

BOOK REVIEWS

named organic reactions would prove to be of good instructional value. Students should find this book affordable and useful for routine laboratory work.

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Perspectives in Nematode Physiology and Biochemistry. M. L. Sood and Jyotika Kapur, eds. Narendra Publishing House, 1417 Kishan Dutt Street, Malivara, Delhi 100 006. 1995. 302 pp. Price: Rs. 575/-, \$ 69.75.

Nematodes, much like insects, are one of the most abundant animals, both in their numerical strength as also in the number of species. While insects are very conspicuous by their presence as also because of some 800,000 known species, the knowledge of nematodes with only about 30,000 known species is very scanty because of their hideous and illusive nature, small size, concealed habitats, colourless bodies and the difficulties that are generally encountered in their collection and isolation. In the last 2 to 3 decades, because of the interest that has been generated due to their economic importance, nematology has fast emerged as an important area of parasitology, helminthology, plant nematology as also that of agricultural and biological sciences. There were not many text/reference books on nematodes until recently, more particularly from India. With this background, in my mind, I naturally was very excited by the mere sight of this book, more so because of its title. But my enthusiasm turned into disappointment as I read through the book.

Keeping in view the paucity of information on the physiology and biochemistry of nematodes, one would have expected some well-knit, properly interlinked, and thoroughly edited write-ups, but what we have in its place are some essays on certain aspects of physiology and a couple of them on biochemistry as well. It is interesting to note that two of these write-ups are by scientists who have not even made any contributions, as judged from the bibli-

ography provided, in the area on which they have contributed the articles. Some other topics like 'Test parasites and nematicidal drugs', though of significance and academic interest, do not actually strictly fall under the title of the book. Similarly, the article on *Ascaridia galli* appears more to be a Ph D research topic rather than a review article and the same should merit publication in a journal rather than in this book. However, from these remarks it should not be inferred that the book does not have merits and the information contained therein is totally devoid of value and utility. The articles by Bone, Boczone, Srivastava and Batra, Harnett and Parkhouse, etc., are exhaustive, up-to-date and praiseworthy.

I feel that the editors have missed a great opportunity of producing a useful book on such a challenging subject. The choice of topics should have been a more careful one. It also appears that the various contributors did not get proper guidelines from the editors and as a consequence the various write-ups do not appear to be the parts of the same book. It is also strange that no detailed introduction or preface precedes the articles. The quality of printing and the general get-up of the book is satisfactory. There are some typographical and printing errors, which should have been avoided.

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Ocean Technology – Perspectives. Sushil Kumar, Vikram V. Agadi, M. Keshava Das, B. N. Desai, eds. CSIR, New Delhi. 1994. 989 pp.

The International Indian Ocean Expedition of 1960–65 was the first attempt in the country towards systematic studies of the seas around India – culminating in the establishment of the National Institute of Oceanography (NIO) at Goa, which has since been in the forefront of oceanographic research in the country. Besides NIO, research in ocean science and engineering is carried out in more than a dozen research institutes, IITs and universities. A glimpse of the contemporary work in the country in ocean technology is given in the book under review. The book is a compilation

of 95 papers presented at a national symposium organized by NIO in August 1992 as a part of the CSIR Golden Jubilee Celebration, to which it is a fitting tribute.

As the title of the book indicates, more than 80 papers deal with different topics in ocean technology and the remainder with ocean science, except for one odd paper on wave propagation in alkaline metals, which is not relevant to the theme of the book. It would have been convenient to the reader, if the editors had grouped the papers under different subheadings. On a study of the book, the following topics can be identified with more than 4 papers in each: ocean waves, wave forces, ocean bed surveys, oil field development, remote sensing, corrosion and biofouling, pollution monitoring and control, biotechnology, deep-sea mining and marine instrumentation. On about a dozen other topics of oceanography, there are one or two papers each. A glaring omission is the subject of deriving electrical energy from the oceans (on which at least three agencies have been working in this country), except for a single paper and that too on the concept of an ocean-coupled solar pond for conversion of thermal energy into electrical power.

There are four papers on marine survey systems and techniques – the very first paper on survey for engineering applications, two papers on the multi-beam sonar for seabed mapping and a review paper on current trends in underwater operations and tools used.

A wide variety of problems related to the design and performance of coastal and offshore structures, guyed towers, tension leg platforms and moored buoys in the presence of ocean waves and currents is discussed in over twenty articles, which will be of immense use to a designer. Four papers which deal with techniques of wave measurements, wave modelling taking into account transformation processes in shallow waters, will be useful in estimating the design wave parameters. A paper on tidal currents in shelf regions deals exhaustively with both theory and practical measurements.

The problem of corrosion in cement, concrete and steel structures in marine environment as well as techniques of studying the corrosion process and corrosion fatigue in metals and biofouling in power plants are discussed in six articles, and will be valuable to engineers.

