
BOOK REVIEWS

Home Gardening by P. P. Trivedi (Indian Council of Agricultural Research, New Delhi-110001) 1983, pp. 294, Price: Rs 50/-.

India is a vast country with a wide range of agro-climatic conditions, rainfall, temperature, altitude. It is hardly possible to prescribe for every kind of weather one encounters in the country. It is so much easier to talk of gardening in Britain or perhaps Northern Europe than in India. Ms. Trivedi's experience of Eastern India hills and the plains of North India has found expression in this book of much value, particularly to residents in these regions.

Ms. Trivedi has spent much time and effort in getting together information on a variety of gardening topics, from garden planning and operations through plants and trees to plant protection and flower arrangements.

For a long time, K. S. Gopaldaswamiengar's "Complete Gardening in India" has been the bible for garden enthusiasts in this country. Published nearly 50 years ago, it dealt predominantly with gardening in peninsular India, indeed, with gardening in Bangalore, which, like the hills of Eastern India or the plains of U.P., is not typical of the country. The two books, that of Iengar and of Ms. Trivedi, should therefore complement each other and must prove of immense value to gardeners in this country.

However, regardless of what Ms. Trivedi says of the widespread love of gardening in the Eastern hill regions, it must be admitted that gardens are in this country a preserve of the privileged. And for good reason: gardening requirements, manures, particularly organic manures, are expensive and difficult to obtain and often are not available to the average house-holder, particularly in urban areas. Almost every single item of organic manures listed by the author on page 13 is obtainable only after much effort, and when one is working on a kind of time-schedule, it is often a frustrating experience. In advanced countries, one walks into a garden store and buys whatever one needs for one's garden, from seeds to implements for fertilizers to pesticides. And like in most other things in this country, quality is the first casualty. Also, why don't we make better quality implements? Whenever I happen to go abroad, among the first things I buy are good secateurs, budding knives, among others. On one such trip to London some years

ago, I bought up a good stock of metal labels and cute wire fasteners to tie to stakes.

As I am on the subject, one suggestion; most gardeners would like some precise and detailed information about a few plants which they have room to cultivate, particularly in urban areas, also to which they have time and effort to devote. Small brochures with a few simple illustrations, each on a particular plant, should be welcome, somewhat like, but much smaller, than the small book on Roses which Dr B. P. Pal brought out sometime ago. I have in my mind titles like: Gladiolus, Budleia, Lily, Chrysanthemum, Carnation, and so on. Perhaps Ms. Trivedi herself could write and the ICAR could publish them. Priced moderately, they would be most popular.

I cannot say that Ms. Trivedi's book contains much that is new or original but it is nevertheless a noteworthy addition to the meagre literature on Home Gardening in India and should be eminently useful to gardeners. Garden owners too should sit up and think how they can surround themselves with beauty, colour and grace.

The book is well printed and produced, and at Rs. 50/- is indeed moderately priced.

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Annual Review of Phytopathology. Vol. 21 (Annual Reviews Inc. 4139 EL Caminoway, Palo Alto, California 94306, U.S.A). 1983 pp. 423. Price: \$ 27.00 (USA) and \$ 30.00 (Elsewhere).

The volume starts with a Prefatory Chapter on "Research on the hypersensitive response" followed by two papers on Historical perspectives covering the life and work of Prof. F. D. Heald and Erwin F. Smith, two outstanding personalities of USA, who were instrumental in the development of training and research in Plant Pathology in the beginning of the 20th Century. In addition, there are 8 papers dealing with fungal, viral, mycoplasmal, bacterial and nematode pathogens; two papers each dealing with Physiology of host-

pathogen interaction and appraisal of plant disease; one paper each dealing with breeding for resistance, Epidemiology and influence of environment, Biological and cultural control, Extension Plant Pathology—challenges and opportunities and Action of toxicants and chemical control.

Prof. Tomiyama who has spent his life time on the study of host-pathogen interaction and hypersensitive response, has elegantly incorporated his findings in this paper. According to him "disease resistance seems to be disordered and haphazard. However, it is not an incoherent pathological phenomenon but a defence response to invasion by a parasite that occurs step by step in perfect order according to a definite rule".

The two papers on Historical Perspectives covering the life and works of Pioneer Plant Pathologists of USA Prof. F. D. Heald and Erwin F. Smith are informative and inspiring. The paper "Mechanisms of Spiroplasma Pathogenicity" by Daniels provides valuable information on these little known, tiny helical procaryotes especially their habitats, diseases caused by them in plants, vertebrates and insects. Development and use of mathematical models in plant pathology has been rather slow. Further in comparison to air-borne diseases, modeling of soil-borne pathogens is still in its infancy. Modeling is an attempt to resolve expressions for purposes of description, prediction analysis and resynthesis of a system. The review by Gilligan on this subject brought forward models for primary infection together with a discussion on secondary infection and disease progress.

