BOOK REVIEWS

A manual of Freshwater Aquaculture by R. Santhanam, N. Sukumaran and P. Natarajan (Published by Oxford and IBH Publishing Co., 66, Janpath, New Delhi 110 001), 1987, pp. 193, Price: Rs. 60/-.

Yield from natural aquatic animal resources appears to be approaching an upper limit at least in the forseeable future. Hence, recently, more and more interest has been focussed on controlled farming of aquatic animals or aquaculture. Although there are several inherent biological, technological and socio-economic problems associated with aquaculture, the potential for substantially increased production through this means, is encouraging. With adequate efforts it is certain that the ultimate objective of creating a significant aquatic food producing industry analogous to agriculture, with a reasonably predictable and controlable yield, can be foreseen. This has naturally led to the publication of a number of reference/text books on aquaculture, during the last two decades, most of which either include information pertaining to temperate regions of exclusively project aspects of finfish culture. A need has long been felt for a comprehensive manual on aquaculture, particularly projecting the aspects of freshwater aquaculture techniques practiced in the Indian subcontinent. From this point of view, it is gratifying to read this manual which is well written and up-to-date in its contents.

The book includes 19 useful chapters ranging from an analysis of different aquaculture practices to fish diseases and their control. The wide treatment to the subject of aquaculture is evident from the information included not only on finfishes but also on prawns and frogs. A useful dimension has also been added to the subject by the inclusion of composite farming techniques, water recirculation system for fish culture, culture of fish food organisms and fish nutrition.

The book also includes simple and useful illustrations for the immediate reference of readers. On the whole, the book offers valuable material for the use of teachers and researchers in the field of fresh-water aquaculture.

Reasonably priced at Rs. 60/- per copy, this book should be an useful asset.

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The Useful Plants of India, (Published by Publications and Information Directorate, CSIR, Hillside Road, New Delhi 110 012), 1986, pp. 918, Price: Rs. 128/-, $ 32, £ 24.

This is a most useful publication. It serves a long felt need by providing in a capsule form easy reference and access to information on a large number of our plants of economic value. The extensive documentation that went into the production of the authoritative, Wealth of India, published in eleven volumes during 1948-1976 and which is being continuously updated (the first volume of the revised edition has already appeared), has been utilized in the preparation of the present volume. This volume runs to 918 pages with the Index alone occupying 207 pages. Nearly 5000 plants are assessed for their economic value and these plants are listed alphabetically under their botanical names. The generic names appear in bold capitals with the name of the family mentioned against each of them. Under the genera, the species are listed, the valid names appearing in dark type and the synonyms, if any, in italics. The synonyms are also listed in alphabetical sequence with a corresponding reference to the valid name. For each species, names in Indian languages are given along with common English names wherever available. A brief description follows on the parts of the plant used, the chemical constituents and the particular use to which the plant is put.

The Index running to 207 pages forms a substantial part of the work and includes the names in Indian languages, regional, trade and common English names. For the names in Indian languages, the language is mentioned in parenthesis against each entry. The coverage in this regard appears to be quite exhaustive. A test check of some names

from the reviewer's own language, Kannada, reveals that it is so.

The book is well produced with an attractive cover. The printing is good and serves for easy reading. The 'Errata' at the end of the volume takes care of a few printing errors that have crept into the text.

The book deserves a place in every library and should enjoy an enlightened readership. It is reasonably priced at Rupees 128 but, if the cost could be further reduced by bringing out a paper back edition on thin paper, this most useful publication can then reach a much wider readership particularly the student community.

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Physiological Fluid Dynamics-I,(eds) S. D. Nigam and Megha Singh, (Published by Scientific Committee on Physiological Fluid Dynamics, Indian Institute of Technology, Madras), 1985, pp. 300, Rs. 100/-.

The present book contains the proceedings of the First International Conference on Physiological Fluid Dynamics held at Indian Institute of Technology Madras from September 5–9, 1983. It appears from the title that the organizers want to organize more such symposia in future and to publish the proceedings.