Out of the twelve papers on marine instrumentation, nine present original work on the development of new instruments, some of which have been field-tested and merit consideration for commercial production, and three give overviews of commercial systems of foreign manufacture and data management systems. The instruments are used for integrated data acquisition and measurement of water quality: spectral irradiance, underwater thermal profile, ambient noise, tidal heights, subsurface currents and core sampling. The article on nondestructive testing is just a review article on current techniques.

An excellent set of eight papers deals with satellite oceanography, namely techniques for deriving from satellite data information on fish abundance zones, littoral sediment transport, sea surface temperature and mixed-layer depth, atmospheric moisture content, surface wind and wave, latent heat flux and bathymetric features. With the advantage of getting synoptic data over wide regions at periodic intervals from the satellites, these papers will be valuable for research studies and applications.

Another topic of contemporary interest, namely, exploration for and exploitation of polymetallic modules in the central Indian Ocean, as well as the environmental protection aspects while mining, is dealt with in about fifteen papers which merit careful study.

Environmental pollution, in particular oil spilling, is the subject of five papers; the use of microbes for oil degradation or recovery is discussed in four papers. Other aspects of biotechnology, such as processing seaweeds for drugs, are discussed in three papers.

Among the fifteen papers dealing with different aspects of ocean science, some are significant and worth follow-up, such as the spatiotemporal variability of biological and physical fields, simulation of acoustic propagation, storm surge modelling, classification of acoustic echoes from seabed with broadband signals and directional response computation for an arbitrary acoustical array for broadband signals.

The usefulness of the book would have been enhanced by introducing each of the ten major topics with a summary of the present status as revealed in the papers and the perspectives for future. A symposium of such a high order as the one under review would have seen valuable discussions at the end of presenta-

tion of each paper and their inclusion would have further enhanced the value of the book. However, even in its present form, the book is highly informative and will be valuable to any research worker in emerging fields of ocean technology.

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Botany in India: History and Progress. Vol. I. B. M. Johri, ed. Oxford & IBH Publishing Co. Pvt. Ltd., 66 Janpath, New Delhi 110 001. 1995. xxxi + 521 pp. Price: Rs 950.

The above publication, a multiauthored volume, comprises consolidated information primarily on lower groups of plants from India. During the past three decades or so, there has been phenomenal increase in research activities in the country not only on fundamental aspects of botany but also on several new disciplines/aspects that have been initiated and fruitful research conducted on them. The volume of research publications has been enormous and it is difficult to keep abreast of the information on all the facets of one's own speciality, leave aside botany as a whole. Almost all the contributing authors (except probably one) of the above volume are well-established specialists in their own fields of research and have, therefore, done a fair job of assembling and arranging the research information under neatly segregated sections and subsections. One is often tempted to be subjective in such write-ups, but it is creditable that invariably almost all chapters have an objective approach in their contents.

Historical accounts for the different groups of plants of India have been published earlier at intervals, but probably reviewing them at the beginning of each chapter was evidently a necessity for understanding the continuity of research progress of the subject matter in the subsequent period of time. This has in some cases entailed a partial repetition in some chapters (on fungi).

The title of this publication, in a strict sense, indicates that it gives information only on botanical research carried out in India on Indian plants, by Indian and foreign nationals. Exotic plants studied in India, such as *Tmesipteris* spp. by Sahni at Lucknow (p. 456), could also come in this category. The studies on Indian plants carried out in foreign countries by Indian or foreign nationals, such as *Flora of British India* by J. D. Hooker (p. 22) worked out at Kew (this fact is withheld), actually represent 'botany of India', and such instances get confused or even synonymized as 'botany in India'. However, research on exotic plants carried out outside India by Indian nationals is *certainly not* 'Botany in India', and the editor has been irresolute in allowing such information in the publication to persist, (examples given later).

Since an up-to-date consolidation of information on different branches/aspects of botany in India was not available at one place, the above publication is a welcome venture, which will positively provide referential information to postgraduate students of botany for competitive tests, selection of research topics/disciplines/branches to be pursued at particular centres of that speciality in the country. It may, however, be mentioned that the university botany departments are dynamic as far as the specialities are concerned, because they change with the change/retirement of the personnel – a universal phenomenon, and the specialities in the universities may not necessarily be existent.

The matter dealt with in the different chapters is of high standard and detailed, certain chapters being *par excellence*, having been prepared by specialists with large number of publications to their credit. A major part of the book (Chapters 4–24) deals with the lower groups of plants (viruses, bacteria, algae, fungi, lichens, bryophytes and pteridophytes – some of which were earlier known as cryptogams).

An exploratory history and publication of numerous floras (entirely angiospermic) along with the institutions/agencies known for angiosperm taxonomic work have been outlined in Chapter 2. A much detailed and interesting exploratory history by K. Biswas (in 1943) has apparently not been consulted as there is no citation under the refer-