

Book reviews

LEGUMES: The Australian Experience. The botany, ecology and agriculture of indigenous and immigrant legumes

By B.R. DAVIDSON and H.F. DAVIDSON. Published by Research Studies Press Ltd, Somerset, England. 471 pp. £45.

This book provides a detailed review of legumes and their development in Australia. The authors suggest that there are about 2000 native legume species in Australia, which represents about 10% of the estimated 18 000 species of plants known in this country. Man has had a major influence in increasing the number of legumes present in Australia. Therefore, it is not surprising that the authors make the point in their preface, that legumes have played a major part in the Australian economy, for example, by trebling wheat production and doubling the production of wool and beef.

The book commences by tracing the origins of legumes, through fossil evidence, paleontology, palynology and continental movement theory. The authors devote a section to a possible time-frame of establishment and development of Australian legumes. There is then a chapter on the taxonomy of both Leguminosae and Rhizobiaceae and then one on the influences of climate and man on the development and distribution of legumes in Australia. These make interesting reading and set the scene for the remainder of the book, which deals specifically with the contribution of legumes to Australian agriculture.

The authors include a major section on the general subject of nitrogen, including nitrogen cycling, nitrogen fixation and nitrogen losses. This is an excellent review and would be of particular benefit to students. The following chapters deal with the history of settlement in Australia and how it has influenced the development of vegetation types, especially legumes. The farming industries are also examined, to show how each has influenced the vegetation and landscape of Australia.

A large section is devoted to sub clover, hardly surprising in view of its impact on the grazing industries of southern Australia. Chapters trace the development of the first cultivars, the research conducted on the influence of superphosphate on

the performance and spread of sub clover and the trace element work, which solved many of the regional problems encountered as it became widely used. The authors also cover the down side of sub clover development — clover disease in sheep, bloat and the acidification of soils.

There is a section on pasture development in the subtropics and tropics. This chapter traces the shorter, but none the less dramatic, development of tropical legumes and the possible future prospects in this field.

Finally, the authors deal with legume crops. The history of the development and importance of green, field and chick peas, lupins, peanuts and soybeans is traced throughout Australian agriculture.

The book provides a detailed Appendix containing a key to the classification of the Sub-families of Leguminosae in Australia. Each is split into Tribes, Subtribes and Groups and is described in terms of distinguishing features and distribution within Australia. A comprehensive reference list is provided by the authors.

If there can be a criticism of the book, it is that it is only sparingly illustrated with line drawings and with only one black and white plate. It is a pity that cost obviously prohibited illustrating a cross section of our legumes, many of which possess attractive flowers and foliage. I was also uncomfortable with the typesetting; the light, 1.5-spaced text was less than pleasing to the eye, although it did not make the book difficult to read.

The book is well written and is very readable. History is interwoven with taxonomy, ecology and botany into much more than a dry textbook about legumes in Australia. It is the development of the flora of Australia, interwoven with the story of the settlement of Australia and its achievements in Agriculture.

The book is an important work for scientists, ecologists and students and will provide a useful reference for those working with legumes.

Kevin F. Lowe