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**BOOK REVIEWS**


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**Flora of Chickmagalur District, Karnataka, India**, by S. N. Yoganarasimhan, K. Subramanyam and B. A. Razi. (International Book Distributors, Dehra Dun, India) p.p. vii + 407, 1 map, 2 graphs, 3 tables, 4 photographs, price Rs. 175.00.

The book under review is the fourth district flora from Karnataka, after Bangalore District by S. V. Ramaswamy and B. A. Razi (1973), Hassan district by C. J. Saldanha and D. H. Nicolson (1976) and Mysore District by R. R. Rao and B. A. Razi (1978). Chickmagalur District is rich in natural resources and consequently there is considerable developmental activity resulting in depletion of the flora. An account on the flora of this underexplored and mountainous district therefore, will be welcomed by all. The book is divided into 8 parts: Introduction (pp. 1-15), Phytography of Taxa (pp. 15-373), Bibliography (pp. 374-377), Index to Botanical Names (pp. 379-399), Index to Local (Kannada) Names (pp. 400-403), Index to Sanskrit Names (pp. 404-405) and finally an Errata (pp. 406-407). The subject matter is very concisely written. The introduction deals with the reasons for undertaking the floristic study, previous botanical explorations in the district, materials and methods, plan of work, physiography, geology, rocks and soils, climate, general pattern of vegetation, orchid flora, important features of vegetation, medicinal plants and crops and other important plants. An artificial key to the families of seed bearing plants is provided along with the key to the genera under each family and key to the species under each genus. One major merit of the flora is the very useful critical taxonomic notes provided under remarks on several genera and species. Another point of interest is that a number of species hitherto known to occur on the southern ranges of Western Ghats have been recorded from this district whereby a northern extension of them has been established. Similarly some taxa known earlier from northern parts of Western Ghats have been reported from the district and thus showing an extension of them to the southern ranges. The volume also gives a map of the district, 2 graphs on climatic data and 4 photographs of plants. The book is published by International Book Distributors, Dehra Dun and is printed nicely by Prabhat Press, Meerut.

Date of publication is very important in any taxonomic work, but this is not given in the book. The only indication that a reader gets is from the foreword that the book is published some time after 27th May, 1981. Chickmagalur District is very rich in its floristic constitution and the volume deals with only 616 taxa of

vascular plants. It is doubtful whether adequate exploration has been done before writing the flora. In the herbarium of the Botanical Survey of India, Western Circle, Pune, there is a record of over 1,000 species of angiosperms alone collected from the district. Keys to the families and genera of ferns and fern allies have not been provided. On p. 14, a reference to Yoganarasimhan and Subramanyam (1976) is given which should actually have been Yoganarasimhan, Subramanyam and Razi (1976). On page 160, *Schefflera benghalensis* Gamble is described. According to Gamble (Kew Bull. 229, 1919) the N. Indian materials alone are *S. benghalensis* Gamble and the S. Indian plants are *S. venulosa* (Wight & Arn.) Harms, and the latter combination dates from 1894 whereas Gambles new species was described in 1919. It is not understood as to how a later name has been selected (even if they are conspecific). Consistency is not observed in citing the names of authors, e.g. Wt. (pp. 38, 41, 246, etc.), Wight (pp. 34, 35, 63, 66 etc.), Wight. (p. 61 etc.), Thoms. (pp. 23, 28 etc.) Th. (pp. 59, 61 etc.), Ander. (p. 30), T. And. (p. 250). In spite of these and similar shortcomings the book is still useful. The price is on the higher side.

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**Plant Pathogens: The Fungi**—by R. S. Singh (Oxford and IBH Publishing Co., 66, Janpath, New Delhi 110 001,) 1982, pp. vii + 443. Price Rs. 85.00 (Hard cover).

