

## EXOTIC FLORA

### The Golden Age of Plant Hunters

By Kenneth Lemmon. Pp. x + 229 + 20 plates. (London: Phoenix House, 1968.) 84s.

THIS is a middle-age book. The time comes after studying and growing plants that we can pause to consider why we have made their acquaintance. The British Isles are famous for their exotic flora in parks and gardens. This book tells how many of the exotics were introduced through the devotion of a few, mostly underpaid and ill-educated gardener-explorers between 1768 and 1836. Now we order plants by air-mail. They shipped them by long and boisterous sailings and on arrival there were many disappointments as rotting seeds and dead stumps were found. The zeal of the wealthy horticulturists succeeded, however, with something like a one per cent return. The expense in obtaining *Amherstia nobilis* was fatuously uneconomical, yet the duke won. Horticulture is not a cause but a measure of civilization. Why, it is hard to say, but this book proves it and that there is no end in sight to the passion. We can follow the urge which drove the pioneers and the author to record their adventures, bearing in mind the example of *Amherstia*, though it comes near the close of the book.

Seven characters are chosen about whom the story is woven. The great Joseph Banks (Australasia) comes first. Then there follow Francis Masson (South Africa), Bligh and the breadfruit with the Great Cabin and the mutiny, which is rather out of keeping, for the breadfruit is scarcely known in Britain, William Kerr (China), George Don (tropical America, West Africa), David Douglas (North America), and John Gibson (India). Few persons, nowadays, associate anything with most of these names, if they have been heard of at all, but, having read, they will be glad of the remembrance. Whether the young will fall for the many fell circumstances which never quite befell is doubtful, though experience can forgive an enthusiastic pen. Finally, success came through the invention of Dr Nathaniel Bagshaw Ward—it is interesting to speculate on how many modern botanists could think this out.

The result is a solid book for libraries with a wide appeal, not only to horticulturists. There is an uneasy feeling, nevertheless, that some other countries did better. The book is written with insularity and the scientific would have preferred closer dovetailing with progress on the Continent whence, of course, as many great and small, rich and poor, equally intrepid plant-collectors went forth. The botany, on the whole, is good, though here and there it falters. The print is impeccable; the illustrations are attractive, especially the reproduction of woodcuts; and the style is friendly, if florid. There must have been much in common between Banks and the Maori chief (opposite page 39), and it is an achievement to have combined them with Douglas and Gibson in so worthy a volume.

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## CALIFORNIAN COCCIDS

### Mealybugs of California, with Taxonomy, Biology, and Control of North American Species

(Homoptera: Coccoidea: Pseudococcidae.) By Howard L. McKenzie. Pp. viii + 526. (Berkeley and Los Angeles: University of California Press; London: Cambridge University Press, 1967.) \$25; 238s.

THE first 47 pages contain nine short chapters, introduction, economic importance, control measures, ecology, biology, cytology, field and laboratory studies, morphology and classification, and a key to the genera of North American Pseudococcidae. The next 445 pages are a taxonomic account of the 35 Californian genera and 193

Californian species of mealybugs. The remaining 33 pages contain a Californian distribution table, bibliography, host plant index and general index. A key to all the North American species of mealybugs is given for each genus represented in California. Each Californian species is illustrated by a full page diagram and details are given of synonymy, other descriptions and accounts of the species, the type locality and host plant, other North American distribution data, additional host plants, external features, habitat and microscopical recognition characters. Detailed Californian collection data including a distribution map are given for each species. The first four coloured plates contain 36 photographs of living mealybugs and the remaining 21 coloured plates are reproductions of paintings of mealybugs on their host plants with the habitat illustrated in the background. The book is printed in clear type on good paper and the production can fairly be described as lavish.

Only one misprint was noticed, the specimens of *Heterococcus pulverarius* recorded from 'Keiv' on page 193 were in fact collected at Kew. The discrepancies of one between the number of species of *Anisococcus*, *Discococcus* and *Pseudococcus* said to occur and actually listed and described are probably inevitable in a work which takes many years to write. The latest concepts appear to have been successfully incorporated into the earlier parts of the text with the possible exception of the name *Dysmicoccus cuspidatae* (not a Californian species) which appears on page 157 and which is regarded as a synonym of *D. wistariae* in Europe. Collectors are advised to preserve attendant ants in alcohol but some ant specialists prefer specimens killed and preserved dry. Even when the names of coccids are sectional headings they are set in italics and do not stand out as clearly as the paragraph headings for host plants, etc., which are set in bolder type. It is easier to use a revision when the insect name heading the section is set in the boldest type.

The high standard of coccid illustration in recent years is well maintained in the present monograph and is the major aid to coccid identification. Keys to genera are used relatively more by novices than by specialists, so it is a pity to see the couplet "2(1) Trilocular pores absent: Trilocular pores present at least somewhere on the body" so early in the key to genera without further amplification. Coccid specialists often recognize trilocular pores under the medium power of a compound microscope but a novice has to check each pore with the high power or even oil immersion. Hundreds of pores must be examined in order to confirm that no trilocular pores are present on *Heterococcus*. This is depressing for a beginner. The separation of *Tridiscus multiorbis* from *Radiococcus* by the considerable number of evident body setae will encourage the novice to use the diagrams rather than the written key. Some leapfrogging could have been avoided if couplet 27 had been replaced by 29, 28 by 27 and 29 by 28.

These criticisms are trivial and mostly detected because of the clear way in which the data are presented. Information previously scattered through coccid literature and in practice available to only a few specialists is now gathered into one volume available to all. The Californian ecologist and applied entomologist can now put a name to a mealybug specimen and have a lead into the literature concerning the species. The book is much more than this. It will be used not only in North America but also in other parts of the world because the widely distributed mealybugs of economic importance are well illustrated. A standard is set for future revisions of coccids from other regions. The chapters on ecology, biology and cytology are fascinating, summarizing what is known and indicating how much more is not. The book is expensive but there are few people interested in coccids who will not obtain a copy. Any organization dealing with mealybugs that does not acquire a copy is likely to have made an expensive economy,