Physiological Fluid Dynamics is a rapidly growing interdisciplinary field which is of interest to applied mathematicians, medical scientists, biophysicists, biochemists and to mechanical, chemical and biomedical engineers. As such the publication of the present book is likely to be welcomed by a large number of scientists and engineers.

The book contains 42 papers on the following subjects by 82 scientists and engineers: Peristaltic flows (4), Arterial stenosis (7), Biorheology (3) Physiological transport (5), Joints (3), Synovial flows (2), Cardiac mechanics (2), Drug-tissue interaction (8), Measuring techniques (5), Artificial membranes (1) and Constitutive equations in suspension rheeology (1).

Peristaltic flows of non-Newtonian fluids and of conducting fluids, in ureter and in peristaltic pumps are considered.

Blood flow through stenosed arteries is considered when the flow is pulsatile, when there is multiple stenosis and fluid is power law and when microcontinuum approach, effect of slip and bifurcation effects are considered.

In physiological transport, flows in proximal renal tubules, heat transfer between body core and skin, diffusion of oxygen, body fluid adjustment and evaluation of hemodialysers are considered.

Other papers deal with oscillatory flows in a micropolar fluid, *n*-layered poisseuille flows, joints chain concept, synovial joints, atheroslerosis and different measuring techniques.

The book contains both excellent and relatively routine papers. However this gives a rather comprehensive state-of-the art survey in many areas and as such the book should be extremely valuable to all research scholars in physiological fluid dynamics. It can also be used as a supplementary reading book for courses in biomechanics.

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Geomorphology of the Ravi River, by Bhupinder Singh Marh, (Published by Inter-India Publications, No. 17, Raja Garden Extension, New Delhi 110 015), 1986, pp. 86, Price: Rs. 95/-.

In this book, Dr Marh has attempted to reconstruct the Quaternary and Pre-Quaternary geomorphic history of the Ravi basin. The book is divided into six chapters. The first three chapters deal with the problem, the study area and the methodology. The fourth chapter is devoted to the study of longitudinal profiles of the Ravi river and its tributaries, and the river terraces. In the fifth chapter, Dr Marh has attempted to relate the modifications in the river courses to the tectonic movements, river capture and the Pleistocene climatic changes. A detailed study of the alluvial terraces has also been undertaken in this chapter. The last chapter traces the changes in the river regime, in response to the Himalayan Orogeny and the Quaternary climatic changes. The author has presented his views in a systematic form and lucid language. The study is supported by good diagrams and photographs.

The attempts made by Dr Marh to evaluate the river profiles and to study the genesis of alluvial terraces is undoubtedly, an improvement on the

traditional style. However, one feels that in the absence of morphometric data, the approach could have been modified by laying greater emphasis on field observations and primary data. A detailed study of river and terrace morphology, stratigraphy of the alluvial deposits and morphometric analysis of the drainage network would have provided a better insight into the geomorphic history and would have enhanced the usefulness of the book.

In spite of some lacunae, it is to the credit of the author that he has produced a work which has made some new contributions to the studies relating to the geomorphology of the Himalayan river system.

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Annual Review of Public Health, Vol. 7, 1986, pp. 566, (ed.) Lester Breslow (Published by Annual Reviews Inc., 4139 El Caminoway, Palo Alto, California 94306, USA) Price: USA $ 31.00, Elsewhere $ 34.

The reviews indicate the all pervasive nature of the terminology 'public health'. The statement "It is a well known fact that there are no social, no industrial and no economic problems which are not related to problem of Health" is the prevailing opinion of public health scientists.

The introductory chapter 'Is there a public health function?' depicts the dilemma in determining the public health implications of toxic chemicals. The study of 'Ergonomics'—an emerging discipline in occupational health, presents several methods for measuring and evaluating physical stress in the work place. 'The presentation of motor vehicle injury as anagolous to infectious disease' by public health researchers is an interesting concept. Appreciation of the complex etiology of birth defects in environmental exposure is leading to better epidemiological and molecular approach, is shown by 'Monitoring for congenital malformations'. 'The interaction of economics and ethics' concludes that 'problem of treatment of aged has at present no specific solution'.

