

## Book Review

**BOTANY IN INDIA HISTORY AND PROGRESS VOL. I - B.M. JOHRI Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi (1995) ISBN 81-204-0900-0. pp 521.**

Prof. B. M. Johri is one of the most distinguished and experienced botanists of the country. Possibly there could not be a better scientist other than Dr. Johri to edit and compile a text on such varied and diverse articles covering practically every aspect of plant sciences. Infact he is the only botanist who has interacted with a very wide section of plant biologists and has personal knowledge about their contributions.

Chapter 1 has been masterly fashioned and creates great interest about the contribution of botanists of yester years who laid the foundation of the subject in India due to their hard work and devotion for the subject.

An account of the plant explorations carried out from time to time has been nicely presented in Chapter 2. Next chapter deals with medicinal plants. The authors have done well by giving a comprehensive list of scientifically more important plants of therapeutic value.

Chapters 4 and 5 deal with plant mollecutes and plant viruses respectively. Chapter 4 discusses the role of Mycoplasmas, Spiroplasmas and Bacteria - like organisms associated with plant diseases. Important plant diseases caused by mollecutes in India, their characteristics based on electron microscopic studies, serodiagnosis, culture in synthetic media, natural spread and management have been dealt in detail. Next chapter deals with plant viruses. Viral diseases, diseases caused by virioids, biological properties of plant viruses, histopathology and physiology of virus infected plants are described in a precise manner. This is one of the best and most uptodate chapters of the text.

Chapter 7 is devoted mainly to plant pathogenic bacteria. Most of the important bacterial diseases of crop plants in India together with losses caused by them, number of strains present and control measures, epidemiology, transmission, genetics, chemical control and resistant varieties are important aspects described by the authors in a lucid manner.

Chapters 8-12 cover algal portion including Cyanobacteria, Chlorophyta and Charophyta, Phaeophyta, Rhodophyta and Cytology of Algae. Chapters 8-11 have been broadly classified into different section and cover almost all the important aspect of algae viz., taxonomy, ecology, morphology, developmental studies, physiology, genetics and economic importance. However, in Chapter 9 (chlorophyta and Charophyta) the emphasis is mainly on morphology and physiology. In Chapter 10 (Phaeophyta) physiological and genetical aspects of brown sea weeds have been ignored. There are rather scanty reports on physiology and cytology of Rhodophyta (Chapter 11). Chapter 12 (Cytology of Algae) summarizes the massive efforts made by Indian cytologists in the field of algae. Not much efforts have been made on the molecular aspects of algae. Concluding remarks about different groups of algae are generally to the point and highlight the areas on which further work should be carried out. It may be mentioned that considerable work has been done on the role of algae as pollution indicators and bioaccumulators in aquatic ecosystems in recent years but this aspect has not been touched. chapters 13-18 are devoted to fungi. First part of Chapter 13 deals with general account of distribution of fungi in India and second part discusses morphology and taxonomy of fungi which in my opinion leaves some scope for improvement. Remaining part of this chapter which embodies details about reproductive biology, thermophilic fungi, soil fungi, predaceous fungi, medical mycology and biotechnology have been discussed in systematic manner. Diseases caused by fungi are discussed in Chapter 14. Introductory part of this chapter which mainly deals with historical aspects, is well written. Remaining part of the article is devoted to fungal diseases. The authors have rightly concluded that work on breeding for disease resistance needs more attention and efforts be made for evolving cheaper and eco-friendly fungicides. Chapter 15 gives an account of seed pathology. The article is well written. The authors have identified four major centres of seed pathological research but detail of the thrust areas persued at these centres have not been incorporated. Fungal physiology and biochemistry are covered in next chapter. The authors have nicely discussed nutritional requirement of fungi, physiology of parasitism, antibiotic production, enzymology, post harvest diseases and role of fungi in biotechnology. Chapter 17 deals with cytology

of fungi. Since not much work has been done on this aspect in India, the authors have tried to discuss whatsoever limited account was available. This aspect needs special attention of mycologists, cytologists and geneticists in India.

Next Chapter on mycorrhizae is well written and gives upto date information on morphology, taxonomy, physiology, biochemistry and ecology of mycorrhizal fungi. General account of plant galls is summarised in Chapter 19. The authors have emphasized on the need of undertaking research on plant galls produced on diverse groups of plants. Biology of lichens is presented in next Chapter. However, more emphasis is given on taxonomy of lichens. Phytochemistry, biochemistry and physiology as well as role of lichens as bioindicators are some of the other aspects which should have been given more coverage.

Chapters 21 and 22 deal with morphology, systematics, reproductive biology and morphogenetic studies on bryophytes. In Chapter 21, the author has discussed different orders of Hepaticae, Anthocerotae and Musci from morphology, taxonomy and reproductive biology point of view. This article will be very useful for those who are working or wish to initiate research in the field of bryophytes. Chapter 22 gives a general account of morphogenetic studies done on liverworts and mosses. Morphology, anatomy and reproductive biology of pteridophytes is discussed in Chapter 23. The article is well written. In the next Chapter author has tried to compile the work done by different workers on mor-

phogenesis of Pteridophytes. Although compactly written, this article lacks upto date information.

No uniformity has been maintained with regards to division of different chapters under different subheads. The authors have used their own discretion while treating the chapters assigned to them. Separate chapters on cytology of algae and fungi have been given but in case of bryophytes and pteridophytes this aspect has been covered along with general aspects. Considerable work has been done on cytology of pteridophytes and a separate chapter on this aspect would have been justified.

Most of the chapters have been written by subject experts in different areas of Botany, but in many cases the authors, instead of dealing the article in a comprehensive manner, have shown bias for quoting their own work. Printing mistakes in some of the chapters reflect that possibly some of the authors have not been very alert while going through the proofs. Few illustrations/photographs especially on the ultrastructure of cyanobacteria, important viruses and mollecutes would have made the book attractive.

The book has been moderately priced looking to the high cost of paper and printing. I hope plant biologists will find it to be very informative and useful.

**K.S. Bilgrami**  
Department of Plance Science  
T.M. Bhagalpur University  
BHAGALPUR