

## GEOLOGICAL EVOLUTION OF THE EARTH DURING THE PRECAMBRIAN:

L. J. Salop, Springer-Verlag, Berlin and New York, 1983, Figures 78, pp. 459.

Precambrian crust was the dreaded *terra incognita* until recently, but the tremendous information explosion in geochemistry, geochronology and planetology has made the early history of the earth a fascinating and fashionable field of study. Several recent volumes on Precambrian crustal evolution have already adorned the shelves of earth science libraries, and the present volume is a welcome addition.

In this new book Prof. Salop has retained the main framework of his previous work 'Precambrian of the Northern Hemisphere' published in 1977 by Elsevier. He has added descriptions from the Southern Hemisphere and updated the introductory and concluding chapters on general principles and contemporary developments.

The methods and principles of Precambrian Division are presented only briefly. His 'global stratigraphic scheme' of the Precambrian into Katarchaeon, Palaeoprotozoic, Mesoprotozoic, Neoprotozoic, Epiprotozoic and Eocambrian has remained as a local scheme (known popularly as the Russian classification) despite long years of advocacy. Several such schemes are known from other parts of the world, but a consensus is possible only through bodies like IUGS Commission on stratigraphy. Professor Salop's nomenclature for global diastrophic cycles like Saamian, Kenoran, Karelian, Grenvillian, Katangan, Vendian etc. have even slimmer chances of international acceptance.

Chapters 2 to 7 deal systematically with descriptions of global Precambrian terrains from Katarchaeon to Eocambrian, and outline the general geological characteristics of each era. The author's Katarchaeon (> 3500 m.y.) encompasses the gneiss-granulite complexes of the Archaean Shields as the oldest crustal remnants. His contention that the granulite facies terrains are the oldest, including the Grenville of Canada is controversial. He has, however, included the Isua Supracrustals of Greenland, although of lower metamorphic grade, in the Katarchaeon as an exception to the general rule. Prof. Salop's Palaeoprotozoic (3500 - 2600 m.y.) corresponds to Archaean of the Western geoscientists and includes the greenstone belts of the world such as the older greenstones of Barberton and Pilbara and younger greenstones of Canada and Australia. The Mesoprotozoic (2600 - 1900 m.y.) covers the Lower Proterozoic basins and geosynclines of the world, such as the Witwatersrand Triad of Africa, Huronian of Canada, Minas Supergroup of Brazil, Hamersley basin of Australia and the Dharwar Supergroup of southern India. As in the case of other global Precambrian volumes, Indian Precambrian gets a raw deal. There are sketchy and, sometimes misleading, accounts of 'Hindustan Peninsula'. The Neoprotozoic (1900 - 1000 m.y.) includes the Riphean of Russia, Whitewater and Kimberley Groups of Australia, Waterberg Group of Africa as well as the Cuddapah and Vindhyan Supergroups of India, representing mid-Proterozoic sedimentary basins. The Epiprotozoic (1000 - 650 m.y.) encompasses the late Proterozoic basins of the world. The Eocambrian (650 - 570 m.y.) has transitional characteristics between Precambrian and Phanerozoic and is represented by several younger platformal basins of the world. No Indian examples are, however, described.

The only major advantage of this book is the global chronostratigraphic framework into which the little known Russian Precambrian is pigeonholed. The text is readable with occasional uncommon words and spellings like structural-facial, sheet-cutting, paraliageosynclines, geochrone, planetosomal, astroblem etc. The illustrations are well reproduced. The reference list, subject index, and local stratigraphic index are very useful. Reference to literature outside Russian is limited to publications upto 1978 (although the original Russian version was published in 1982) with the result it is fast becoming obsolete even at the time of publication in 1983, especially when many up-to-date volumes on global Precambrian have already been released by Elsevier. There is no mention of Sm-Nd geochronology in the book and even the

Rb-Sr framework is incomplete. In these days of hectic modelling exercises, this book has nothing new to offer, and even the geological synthesis is not up-to-date. The author is among the 'small vociferous minority of "steady state" enthusiasts' (to borrow the phrase of S. Moorbath) espousing the view of early differentiation of thin global sial from which he derives the 'cherty' quartzites in Katarchaeon gneiss-granulite complexes. Precambrian plate tectonics is also left out of serious discussion in a book devoted to geological evolution. In spite of these shortcomings, this book provides insight into Russian Precambrian geology in a global setting and is a useful addition to earth science libraries.

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LOWER DEVONIAN CONODONTS (*hesperius-kindlei* ZONES), CENTRAL NEVADA  
by Michael A. Murphy and Jonathan C. Matti, University of California, Publications in  
Geological Sciences, Vol. 123, (1982), pp. 82.

Conodonts constitute one of the most important group of organisms in the Palaeozoic and Triassic rocks exposed in different parts of the world. In spite of their disputed systematic position they have provided very useful tool for biostratigraphic classification.

The publication under review concerns detailed study of conodont faunas from three sections (Coal Canyon in the northern Simpson Park Range, Copengagen Canyon in Monitor Range and Mill Canyon in the Toquima Range) of lower half of the Lower Devonian in Central Nevada and provides an enlarged taxonomic base for biostratigraphic studies of the Cordilleran region. The authors have described in detail one new genus and nine species from rocks in the interval *hesperius* Zone through the *kindlei* Zone. In addition, the present publication documents the evolutionary history of some taxa, particularly in the lineages in the genera *Amydrotaxis*, *Ancrydelloides* and *Icriodus*. A new genus, *Erika*, with divergent denticles and barlike elements has been described for the Nevada species, *Erika divarica*. This new genus has been very well documented with detailed description and good illustrations. Occurrence data for different conodont species from the three stratigraphic sections has been documented in Tables 1-3.

The publication is supplemented by an exhaustive bibliography on Lower Devonian conodonts. Plates 1 to 8 illustrate all the conodont species described in the publication. The plates are of very good quality and these would prove extremely useful for specialists working on Devonian Conodonts in different parts of the world.

The publication is an asset for Devonian Conodont specialists and will be a useful addition to libraries.

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