

THE VENDIAN SYSTEM (Vol. 2 : Regional Geology) B. S. Sokolov and M. A. Fedonkin (Eds.). [English translation of (1985) Russian edition by T. I. Vasiljeva, R. J. Sorkina and R. V. Fursenko]. Springer-Verlag (1990). pp. 1-273. Price DM 238.

This is the second part of a two-volume compilation of the latest information on the Vendian System from the U.S.S.R. Spanning the critical 60–80 million years at the end of the Precambrian, the Vendian System is particularly important. Its age limits of 650 ± 10 Ma and 560 ± 10 Ma correspond almost exactly with the boundaries of the 'Terminal Proterozoic/Neoproterozoic III' proposed in the ICS : IUGS Global Stratigraphic Chart (1989 : *Episodes*, Vol. 12 (2)). The publication of the present English version of the extensive geological data on one of the strong contenders for the Stratotype of this System is extremely timely and significant.

The volume is divided into eight chapters. E. M. Aksenov presents a broad perspective of the Vendian occupying almost 2 million sq. km in the East European Platform in the first chapter, with references to the exposure patterns and subsurface extensions, lithological successions, structural features and correlations of these exposures. An interesting series of palaeogeographic reconstructions during the various parts of the Vendian is also included. V. A. Velikanov has given a detailed picture of the Podolia section in the southern parts of this region in the second chapter. This is described as the 'type / key' succession for the Vendian System, particularly with reference to the East European Platform. The 3rd chapter by A. F. Stankovsky, J. M. Verichev and I. P. Dobeiko contains data on Vendian exposures in the northern part of this region in the White Sea area. Geology and correlation of the Vendian rocks in the Ural mountains is compiled by Yu. R. Becker in chapter 4. Several disjointed exposures in the Siberian subcontinent (mostly along its southern parts) are described and correlated in the 5th chapter by U. V. Khomentovsky. These include the Vendian deposits of the famous Yudoma Complex. Next is a compilation by B. M. Keller and M. A. Semikhatov of the available geochronological information on the Vendian System of the Soviet Union, parts of which have been discussed individually in the preceeding chapters. It concludes with the recognition of the duration and age-span of the Vendian System on the basis of isotopic data. Chapter 7 is devoted to the glacial record in the disparate Vendian terranes. N. M. Chumakov discusses the presence of 4 (or more) glaciogenic horizons in this System and has shown that the Laplandian horizon is the most widespread. The historical background and geochronological information *vis-a-vis* the biotic contents of the Vendian System are discussed by B. S. Sokolov in the concluding chapter. The documentation of the rich record of metazoa, achritarchs, trace fossils and other diverse forms of life preserved in these rocks (elaborated in Vol. 1 : Palaeontology) and the well-defined lithological and geochronological boundaries of this System are used in support of recognition of the Vendian as the representative of the Terminal Precambrian period of Earth's history.

While reading this volume, it is necessary to discount some apparently self-contradictory statements which have resulted due to the original Russian idiom being preserved in the translated phraseology. Allowance also has to be made for the stratigraphic nomenclature and lithological terminology, which is slightly different from the Indian and International versions.

This compilation is unique because it makes available a vast amount of updated basic geological data of an important sequence of rocks from a very critical period of the geological past. For Indian geologists who are concerned with the Late Precambrian rocks in the Himalayan terranes or in the Purana basins, it is an invaluable reference book and provides several significant and comparable situations which could be tested in the Indian context.

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THE APPALACHIAN—OUACHITA OROGEN IN THE UNITED STATES.

Edited by R. D. Hatcher, Jr., W. A. Thomas and G. W. Viele, Published by the Geological Society of America, Boulder, Colorado, USA, 1989, 769 pp. 12 plates.

Geological Society of America launched its 'Geology of North America' series to mark its centennial, as a part of the Decade of North American Geology (DNAG) Project, which is the first-ever integrated effort to provide the state-of-the-art on the geology and geophysics of North America. The volume F-2 of this series deals with the fascinating Appalachian-Ouachita Mountains. This bulky volume along with its companion slipcase containing 12 magnificent maps represents a great slice of the North American earth science epic. This 'most elegant' Palaeozoic orogen 'which humbles a man' has been a cradle for many a geological thought, from the ancient geosynclinal hypothesis of Dana and Hall to the modern plate tectonic paradigm involving thin-skinned thrusts and accretionary terranes.

Hatcher Jr. briefly introduces the orogen along with an index map and an orogenic time table. Repeated Wilson cycles in this orogen are sequentially described in the chapters on the Pre-orogenic terranes, Taconic, Acadian and Alleghanian orogenies and post-Palaeozoic activity from several tectonic domains of the orogen. Chapters on palaeontologic and palaeogeographic reconstructions, geomorphology, geophysics, thermal evolution (based on Ar-Ar geochronology), mineral deposits and energy resources deal with the multi-theme data base of this glorious orogen. Tectonic synthesis by Hatcher Jr. concludes the gripping history of the Appalachians. A similar pattern of treatment is given to the equally important Ouachita orogen, where the special emphasis is on litho- and bio-stratigraphy, sedimentology and structural evolution. There are also chapters on geophysical overview and mineral potential as well as a short epilogue. The concise descriptions, perceptive interpretations, well-drafted text figures and large-size maps are hallmarks of this publication. The great ideas and 'acrimonious controversies' discussed in this volume will find useful application in comparable terrains.

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