The search for toxins is an important part of modern plant pathology. An understanding of the pathological role of toxins in relation to epidemiology of diseases as well as successful pathogenesis, appears to be a critical need and may be the ultimate goal of toxin study for plant pathology. The paper "Host specific toxins and chemical structure from *Alternaria* species" fully reflects the above objectives wherein theoretical and practical aspects of *Alternaria* toxins are discussed along with projections for future researches in this vital area. During evolution, plants acquired not only the ability to adapt themselves to hostile environments, but also versatile defence mechanisms against enemies. Whatever the molecular basis of evolution may have been, parasites as well as host plants coevolved for their mutual survival. The review paper "Induction of resistance or susceptibility by Ouchi" attempted to emphasize the concepts of induced resistance and susceptibility in the host pathogen interaction systems.

The paper "Extension Plant Pathology: challenges and opportunities" by Jacobsen has clearly focussed

the difficult role of an extension pathologist in USA who should mold research from his fellow scientists into applications that can be taught and understood by the producer (Farmer), his suppliers, consumers, University administrators and Governmental decision makers. The paper provides a lot of food for thought. Skylarkis in his paper "Theory and strategy of chemical control" has done a magnificent job of summarizing the basic mathematics of epidemiology of diseases and discusses in detail the implications on the use of chemicals in disease control. Recombinant DNA technology is increasingly being used to determine the sequence of plant viral genomes. The characterization of plant viral nucleic acids by hybridization analysis with labelled complementary DNA is a powerful technique for comparison of viral nucleic acids. The paper "A molecular biological approach to relationships among viruses" by Gould and Symons presents a critical appraisal of the various methods currently available to the molecular biologist for a comparison of the genomes of plant viruses at the nucleic acid sequence and functional levels.

The other papers in this volume especially grain molds in the tropics, problems and importance, Ecology and epidemiology of bacterial plant pathogens, pathology of pine wilt disease caused by *Bursaphelenchus xylophilus*, Fungal parasitism of woody plant roots from mycorrhizal relationships to plant disease, Breeding strategies for stress and disease resistance in developing countries, the role of bacterial ice nucleation in frost injury to plants, the International Meloidogyne project etc are all of immense importance to Plant Pathologists, molecular biologists and physiologists. Space does not permit detailed comments on them.

The volume comprises of reviews on a variety of topics of great interest to a wide spectrum of scientists—molecular biologists, plant pathologists, physiologists, nematologists etc. The editors of the volume no doubt deserve the credit for the choice of the topics and the authors, the compliments of the readers for their painstaking efforts.

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Chemical Analysis of Archaeological Deposits from India by R. V. Joshi and Bhasker C. Deotare, Deccan College P. G. and Research Institute: Poona; 1983, pp 103 + xxiv Photographs, Price: Rs. 150/-

Archaeology is gradually becoming a science oriented subject. With the development of scientific aids and investigations the archaeologist is trying to make use of them for his own purpose in trying to understand the human activity in the remote past. The present report shows how a chemical analysis of soils and other deposits throw welcome light on the problems of man. The Deccan College is, perhaps, the only institution in India which is doing such investigations in the field of archaeology and the present report is first of its kind and hence archaeologists and historians welcome it.

The monograph is divided into six chapters. The first one is in the form of an introduction, whereas the methodology is discussed in the next chapter. Collection, preparation, particle-size, chemical analysis and statistical methods are briefly described here. The third chapter is devoted to a study of the present environment including geology, physiography, climate, natural vegetation and soils. The fourth chapter which is the subject matter of this monograph, is devoted to a study and analysis of 25 archaeological sites such as Ahar, Burzahom, Lothal, Rupar, Naikund, Sanganakallu, Somanath and Virapuram. Most of these are well known archaeological sites with well defined evidence for multi-cultural occupation. The chemical analysis from each of these sites is discussed under the headings namely PH, Electrical conductivity, Organic carbon, Nitrogen, and Phosphorus. These details are also given in tables.

The fifth chapter contains a brief discussion involving the various problems of the absence or the presence of certain contents. For example Dangwada shows

very low Phosphorus content in between Saka and Shunga periods. Archaeologically this level is sterile. From this it could be concluded that the low level of Phosphorus is due to the fact that the site was deserted and was reoccupied in the Saka period. Similarly the low phosphorus at Bhimbhetka is an indication of occasional or seasonal occupation of the site. However, the authors are also conscious of the fact that there is considerable variability of elementary concentration on passing from one layer to another. Thus the chemical composition can give clues to the human occupation, the density of the population etc. From the discussion they have been able to come to some tentative conclusions which are otherwise not known to archaeologists by the traditional methods of archaeology. This really holds the Key for the necessity and desirability of chemical analysis in Indian Archaeology. However, it has to be pointed out that scholars in chemistry have to examine the data more minutely and point out the deficiencies if any in the methodology and the analysis.

The book has a very useful bibliography, followed by twenty four good photographs. R. V. Joshi, the senior author of the monograph is a well known prehistoric archaeologist. He and Deotare deserve our thanks for this interesting monograph which opens new vistas in the field. The volume has an appreciative foreward from Robert C. Eidt. Director of the soils laboratory of the University of Wisconsin, Milwaukee, U.S.A. The printing and get up are excellent.

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