Book Reviews


This Professional Paper is a revised and updated version of the United States Geological Survey Bulletin No. 1228 (1967). The original title of the Bulletin ‘Bauxite Reserves and Potential of Aluminium resources of the World’ is aptly modified now as ‘World Bauxite Resources’ commensurate with the contents included in it. There is a significant spurt in World Bauxite Resources during the span of two decades between 1967 and 1987. The revised version is, therefore, timely.

The distribution of bauxite resources in the World, both in time and space, inter-alia their uses, exploration and assessment, mining methods, processing techniques, byproduct recovery and finally the position of United States vis-a-vis world bauxite production are all incorporated, succinctly, in the ‘Introduction’ Neutron activation probe for semi quantitative determination of aluminium and other elements and a computerised method for organising the results of mineral identification by X-ray diffraction and X-ray emission methods, are gaining momentum. In the mining methods, it is interesting to note that stripping ratios as high as 10 m of overburden to 1 m of ore are being practised.

The classification of bauxite deposits, mineralogy, trace elements, physical characteristics, origin, age and mineralogical and geographical distribution are the aspects covered in the next chapter entitled ‘Geology of Bauxite’. The difficulty of accommodating some deposits, especially the transported ones into the two-fold classification of lateritic and karstic types or carbonate and silicate types, and the consequential necessity for a classification based on shape and occurrence of the deposits are discussed. The deposits may be grouped under blanket, interlayered and pocket types.

Evidence in favour of gibbsite forming at surface temperatures, insolation providing energy to convert gibbsite into boehmite, removal of iron by organic complexing during bauxite formation and the formation of gibbsite during Holocene times in peaty swamps etc arc some of the interesting points highlighted. ‘The difficulty in understanding the origin of bauxite minerals stems from their occurrence in so many different environments’ is the conclusion that continues to be valid.

The most significant point that merits special mention from the Indian viewpoint is the inclusion, of the Indian bauxite deposits, under Quaternary age (Holocene and Pleistocene) in Table-X titled ‘General Age Relations of World Bauxite’. Hitherto the Indian Bauxite used to be assigned a Tertiary age by several authors.

A brief geological background and the resources position of all countries has been given continent-wise. A bauxite deposit occurring under gypsum layer has been declared a national reserve by the Mexican government. A maximum of 80 m thick bauxite horizon has been identified in the Dominican Republic. This is the type of meaningful data that is included in these descriptions and discussions.

The major world bauxite resources are in Africa, Australia, South America and the Caribbean region, and significant deposits are present in Asia and Europe. It
seems continents with over 2000 million tons of resources are grouped under the major category. India (1000 million tons) is ranked fifth in the world bauxite resources position. Guinea with 5,600 million tons ranks first followed by Australia (4,440 million tons), Brazil (2,250 million tons) and Jamaica (2000 million tons). Strictly speaking, India should rank third or fourth because its resource position has crossed 2000 million tons in the year 1977 itself. Subsequently quite a good number of deposits with sizeable reserve have been identified by the Geological Survey of India, particularly in the east coast region.

This professional paper is an excellent document giving the state-of-art on the several facets of bauxite, both academic and economic, in a nutshell. This should be of immense use for the researchers pursuing problems on bauxite and attempting correlations with the several deposits in the world, teachers teaching economic geology, earth scientists engaged in bauxite exploration, and Mining and process engineers. The U. S. G. S. in general and Sam H. Patterson in particular, deserves all praise for bringing out such a useful volume at the right time.

Hyderabad

P. K. RAMAM

GEOLOGY AND MINERAL RESOURCES OF ANDHRA PRADESH. By N. V. B. S. Dutt. Third Edition. Published by Natural Resources Development Cooperative Society (N.R.D.C.S.) Hyderabad, 432 pages, 41 tables, 6 text figures and 6 maps.

This is the third thoroughly revised and enlarged edition of the book 'Geology of the Andhra Pradesh' by the same author, published few years ago. Review of the first and second editions of the book have appeared in the Journal of the Geological Society of India, volume 17 (1), page 127, and volume 23 (4), page 205. The first edition had only 94 pages and 2 tables as against 432 pages and 41 tables in the present revised edition which is indicative of the extent of additional information contained in the present edition. List of references is more exhaustive with 508 entries. Additional matter includes detailed discussion of the stratigraphy and tectonic evolution of Peninsular India and Mineral Resources of Andhra Pradesh. Valuable information has been summarised in a large number of Tables which should prove useful to students. The printing is clear and legible. The reproduction of photographs is, however, far from satisfactory. Text books intended for students should aim at better presentation.

The student edition is priced at Rs. 60/- and, in these days of soaring prices, should attract many students of Geology to possess their own copy. A considerable amount of geological information will be in their possession.

B. P. RADHAKRISHNA