BOOK REVIEW

SOIL RESOURCES AND THE ENVIRONMENT by U. Aswathanarayana, Oxford and IBH Publishers Pvt. Ltd., 66, Janpath, New Delhi 110 001, 1999, xix+248p., Price: Rs.550.

The nomadic man, like other living things, was a part of our landscape, may be about 50 thousand years ago. Land, in its broadest connotation, includes arable land and forests, with their rich variety of micro- and macro-flora and fauna, rocks and minerals, mountains, rivers and lakes. The amazing array of marine, plant and animal life is governed by atmosphere-hydrosphere interaction and climate. Man, endowed with ingenuity for observation of things around him, settled to agriculture in his quest for security. He started with cultivation of the loose mantle of earth's crust so as to create a suitable medium for providing anchorage as well as moisture and nutrition to the crops. The exclusive study or understanding of this bio-dynamic layer of earth or soil as a medium for plant growth that came into existence as a result of action of climatic forces on the parent rock is called by the name of Edophology, which has assumed importance from the 1930s. As the author rightly says in his preface, the guiding perspective of his book is to present the current state of knowledge on soil as a major factor in eco-system, with focus on its use in an environmentally sustainable manner. This will ultimately result in maximum production of food, fibre and other needs for the continued improvement of quality of life for the teeming millions of people.

There are 10 chapters in the book dealing with soil as a resource to sustain human civilisation, dynamics of soil process and soil environment, soil nutrients and use as fertilizers, soil degradation, effect of climate on soil, irrigation engineering use, contamination, geochemistry and health, and economic minerals. Dealing with pedogenic factors, the author points out that agricultural land with high productivity is as low as 3 percent of the land area.

In the context of burgeoning population and increasing demand for food and fibre, the need to enhance agricultural production has become imperative. Whipped up or extractive production, without due regard to bio-physico-chemical capabilities of the soil, leads ultimately to a barren desert. The principal form of land use in the past century or so has been agricultural, along with sizeable proportion of engineering and urban demands. There is a need for a conscious accent on rational limits to these, so as to preserve the areas under pristine forests with its rich biodiversity and to ensure the ever wholesome environment for us now and for the posterity.

The author, an experienced geologist of repute, has presented geo-environmental aspects of soil, besides chemistry, biochemistry, soil fertility and soil nutrients, soil-plant-water relationship and impact of fertilizer and other chemicals on the soil. The presentation is profusely backed by extensive scientific data from different soil climatic situations of the world. Discussing the irrigation practices, the author commends education of farmers on soil-plant-water relationships to achieve maximum efficiency in water use, particularly in the context of water becoming an increasingly scarce resource. The role of soil engineering in soil contamination arising out of agriculture and industry and adverse effects caused by transport, electricity generation, acid rain, heavy metals from industrial wastes and their impact on environment have been dealt with in detail. The discussion on pedo-medical considerations such as deficiency or excess of soil and minerals and their pathways to human beings is interesting.

The appendix containing explanation of symbols and equations, references as well as author and subject indices is appropriate and useful. The book is a valuable reference source to those

pursuing advanced studies and research in the area of soil science and agronomy. The author deserves our grateful appreciation for his efforts to gather enormous data, providing insights into the nature of soil geology and pedology and their impact on environment.

In this brief review on "Soil Resources and Environment", it may be pertinent to add a few more ideas on agroforestry, which the author has mentioned in passing under "Climatic Change Impact on Soils" in relation to cropping in semi-arid and arid areas. In the past one to two decades, there has been considerable interest in agroforestry as a land use or agriculture system suitable for developing countries, where millions of farmers subsist on small land holdings which are as small as 0-20 ha in size. The agroforestry system of land use envisages compatible plantations and crops, giving fodder, firewood, small timber and green manure including economic tree products, integrated with food and cash crops on unused farm sites like bunds, borders, boundaries, corners and counter lines. These contribute to admirable soil and water conservation and on-the-farm animal and associated activity, generating year-round work and income for the farmer, besides providing lush-green cover to the country side. More important is the reduction of pressure on forests which is the crux of the endangered environment. Agroforestry as a movement offers immense possibilities for an integrated development of land, people and environment in the millennium ahead.

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ANNOUNCEMENT

A National Seminar on Coastal Evolution Processes and Products, along with XVII Convention of Indian Association of Sedimentologists will be held at the Department of Marine Geology and Geophysics, Lakeside Campus, Cochin University of Science and Technology, Kochi on 17-20 October, 2000. The themes covered by the seminar include coastal geomorphology, coastal evolution, human modification of coasts, and techniques and tools. The IAS convention will cover papers on the focal themes of sedimentation in space and time. Abstracts not exceeding 500 words should reach the Convenor on or before 31 July 2000. Registration fees are Rs.700 for participants, Rs.400 for accompanying members, Rs.400 for students and US$ 100 for foreign participants. Field trips will be arranged on 19 and 20 October 2000 for which the fees are Rs.600 (Indian delegates) and US$100 (foreign delegates).

Young Sedimentologist Award will be given to IAS member below 35 years of age as on 1 July 2000, on the basis of selection from single authored original research papers. Nominations for the award should reach the Convenor on or before 14 August 2000.

For further particulars, please contact Prof. P. Seralathan, Convenor, National Seminar and IAS Convention, Department of Geology and Geophysics, Cochin University of Science and Technology, Fine Arts Avenue, Kochi - 682 016, Kerala. **Phone:** 0484-366478 (Office); **Fax:** 0484-374164; **Email:** pseran@yahoo.com.