

Book Reviews

Tropical Pasture Utilization

L.R. Humphreys. Cambridge University Press, Cambridge, UK. 206 pp.

Recommended retail price A\$120. (Available through the Tropical Grassland Society for the special price of \$110, plus postage (A\$2.50 within Australia), or \$11.20 and \$33.00 (overseas — surface and air, respectively).

This book deals with the theory and practice of grazing tropical and sub-tropical pastures. Cut-and-carry systems and experiments under cutting are referred to as appropriate, but the emphasis is on grazing. The introduction opens with a short section on which the author outlines six “misleading legacies of past thought” about pasture utilization; namely, the importance of rotational grazing, the importance of carbohydrate reserves, Clementsian succession, non-selective or short duration grazing, the value of fodder conservation in the tropics, and the need for cut-and-carry systems for dairying in the tropics. Having dealt briefly but forthrightly with these topics, the book has three major sections.

The first section describes the variation in farming systems in the tropics, noting that in many areas they are closely linked with the production of food crops. The second section describes the effect of grazing on the pasture in terms of soil properties (such as erosion), energy flow, pests and diseases, sward microclimate, growth, distribution of assimilate and changes in botanical composition induced by grazing through its effect on plant demography and plant interference. The third section deals with the effect of the pasture on animal, emphasizing such factors as sward structure, grazing behaviour, stocking rate, providing continuity of feed, fodder conservation and supplements. The last chapter in this section deals with grazing systems, grazing with a mixture of animal types, and the use of fire. Some suggestions about the priorities for future research are briefly presented in a con-

cluding chapter. The author believes that ‘plant-based’ research is more likely to bring about improvements than ‘animal-based’ research and top priority is given to plant improvement programs. All these topics are covered in considerable detail, so although the author has emphasized practical aspects, the book is essentially one for the scientist or reader who has a good scientific background.

There are a few issues presented in this book that may not have been adequately covered. The author strongly emphasizes the importance of stocking rate as compared with grazing system and has produced a useful table based on the results of some 60 grazing experiments to give a sound basis for his dislike of rigid rotational grazing systems. I would not argue with this, but believe the benefits of strategic management strategies such as resting, or even heavy grazing, on changing botanical composition may have been under-stated. This is especially so if such management interventions are made during periods of active pasture growth. This point is briefly mentioned in several places in the text but is somewhat swamped in the chapter dealing with grazing management. Likewise, I believe the role of animal supplements, particularly P, may not have been adequately covered as such supplementation can have major benefits for animals but has the potential to adversely affect pastures. The book is almost free of errors. Spelling errors are very rare. A few table and figure captions are somewhat obscure and the caption for table 5.2 is incorrect (the values in the table relate to “% recovery of seed”, not “% viability”). A final little whinge is that I can’t understand why the author uses a word like “concatenation”. There is an index to topics, but not to species.

Having dealt with the few negatives, I can strongly recommend this book. The structure of the book means that discussion of processes in the body of the book comes together well in the final chapters dealing with stocking rate and grazing management. The writing is usually very clear and easy to follow, and arguments are well presented. There is probably more than one figure

or table for each page. This enhances the visual appearance of the book and avoids having to read lengthy and unbroken slabs of text. There are over 900 references; quite a few from 1988, an odd one from 1989 and I even noted one from 1990. These references will be very useful to readers who wish to follow up particular points. Although most of the references are from Australian studies, there is a reasonable coverage of published information from Asia, Africa and South America.

This book is a must for all libraries, large or small, where there is an interest in tropical pastures. I would also suggest that individual scientists with a strong interest in the grazing of tropical pastures seriously consider buying one for their own use.

R.M. Jones

Ecosystems of the World

Vol. 17A Managed Grasslands — Regional Studies

A.I. Brey Meyer (ed) 398 pp. Published 1990.

Vol. 17B Managed Grasslands — Analytical Studies

R.W. Snaydon (ed) 286 pp. Published 1987.

Available from: Elsevier Science Publishers
P.O. Box 330, 1000AH Amsterdam, The Netherlands or P.O. Box 882, Madison Square Station, New York, NY 10159, USA

Price: Vol. 17A US\$194.25/Dfl. 340.00

Vol. 17B US\$146.25/Dfl. 300.00

These two volumes are complementary in that Volume 17A is a review of managed grasslands of temperate areas while Volume 17B deals with ecological and physiological processes occurring in those grasslands. However, the temperate grasslands of Australia and New Zealand are covered in Volume 17B rather than 17A. There is little discussion of the managed grasslands of North America.

The absence of a major effort to include the experience of ecologists and physiologists working with improved or managed tropical grasslands will be disappointing to those in the tropics. There are now several texts published on the management of tropical grasslands, in addition to a very large number of scientific articles. Mention of

tropical aspects of grassland do occur in Volume 17A in the chapter on the grasslands of South Africa and in that on seasonally flooded savannas in Venezuela. Nevertheless, there is sufficient of interest to workers in the tropics to warrant these books being made accessible through libraries.

Volume 17A consists of 13 chapters grouped into three sections. The first section gives examples of managed grasslands in Great Britain, Spain, the Central Massif in France, South Africa, Japan and northern Patagonia in Argentina. These chapters are essentially descriptive but with the various authors emphasising different aspects of the grasslands in those countries. That on Great Britain gives a historical perspective but also mentions that grassland is only one component of a feeding system that also relies on inputs of supplementary feed. The chapter on Spain describes the complexity that has developed through the evolution of different husbandry systems in the various parts of the country. An ecological perspective is developed in describing the grasslands in the upland areas of France, particularly with respect to nutrient cycling and biological activity. The chapter on South Africa is quite comprehensive and would be a good introduction for those interested in the grasslands of that country. That on Japan is a good introduction to the native grassland but does not do justice to the improved grassland research and practices in that country. In contrast, the chapter on Patagonia would be of immediate interest to many pasture workers in northern Australia as it specifically deals with structural and dynamic characteristics of overgrazed grasslands.

The next section in Volume 17A gives examples of strong human impact on grasslands. The chapter on the creation of seasonally flooded savannas by the use of dykes in Venezuela should be of interest to all those who have been involved in developing and promoting ponded pastures. Following a primitive method used by the local population more than a hundred years ago, some 300,000 ha have now been modified by the use of dykes. Details are given of species adapted to various degrees of flooding. It was interesting to note that *Hymenachne amplexicaulis* and other grasses of the deeply flooded areas are C₃ grasses. The other chapters on grasslands on peat soils and turfgrasses in temperate humid climates will be of minor interest to those in the tropics. It was surprising to see that the impact of heavy use of