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BOOK REVIEWS

Grassland Ecophysiology and Grazing Ecology. Edited by G. Lemaire, J. Hodgson, A. de Moraes, P. C. de F. Carvaldho and C. Nabinger. Wallingford, UK: CABI Publishing (2000), pp.422, £65.00. ISBN 0-85199-452-0.

This book consists of invited papers presented at an International Symposium held in 1999 in Curitiba, Brazil. With 20 chapters, utilizing over 1200 references the book comprises five sections: environmental constraints and plant responses to defoliation; morphogenesis of pasture species and adaptation to defoliation; plant-animal interactions; sustainable grazing management of natural pastures; and problems of animal production related to subtropical and temperate regions of South America. Authorship is international with 42 contributors from 10 countries.

The book fulfils the objective of an up-to-date overview of plant ecophysiology and ecology *vis-à-vis* grazing management and sustainability of natural pasture ecosystems. It underlines the needs for interdisciplinary work, integrated research from plant through to ecosystem level, agro-ecological approaches to rural development, and worldwide liaison and collaboration among research teams. Universal embracement of these tenets would hasten the achievement of sustainable productivity from temperate and tropical natural pastures within which enhancement of the stability of grass-legume balance is a major desideratum – though the book's treatment of legumes *per se* falls somewhat short.

It is an excellent treatise and valuable source of information and references for kindred researchers and advanced students of plant ecology and physiology, grassland and range science and animal science.

John Frame

Dormancy in Plants. From Whole Plant Behaviour to Cellular Control. Edited by J-D. Viérmont and J. Crabbé. Wallingford, UK: CABI Publishing (2000), pp.385, £55.00. ISBN 0-85199-447-4.

If you are looking for a quick answer to the question 'what is plant dormancy?' then this book will disappoint, not because of the quality of the writing, which is good to excellent, but because the complexity of the phenomenon, clearly illustrated here, does not allow a simple answer. Dormancy is multi-faceted: endogenous time-dependent changes and environmental control suspend 'visible growth' via biosynthetic pathways (hormones and storage compounds), localized changes in water relations occur, sensitivity to stimuli is altered and morphological modifications prepared. To a researcher this complexity is an attractive challenge!

These conference proceedings contains 25 chapters, divided between five main parts (whole plant and organ physiology; water relations and stress; abscisic acid and hormonal control; biochemical and cellular aspects; and genetics and molecular biology). Nearly half of the chapters report seed studies (primarily on temperate trees, cereals and *Arabidopsis*), the others deal with vegetative tissue (mainly buds, but with contributions also on bulb, tuber and bark material). Most chapters are, essentially, research papers, but there are also a small number of short and lengthier reviews. This mix of presentation styles and the material content does not make for an easy read and makes it relatively difficult to pull out the key messages on future research needs. A final chapter – a sort of

conference conclusions – would have helped. Nonetheless, for anyone involved in research on dormancy in vegetative tissue or seeds there is much here to savour.

Hugh W. Pritchard

Main Pests and Diseases of Cotton in Sub-Saharan Africa. By M. Vaissayre and J. Cauquil. Montpellier: CIRAD-CTA (2000), pp.60, FF100.00. ISBN 2-87614-16-6.

This useful field guide covers the main pests and diseases that affect cotton throughout Africa, although it is more specific to West Africa. It is divided into sections on arthropod pests, beneficials, diseases and mineral deficiencies. The section on insect and mite pests is sub-divided according to the pest group predominating at each growth stage. The book is well illustrated and the colour photographs of insect pests and diseases are excellent, with the sole exception of Photo 74 which looks more like the effects of root damage, by termites perhaps, than the symptoms of *Fusarium* wilt.

R. J. Hillocks

The Genetics and Breeding of Taro. By A. Ivancic and V. Lebot. Montpellier: CIRAD (2000), pp.194, FF 230.00. ISBN 2-87614-414X.

This book is valuable because it records the authors personal experience. Whether for true taro (*Colocasia esculenta*), giant taro (*Alocasia macrorrhiza*), giant swamp taro (*Cyrtosperma chamissonis*) or tannia (*Xanthosoma sagittifolium*) the excellent illustrations of complex plant structures and descriptions of their role both in breeding procedures and for plant performance are from personal observations.

The book is timely because, although taro cultivation is ancient, production is becoming intensive and market requirements more demanding. Breeding programmes began in the 1970s and are acquiring international importance.

Information is given on the species origins, reproductive biology and genetic resources, and procedures are described for breeding for yield, quality, disease and pest resistances and adaptation to specific environments. The authors discuss total biological yield, because all parts of taro – corms, leaves and inflorescences – are eaten. Modern markets, however, increasingly seek only the corms. Corm yield is the difference between total yield and yield of tops. In root crops, tops usually take preference over roots for resources hence breeders will need to determine the best balance of plant structure for high corm yield. This could be as important as the authors priority for studies of DNA fingerprinting to characterize genetic diversity and global groupings.

