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Book reviews

Getting into Print, by P. SPRENT. ix + 214 pp. London: Chapman & Hall (1995). £14.99 (paperback). ISBN 0 419 19220 4.

No matter how good your science is, it is of little value, and you will certainly not receive due recognition for it, unless you can communicate your ideas and results effectively. Verbal communication, at conferences, to small groups or the media, is obviously important, but to make a long-lasting contribution that reaches a wider audience, it is essential that scientists use written communication.

There are many books on how to write reports, scientific papers or popular articles but, as the author points out in his Preface, few books look at scientific and technical writing as a whole. This book really is comprehensive and covers everything from the initial stages of planning a piece of writing, through the mechanics of how to write for different purposes, to dealing with publishers and the media.

As would be expected from a book on writing techniques, this book is written in a clear, informative manner. There are plenty of examples, showing both good and bad practice, that assist the reader in a practical way. It also has that peculiar quality, normally reserved for good encyclopaedias – you can open it at random and find yourself so engrossed in an interesting topic that you find you have read the whole of that section. Whether you are contemplating a short article or a complete book, an instruction manual or a magazine, this book will guide you through the process. There is even a section on how to write book reviews! The author gives plenty of advice on the use of modern technology, such as word processors and CD-roms, but it is unfortunate that this book was produced maybe a year too early to give guidance on the emerging field of electronic publishing. Although this does not fit strictly into the title of 'Getting into Print', most of the principles apply equally to writing for this medium. Perhaps the author could be persuaded to produce a second edition to fill this gap.

This book will prove interesting and valuable to the whole scientific and technological community. It is recommended that anyone who has to write should spend some time reading first. In particular, they should read this book.

P. GARNSWORTHY

Land and Water Development for Agriculture in the Asia–Pacific Region, by V. V. N. MURTY & K. TAKEUCHI. xii + 152 pp. New Hampshire: Science Publishers (1996). $65.00 (hardback). ISBN 1 886106 60 6.

This is a rather strange book. As the authors explain, it brings together in modified form some of the papers they have presented at various expert consultations, seminars and symposia over the last 5 years. As a way of making one's own publications more accessible this is excellent, but as a book it does not seem to address an obvious audience. The topics covered range widely in both subject and level, from general irrigation management, through water lifting and groundwater management, to water conservation on rainfed hillslopes.

The result is like having a set of executive summary papers, each clearly raising the issues and giving recommendations, but lacking depth or any argument of different viewpoints. The chapter on irrigation performance evaluation, for example, consists of brief descriptions of the many different criteria, but little discussion of which are most useful to collect, or indeed whether it is cost-effective to collect them at all. The recommendations, too, often seem to assume a centrally managed system with infinite resources; lots of things 'should' be done and 'need to be' done, but who, what, why and how is less clearly addressed.

The reviewer was left feeling dissatisfied at the end of each chapter, with interest whetted and questions to ask but no answers. The authors could clearly teach us a lot. Unfortunately, this book does not do it.

E. K. WEATHERHEAD

Mechanisms of Plant Growth and Improved Productivity, ed. A. S. BASRA. x + 476 pp. New York: Marcel Dekker (1994). (hardback). ISBN 0 8247 9192 4.

The title of this book suggests that it is aimed at a readership whose main interests lie in the field of crop breeding, who wish to improve their understanding of the processes underlying optimal crop performance and the available techniques for achieving such performance. This book contains much interesting and well-written material, but I am not sure that it

will fully meet the requirements of such a readership. Like any multi-authored volume, it encompasses a wide range of styles, and the assumed level of background knowledge on the part of the reader is also quite variable. Thus, Chapter 7, on the impact of the greenhouse effect, should be immediately comprehensible to most biologists, agriculturalists or plant breeders. In contrast, Chapter 4 (on nitrate assimilation) and Chapter 11 (on induction of gene expression in response to pathogens) both assume a good grounding in the basics of biochemistry and molecular biology. Yet all three chapters are clear, informative and of relevance to the subject. In addition, the coverage of topics is patchy, although, as the editor rightly says, in a single volume of this size it is impossible to do full justice to the breadth of the field.

