.5 Ga.

Charnockitic rocks from a few localities in Eastern Ghats; mineral chemistry of a new occurrence of sapphirine from near Madhuravada, also in the Eastern Ghats; feldspar thermometry for leptynites of Kondavidu; fluid inclusion studies of wollastonite from the Kerala Khondalite Belt are some of the other aspects covered.

On the mineralisation side, the comparative study of graphite from South India, Sri Lanka and Madagascar is of interest, pointing to a large Precambrian Basin extending from Madagascar through South India and Sri Lanka. The last of the papers in this section refers to the occurrence of gold in laterite of Gondwana terrains. The occurrence of dust and nuggets of gold chemically different from gold in vein quartz are described. The purity of

the nuggets in laterite is stated to be as much as 99.93% Au. Incidentally these appear to be the purest form of naturally occurring gold reported from any other part of the world. It is obvious that more attention has to be paid to the exploration of such pure gold occurrences in the laterites of Wynad.

The last section in the volume is devoted to environmental aspects specially mercury pollution prevalent in Wynad.

The two Memoirs of the Gondwana Research Group are heavily loaded with contributions of the two authors who are also the Editors. This is not a good example for such edited volumes. But for this excusable slip, the volumes are good contributions to our knowledge of the high-grade rocks of South India containing a wealth of new information. We have nothing but admiration for the excellent get up of the publication and the quality of its illustrations. We look forward to further contributions from this research group.

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HANDBOOK ON MINERAL DRESSING (1995), by H.G. Vijayendra, Vikas Publishing House, 576, Masjid Road, New Delhi - 110 614, 260p. Rs.85/-

While complimenting Sri Vijayendra on a maiden attempt to produce an indigenous Handbook on Mineral Dressing, the book has a number of shortcomings which would be met in any future edition.

Although designated as a 'Handbook', the publication is largely theoretical and could be more appropriately titled 'An Introduction to Mineral Dressing'. Its utility from the practical aspect of ore dressing is limited although as a reference book for students and others in search of appropriate formulae, it is adequate.

The coverage of certain areas is incomplete. For example the section on comminution omits any reference to rod mills, vertical mills and semi-autogenous mills. It is stated (p.65) that 'mills of larger diameter are not possible in view of breakability of pebbles', whereas autogenous and semiautogenous mills of large diameter but short length have been developed which overcome this problem by removing the necessity for pebbles as grinding media.

There is no mention in the same section of the effect on grinding efficiency of the type of liners used in ball and other mills. The improvement in cascading effect by the use of wave form liners or lifter bars is ignored and this aspect of grinding dismissed (p.55) with the statement 'less rougher the mill lining the less is the slip'. This is hardly a serious approach to one of the major aspects of grinding.

In the section on Gravity Concentration dealing with tables of various types, recent developments in drum separators, which are basically extended tables, such as the Bartley-Moseley drums and Johanson barrels, are not mentioned.

Spiral classifiers such as the Humphreys are only mentioned in the section on coal dressing, as separators, although this type of classifier finds wide use on other minerals.

The Knelson and other types of centrifugal concentrators, now widely used, particularly in the cleaning of concentrates, find no mention.

A number of typographical errors exist, e.g. p.137, para 4, line 3, 'tackled' should read 'tacked'. On p.147, para 2, line 5, 'riffler is' should read 'riffles are'. On p.148, problem 2, identification of delta sign is missing etc.

Apart from the simple basic diagrams the illustrations are of poor quality, apparently being reproductions of the author's note-book sketches.

Despite the above failings the book provides a basic introduction to a fairly wide spectrum of mineral dressing.

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