D. L. Jennings

Writing and Presenting Scientific Papers. By B. Malmfors, P. Garnsworthy and M. Grossman. Nottingham, UK: Nottingham University Press (2000), pp. 133, £15.00. ISBN 1-897676-92-1.

This small but practical book is an excellent starting point for anyone commencing a career in scientific research. Whilst emphasizing that nothing can overcome bad science, the authors make two further important points. First, they are of Swedish, British and American origins and work in a 'mix of writing cultures'. Second, the book does not purport to give rules for writing but 'guidelines for good practice'.

Nothing is more boring for a scientist than reading about how to communicate but it is a measure of the success of these authors that this reviewer was immediately attracted to read the book both by

its language and its overall presentation. The writing packs a considerable punch but often it is humorous and gets its message over with an effective but light touch. The book finishes with a brief but compelling chapter on *Reviewing Papers and Presentations* which, if fully implemented by an editor, may deter referees from undertaking the task but which is not less valid for all that.

This book is the partial answer to an editors prayer and should be standard reading for all engaged in scientific research. It will not obviate the need for authors to adhere to the detailed instructions for each journal but at its modest price it is a good foundation for scientific communication.

J. G. W. Jones

Planning Agricultural Research: A Sourcebook. Edited by G. Gijssbers, W. Janssen, H. H. Odame, and G. Meijerink. Wallingford, UK: CABI Publishing in association with the International Service for National Agricultural Research. (2001), pp.348, £29.50. ISBN 0-85199-401-6.

The four editors, employees of the International Service for National Agricultural Research (ISNAR), have compiled a valuable sourcebook on planning agricultural research. It has 36 contributors to 29 chapters and is divided into four parts.

The Context of Agricultural Research Planning, discusses the changing scene in which planning occurs. The chapters here on globalization and regionalization are timely but fail to address a key issue for national agricultural research services (NARS) in the developing world. I return to this below.

The Content of Agricultural Research, follows down a hierarchy from Science and Technology Foresight (STF), a broad visionary planning process, through increasingly focussed steps of Strategic, Master, Program and Project planning, to Experiment planning. It has additional chapters on Financial and Investment planning and on planning Training. Given the recognized problems of imbalance between salaries and operational funds, and of poor quality research, these are particularly useful.

In Part III agricultural research planning as an institutional process is examined with emphasis on who should be involved. In Part IV tools for the different types of planning are described. There is a useful glossary and an equally useful list of websites on agricultural research planning.

ISNAR is mandated to support developing country NARS. It was disappointing, therefore, to find that this book on agricultural research planning ignores a major question posed by the new information age: how to achieve a balance between strategic, applied and adaptive research through both domestic investment *and by monitoring results in agro-ecological homologues in other countries*.

Investment in adaptive research, essentially local specific, is an imperative for smallholder agriculture. On the other hand, these days strategic and applied research results are best treated as an overhead and, where possible, are more cheaply culled from elsewhere. In particular, poor countries with diverse agro-ecologies and, therefore, relatively narrow markets for new technologies need to monitor relevant results worldwide.

The book offers little guidance on the different planning regimes suited to the diverse circumstances of NARS. This is surprising, as ISNARs past work has demonstrated a keen awareness of the problems of research planning in poor, small countries.

Mike Collinson

Readers may be interested to know about the following publications received but not reviewed because of their limited relevance to the majority of readers of *Experimental Agriculture*.

Report of a Working Group on Forages. Seventh Meeting, 18–20 November 1999, Elvas, Portugal. Compiled by L. Maggioni, P. Marum, N.R. Sackville-Hamilton, M. Hulden and E. Lipman. Rome: IPGRI (2000), pp. 226. No price quoted. ISBN 92-9043-451-1.

The World Bank Forestry Strategy. Striking the Right Balance. By U. Lele, N. Kumar, S. A. Hussain, A. Zazueta and L. Kelly. Washington DC: The World Bank (2000), pp.150, US\$22.00. ISBN 0-8213-4841-8.

A Training Guide for In-situ Conservation on Farm. Version 1. By D. I. Jarvis, L. Myer, H. Klemick, L. Guarino, M. Smale, A. H. D. Brown, M. Sadiki, B. Sthapit and T. Hodgkin. Rome: IPGRI (2000), pp.161, no price quoted. ISBN 92-9043-452-X.

Report of a Task Force on Wild Species Conservation in Genetic Resources and a Task Force on On-Farm Conservation and Management. Compiled by B. Laliberté, L. Maggioni, N. Maxted and V. Negri. Rome: IPGRI (2000), pp.80, no price quoted. ISBN 92-9043-457-0.