

bismuthinite, arsenopyrite, polybasite, galena, smaltite, niccolite, marcasite and sphalerite, and at Schneeberg, Saxony by pitchblende, smaltite, rammelsbergite, safflorite, tetrahedrite, emplectite, maucherite, niccolite, pararammelsbergite, pyrite, lepidocrocite, Ag-minerals, Bi-minerals and cosalite. Despite the differences in the mineralogy, the geochemical element affiliations run parallel in both the deposits. The role of Mo, Se and Sn in hydrothermal pitchblende paragenesis is also dealt with in this chapter. The textural relationship of pitchblende with other ore minerals and the colloidal and gel structures are dealt with in detail and well illustrated, leading to the important conclusion that colloidal and crystalline processes can operate simultaneously as well as in succession depending on the physico-chemical milieu of deposition. Chapter D is devoted to uraninite and U-containing pegmatitic mineral parageneses. Emphasis is laid here on the characteristic geochemical elemental association of U, Th, Y, Zr, Hf, Nb, Ta, Ti and REE in the pegmatitic mineral parageneses. Ore micro-scopic and textural features of uraninite with zircon, uraninite with columbite and davidite are dealt with in this chapter. Chapter E is devoted to the geochemical studies on the alteration and weathering of uranium minerals (e.g. differential leaching of elements) followed by Chapter F on chemical and geochemical considerations of the metallic elements present in primary uranium parageneses.

Appendix A is a very useful compilation of the ore minerals noted in the polished sections examined from several important U-bearing hydrothermal and pegmatitic occurrences, primarily in Europe and some from Canada,

USA and Africa. The deposits include Joachimsthal and Příbram (erstwhile-CSSR); Johanngeorgenstadt, Saxony, Germany, St. Stephens, Cornwall, UK, Great Bear Lake, NW Territory, Canada, Wölsendorf, Bavaria, Germany; Wittichen, Baden, Germany; Eisleben, Harz, Germany; Beaverlodge Lake, Saskatchewan, Canada, Shinkolobwe, Katanga and Happy Jack, White Canyon, SE Utah, USA. Appendix B enumerates examples of uranium parageneses in USSR (after A.I. Tishkin), in Erzgebirge, Germany (after Leutwein); in the Great Bear Lake area (after Kidd and Haycock) and in the Swambo, Kalongwe and Shinkolobwe U-deposits (after Derriks and Oosterbosch).

At a time when the traditional petrography and ore microscopy are being neglected in favour of geochemical and isotopic data generated by sophisticated equipments, it is refreshing to see the emphasis laid on the microscopic/textural features of U-bearing minerals and their intergrowths with others, and the rewarding conclusions that can be drawn from such studies. The quality of reproduction of the photomicrographs could have been better in a publication devoted to ore-textures. A more rigorous classification of the contents presented in terms of ore microscopic observations and geochemistry and a little more effort in smoothening the inevitable continental/translated vocabulary in the English language would have made the publication more readable, but does not in anyway diminish the value of the data presented.

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## OBITUARY

**N.V.B.S. Dutt**  
(1922-2000)

Nadimpalli Venkata Balasubrahmanya Dutt was born on 1st July, 1922 in Guntur district, Andhra Pradesh. He graduated from Banaras Hindu University, obtained BSc. (Hons.) degree from Andhra University and MSc. degree from the University of Mysore. Dutt joined the Geological Survey of India in September 1946 and retired as Director in June 1980. His major contributions are in the field of geological mapping of the "Purana" basins of Andhra Pradesh and Madhya Pradesh. The sediments of the basin near Jagdalpur were classified by him as Indravati Series.

Special mention made of his book on Geology and Mineral Resources of Andhra Pradesh which was published by the Andhra Pradesh Academy of Sciences. He published several articles in English and Telugu on matters related to geology, industrial development, language, culture and ancient history. In the later part of his life, he became a convert to Islam and was known by the name of Muhammad Ismail. In his death on 13 July 2000, earth science community has lost a well known geologist and a well known author.