According to the author the book covers two major aspects of mycology i.e. fungal activities and their developmental morphology and taxonomy. The approach to the subject is not clearcut. There was need to draw a line of demarcation between pathogenic and nonpathogenic fungi on basis of their biochemical and genetical behaviour. In chapter 3, which deals with asexual reproductions, emphasis should have been given on the environmental and physiological factors which help in proliferation of asexual spores. Similarly in chapter 4 role of sex hormones as well as a more detailed discussion on Physiological specialization was needed. Chapter on nutrition of fungi is of elementary nature. Instead of devoting space to the constitution of culture media, the nutritional specificity expressed by different species and isolates of pathogens should have been discussed. Discussion on metabolism of major constituents of hosts would have

been of substantial value. Chapters 9 to 16 deal with morphology and life history of fungal pathogens. This space which covers more than 300 pages should have been used in a more judicious and profitable manner. Peronosporales alone cover 59 pages. Instead of giving morphological details of 8 species of *Pythium*, 15 species of *Phytophthora*, 10 species of *Alternaria*, 7 species of *Colletotrichum*, a comparative and tabulated account of different species of a particular genus would have been more beneficial to the students. Diagrams are poor and not properly labelled.

Prof. Singh is author of several books and a very mature teacher. It is hoped that in the next edition he will bring all the plant pathogens (fungi, bacteria, mycoplasma, viruses and nematodes) under single cover in a more crisp and concentrated form.

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**The Proceedings of the 1981 International Deep Water Rice Workshop:** (Jointly sponsored by the International Rice Research Institute, Philippines and the Department of Agriculture, Ministry of Agriculture and Cooperatives, Thailand), (The International Rice Research Institute, Los Banos, Laguna, Philippines, P.O. Box 933, Manila, Philippines) 1982, pp. 501, Price: Not given.

Unlike the other workshops organised in the past for discussing the problems of rice cultivation for higher grain yield, this workshop has its special significance for dealing with the problem of deep water large rice area (10 million hectares) in South and South-East Asia.

Salient findings of the research papers dealing with diverse aspects of deep water rice culture, which were presented under seven different sessions during the workshop for five days are:

1. *Varietal development:* Three papers presented in the session contain the information based upon the experience of a large number of multilocation trials conducted in actual problem area and breeding work conducted at research stations, the requirement of the type of cultivars for the situation of intermediate deep water (stagnant water of 1 m. deep), deep water (water depth more than 1 m) and complete submergence by flood for a duration of 10-15 days.

For intermediate deep water, semi-dwarf rice varieties like RD. 19, with high tillering capacity, elongation ability upto 120 cm. of water and having photo-sensitivity are desirable; while for deep water

situations, it is necessary to obtain good stand by cultivation practices and judicious fertilizer management with tall natured elongating photo-sensitive plant types. However, for complete submergence by flood, types like FR. 13A and FR 43B capable of tolerating submergence upto 21 days are desirable.

2. *Varietal improvement:* Papers presented in this session have given the account of the latest status of deep water rice development in India, Bangladesh and Burma under diverse agro-climatic conditions.

3. *Varietal improvement and genetic studies:* In addition to giving an account of deep water rice in Northern Vietnam and West Africa and the study on tillering behaviour and internode elongation, two papers under this session have dealt with genetics of deep water rice.

Multigenic control of the plant and internode elongation with partial dominance have been indicated; but in some cases dominance has also been observed. With respect to genetics submergence tolerance. Dominant alleles were found to be concentrated more in the tolerant parents FR 13A, Kurkaruppan, FR 43B and Goda Heenati.

4. *Varietal evaluation:* Five papers under this session have reported the observations with particular reference to the grain yield and associated characters of the cultivars tested under deep water condition of India, Bangladesh and Thailand.

5. *Biological Nitrogen-fixation and screening rices for drought tolerance:* Interesting papers presented by Watanabe *et al.* in this session have revealed colonization of epiphytic N<sub>2</sub>-fixing blue-green algae in aquatic roots, leaf sheaths and culm of deep water rice. Nitrogen-fixing activity of those algae has been proved by the use of <sup>15</sup>N-labeled source. Contribution of algae in deep water rice field of Bangladesh was also assessed by Martinez and Catling.