There is some duplication: for example, Chapter 2 covers plant mineral nutrition and Chapter 5 nutrient deficiencies, and there is inevitably some overlap between these two topics. Similarly, Chapters 8 and 12 both include similar sections on methods for the production of transgenic plants. On the other hand, several factors of key importance in determining crop productivity are under-represented. The editor makes the highly contentious statement in the Introduction that 'Plant productivity is simply a measure of the total photosynthesis of the plant less … respiration'. Many plant physiologists would strongly dispute this assertion since, although all plant productivity is indeed *derived* from photosynthesis, the constraints on productivity are more frequently those which limit cell division, expansion growth, floral initiation, leaf area duration and so on. There are no chapters specifically focusing on any of these areas, although they are discussed in several; nor, perhaps more surprisingly, are there any on photosynthesis itself, although I found the opening chapter on photoassimilate transport very useful.

This book was published in 1994, and the bibliographies suggest that most of the chapters were completed in 1991 or – at the latest – 1992. An inevitable consequence, and a problem for most scientific textbooks, is that much of the material is now a little dated. This is particularly true in the case of the later chapters on gene isolation and the production of transgenic plants, where technology has made huge advances in the past few years. Thus, for example, the powerful differential display method for isolating genes expressed under certain conditions or in certain tissues did not exist when these chapters were in preparation; nor did the silicon carbide 'whiskers' technique for the transformation of monocots.

In summary, this book brings together much of interest and relevance to those working on crop productivity and improvement; but no one reader is likely to find all the chapters of equal value, and therefore it is best recommended as a library rather than an individual purchase.

HELEN OUGHAM

Essential Oil Crops, by E. A. Weiss. xi + 608 pp. Wallingford: CAB International (1996). £75.00 or $135.00 (hardback).
ISBN 0 85199 137 8.

This book is both well written and well presented. It considers plant species from 13 families which are valuable because of the oils that can be extracted from various plant parts for use in the food, cosmetic and health industries.

There is an enjoyable and instructive introduction which traces the history of the use of aromatic substances from the earliest times to the present. The author comments on the fact that whereas the composition of the essential oil is becoming known, the details of the metabolic processes involved in the biosynthetic pathways are less well known and require investigation. The control of oil production from the various crops is becoming more certain with improvements in agricultural technology. The author also makes reference to the different roles that the essential oils may play in nature and believes that demand is likely to rise rather than fall in the future. Figures provided for the amounts of 35 specified and an unspecified group of oils imported into the USA seem to support this view.

There is no chapter of conclusions as such, but it is pointed out that it is important to encourage production in countries where cash crops are limited and outside inputs into rural incomes are difficult to obtain. The last telling phrase in the Introduction points to the advantages of 'Trade not Aid' to help developing economies.

The families considered are the *Annonaceae*, *Geraniaceae*, *Gramineae*, *Lamiaceae*, *Lauraceae*, *Myristicaceae*, *Myrtaceae*, *Oleaceae*, *Piperaceae*, *Rosaceae*, *Rutaceae*, *Santalaceae* and the *Zingiberaceae*.

Consideration of the important pine oils has been omitted, because they are often the product of developed countries. The emphasis of the book is on the growth and harvesting of the essential oil plant crops rather than on the essential oils themselves. Each chapter considers, for each species of importance within the family, the following topics: Botany, Ecology, Soils and Fertilizers, Cultivation, Harvesting, Distillation, Pests and Diseases, and Products and Specification. Although there will be value in reading the book in its entirety, it is more likely that it will be used as a source of information about certain families or a particular species. It will certainly encourage plant scientists to be more aware of the great wealth of plants available for use by man.

The final, valuable, chapter in the book is on

'Distilling and Extracting Essential Oils' and the description and illustrations provided are excellent.

It is becoming rare to find a book written by a single author and this one is particularly welcome for the width and depth of the knowledge possessed by the author. He admits that it has had a long gestation, but nevertheless the use of recently published evidence in each chapter indicates that it is up-to-date.

W. J. WHITTINGTON

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