A new area 'Medical geography of health' seeks to synthesize epidemiology, microbiology and other medical sciences and uses them in explaining the spatial distribution of use of health services. 'Prospects for new and improved bacterial vaccines' opens a new vista in immunoprophylaxis of bacterial diseases. One area of research newly emphasized—chemoprevention of cancer by utilization of defined chemicals— highlights promising research strategy for reducing the incidence of cancer.

'The role of drug industry in medical care', the need for increased international unification and standardization of drug policies, the value of 'monitoring systems in detecting teratogenicity of a new drug', "delayed health hazards of pesticide use", present the current status of drug development interrelationship with public health. 'Public Health aspects of Nuclear War' depicts vividly the horrors and aftermath of nuclear war.

The question of treatment of hypertension, the role of obesity in the development of coronary risk factors and disease, public health approches to obesity and its management are covered by the reviews on "The symposium of nutrition".

The volume is an informative book on many current public health problems.

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Phosphorus Research and Agricultural Production in India, H. L. S. Tandon, (Published by Fertiliser Development and Consultation Organisation, C 110, Greater Kailash I, New Delhi 110 048), 1987, pp. 160 + xii, Price: soft-cover Rs. 95/US $ 30; hard-cover Rs. 140/US $ 43.

This book written by an expert in the field of soil science is a timely publication analysing in a comprehensive manner, the many facets of phosphorus, one of the major plant nutrients, in Indian agriculture during the period 1970–1986. The details are documented in 18 sections.

Section 1 gives a brief introduction and objectives and scope of this publication. The aspects of organization and trends in phosphorus research are outlined in section 2. Section 3 deals in a succinct manner the role of phosphorus in plants with emphasis on P requirement of crops and removal by intensive cropping systems. The next section is devoted to P in soils elaborating on forms of P and their practical significance, transformation of fertiliser P in soils, evaluation of P fertility of soils, factors affecting available-P in soils, and areas of P

deficiency. Section 5 outlines briefly the additions, removals and balance sheet of P in Indian agriculture. The section on crop responses to P application, P management in cropping systems and agrotechnologies for increasing efficiency of P are quite informative and would be useful in practical farming. The interactions, both among nutrients and between nutrients and other inputs have been highlighted in section 9. Subsequent sections deal with P dynamics in salt-affected soils and in dryland agriculture. A critical assessment of long-term fertilizer experiments is presented in section 12. Section 13 reports on the comparative evaluation of P fertilisers which has received considerable attention in the country for the past 30 years. Statistics have been provided in a separate section on P fertilisers — their production and consumption which gives a bird's eye view of the status of P fertilizer usage in the country. A brief note on P recommendations for high yields in crops has been given in section 15. Section 16 is very stimulating and appropriate as it outlines the suggestions of the author for further research on P. The summary and conclusions pertaining to the status of P research and agricultural production in India are presented in section 17. The last section lists out the references cited in the book.

It would be appropriate to point out that providing a subject index might have enhanced the value of the publication as the needed information can be easily and quickly located. On p. 15 the Bray and Kurtz method suitable for neutral soils needs to be correctly indicated. A list of active research laboratories/institutes and names and addresses of scientists working on phosphorus in agriculture would have been useful.

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NEWS

INSA MEDAL FOR YOUNG SCIENTISTS—1988

Instituted by the Indian National Science Academy in 1974 the medal is awarded annually in recognition of outstanding work of scientists below the age of 32 (as reckoned on 31st December preceding the year of award). Only those **born on or after January 1, 1956** are eligible for consideration in 1988. The work done in India by the nominee will be taken into consideration for the award.

The awardee is presented a medal and a cash award of Rs. 5,000/–. In addition, the recipient is considered for a research grant by the Academy not exceeding Rs. 20,000/– per year, including a stipend for a JRF, for a period of three years for continuing research work, provided the research proposal is considered worthy of such support. Preferential consideration may be given under partial travel grant scheme for attending international conferences.

Nominations for the awards for 1988 may be made by Fellows of the Academy, established scientific societies of all India character, University faculties and departments, or research institutions.

The last date for the receipt of nominations in the Academy is **November 15, 1987**.

Nomination Proforma can be obtained from the Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi 110 002 by sending a self-addressed envelope of 28 × 12 cm size.