Drought tolerance capacity, an imposed necessity for deep water rice at early growth stages, have been vividly dealt in three important papers.

6. *Screening for submergence tolerance and elongation capacity:* Large number of papers (twenty one) presented in this session have dealt largely with the screening techniques, followed in different research institutes for assessing the tolerance of rice cultivars under deep water situations and complete submergence. Some of the papers have also dealt with the important aspects of (i) morphological and anatomical changes, (ii) congenial physiological processes and (iii) varietal differences in nitrogen uptake under deep water situations.

Other papers under the session have dealt with different management practices of deep water rice, with particular reference to the increased production of grain yield.

7. *Plant Protection*: Five papers presented under the session have discussed (i) problem of weed in deep water rice field and (ii) damage of deep water rice by yellow stem borer and the Nematode causing Ufra disease resulting in large scale damage. The papers have also dealt with the control measures for all the three problems and indicated delayed planting to be the sure method for controlling Ufra disease.

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**Dictionary of Agriculture**—by L. L. Somani and S. B. S. Tikka (Agricole Publishing Academy, 208, Defence Colony, New Delhi 110 024), 1983, pp. 463, Price Rs. 350.00, Elsewhere US \$ 70/-.

This is a useful compilation of scientific words and terminologies in vogue in Agriculture and Allied Fields, including Botany, Chemistry, Physics and Zoology. It contains about 8000 words arranged alphabetically and printed in bold types. The authors

have adopted the standard methods in organising the Dictionary which makes it easy to refer. It is quite comprehensive and impregnated with useful information.

There are a few printing errors, e.g., Alpha Ketoglutarate, Earthenware, Hierarchy etc. The meanings definitions of some words are disproportionately lengthy, e.g., Night-Vision, Nurse Seed Grafting, Sprayer Nozzle, Diffraction etc. Some of the definitions are not authentic/accurate, e.g., antibiotic, bacitracin, uredospore, volunteer tree etc. Also, under some terms like Soil Structure there are too many sub-titles, which appear to be non-traditional for a Dictionary. There are glaring omissions such as Horticulture, Sericulture, Microbiology, Rhizosphere, Spermosphere etc., though closely related terminologies have been covered.

The Dictionary would be an asset to all general and Science libraries and also in the laboratories and institutions dealing with agricultural research and development and related subjects.

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## ANNOUNCEMENT

### POST CONFERENCE SEMINAR ON ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL FROM WASTEWATER

Under the aegis of the International Association on Water Pollution Research and Control (IAWPRC) and the French Committee of IAWPRC (CFRP), an international post-conference seminar will be held in Paris, France on 24 and 25 September 1984.

The seminar will follow the 12th biennial IAWPRC conference to be held in Amsterdam, 17-20 September 1984 and is also an event related to the activities of the research group on biological phosphorus removal which was founded after the highly successful IAWPRC post-conference seminar in Pretoria in April 1982.

In the light of the problems created by excessive phosphorus inputs in water, which may entail eutrophication, and the necessity of removing phosphorus from waste-waters by biological processes, this topical seminar will provide a forum for engineers and researchers; and highlight recent developments in biological phosphorus removal from waste water. The discussions will be focussed on the following topics:

(1) microbiology, (2) chemistry and biochemistry of pilot scale studies, (3) pilot scale studies, (4) full scale studies, (5) treatment, handling and disposal of phosphate rich sludges, (6) research development needs.

An international scientific committee will select authors on the basis of their abstracts and decide whether the selected contributions will be presented orally or as a poster. Prospective contributors must send a 500 word abstract in English by 15 December 1983 to Dr. Michel Florentz, Phosphorus seminar, Anjou Recherche, 52 rue d'Anjou, 75384 Paris, Cedex 08, France.

Notification will be mailed in February 1984. The final papers, written in English or French, must be under 5,000 words long and be received by 15 June 1984. They will be distributed before the seminar and subsequently published. All contributions must be original and be presented by their authors. The authors must provide for their own expenses, including the registration fees.