

BOOK REVIEWS

Orchids from Java and Solomons

ORCHIDS OF JAVA. J. B. Comber. Bentham-Moxon Trust, Royal Botanic Gardens, Kew (England). 1990. 407 pp. Illustr. ISBN 0 94763 21 4. (Price not given). and ORCHIDS OF THE SOLOMON ISLANDS AND BOUGAINVILLE. B. A. Lewis and P. J. Cribb. Illustrations by S. Wickison. Royal Botanic Gardens, Kew. 1991. 335 pp. ISBN 0 947643 27 3. Price £19.50.

Jim Comber has for many years explored the interior of Java with his keen eyes and camera, always on the lookout for orchids. That may not be unique, but he has summarized here in this handsome volume much of his own experience, basing it solidly on the nearly two centuries of botanical exploration in the island.

Orchids unquestionably represent one of the major intersections of public and specialized, or it may be preferable to say popular versus technical-professional, interest in the plant world. Few other plant groups command such devotion from amateurs, and for good reasons; the extraordinary diversity of the orchids (yet the ease of recognition of an orchid as such); the wonderful colors and forms of their flowers; the range of problems involved in growing them, from rather easy to very challenging; and not least, the strong connection to commercial interest in orchids, with profits to be made in sales and from hybridizations.

More closely related to modern attitudes toward conservation and wilderness issues, orchids serve as a convenient and meaningful focus for estimating reservoirs of biological diversity, status of natural vegetation sites, and the effects of recent development on species survival.

In tropical areas, the vast majority of orchids are epiphytic, dependent to varying degrees on the forests in which they occur for their support, both in the obvious physical sense and in the more complex sense of environmental integrity. Forest degradation results very quickly in the decline and disappearance of orchid populations and numbers of orchid species. To that extent, a comprehensive floristic knowledge of the orchid flora may serve as a basis for modelling changes that involve many other components of the vegetation and at least indirectly of accompanying physical changes.

All this is by way of pointing to the great importance of works such as this, but I have to mention other aspects that are in their way just as important. First, this is a very well-designed, beautifully illustrated book with numerous very fine photographs, almost all in color, to illustrate the species. But unlike many other books on orchids, these are not just pretty pictures. Each is tied to an accurate description and a scientifically confirmed name, so that the work belongs as much to the scientific as to the popular literature. Moreover, every genus has a clear workable key to the species, so the book is actually a tool for identification. Although its size precludes it from being a field manual, copies of the keys could easily be made for field use.

There is a brief but useful introduction; a digest of the classification of the Orchids, a key to all the Javanese genera (designed for maximum utility; and thus often leading directly to a peculiar species), and at the end, a bibliography and index. In the middle, accounting for the major portion of the book is, of course, the systematic treatment of the genera and species. There are 130 genera treated (in systematic order, beginning with *Apostasia* and *Nieuwiedia*, going on to the slipper orchids, *Paphiopedilum*, and so on to the last genus *Acriopsis*). There are 731 (named) species of orchids in the flora of Java; in this book most species are illustrated by a photograph. The illustration is usually a close-up or semi-close-up of the flower(s) or part of the plant; in a few cases, it is a more distant portrait revealing also part of the habitat (but necessarily omitting floral details). The color printing is very good, and the photography itself generally of a very high standard. The pages are a somewhat thick, smooth, matte paper, and the type is easy to read. Use of bold face, italics, capitals, etc., is skillfully managed to highlight certain kinds of data.

The format is straightforward, and resembles a standard flora. (Indeed, if the remaining flora of Java were treated in the same way, that would be as splendid as it is unlikely to happen). Genera are numbered (in systematic sequence), with author, and with a brief, rather informal but "diagnostic" description. This is followed by one or more paragraphs of discussion. A key to species follows (in paired non-indented style). Each spe-

cies (numbered only within the genus) is provided with a nomenclatural heading—accepted name, with reference, followed by relevant synonyms—in turn followed by a concise description; note on distribution; and other commentary. The illustrations, most of which are from 4×5 cm to 7×9 cm and occur singly or up to 4 together on a page, are not numbered, but are placed near or next to the species entry and give not only the species name but a brief indication of where the subject of the photo occurred (e.g. “*Oberonia similis*—flowers—East Java, 1220 m, April”). I think there are no specific references to herbarium specimens, but it is probable that at least some of the photos are of plants preserved as specimens.

The classification appears to be very current, with genera such as *Porrorchis* Garay and *Sarcoglyphis* Garay recognized, and *Kingidium* Hunt is recognized but without much enthusiasm! Those familiar with R. E. Holttum's book on Malayan Orchids (Revised Flora of Malaya) will find some differences in generic concepts. It is not my intention to evaluate these (nor species interpretations) but the impression made by the book is that orchid taxonomy has been very carefully dealt with. Certainly the presentation of nomenclature, while very concise, conforms to scientific and scholarly usage.

A few minor criticisms may be made: some photos are a little too dark (cf. *Nephelephyllum tenuiflorum* on p. 106; *Gastrodia crispa* on p. 85). There is at least one new nomenclatural combination, and one new species (*Bulbophyllum comberi* Vermeulen), but I could not find these indicated as such in either the index or table of contents. (Incidentally, the new *Bulbophyllum* is accompanied by what may be the only line drawing in the volume). I did not find any typographic errors but there are one or two trivial lapses in style. On the whole, none of these are more than tiny warts on an otherwise very handsome countenance.

This book is highly recommended, and if the price (unknown at the time of writing this review) is at all reasonable, I am sure it will appeal to botanists, whether orchidologically inclined or not, to say nothing of the armies of orchidists, especially those who love “species” (as opposed to the more garish hybrids). Thank you, Jim, and thanks to Kew and the Bentham-Moxon trust. Indeed, kudos to all concerned, not least the printers who have done a very good job. Let us hope that numerous copies find their way to Java,

as well as to the great libraries and herbaria of the world.

Hard on the heels of Jim Combers new book comes this excellent review of the Solomon Islands orchids by Beverley Lewis and Philip Cribb. Somewhat smaller, less lavishly produced, but with 16 full-page color plates and numerous fine line-drawings by Sue Wickison, and paper-bound, this volume is in a series edited by J. M. Lock. The format is that of a flora with full descriptions and nomenclature, keys to all taxa, and detailed dissections illustrated. A little more complete than Comber's book in that typifications are indicated for all species, and the references are more detailed, this work is structured more formally because it represents a “first ever” of its kind. The Solomon Islands has not yet had a full-scale flora; if this book is regarded as a model for a flora still to be written, it serves admirably.

Geoffrey Dennis, “resident naturalist” in the Solomon Islands for over 40 years, provides a foreword; the book is in fact dedicated to him and G. Hermon Slade. It is certain that both these gentlemen are highly pleased, because this work is something of a landmark.

The introductory chapter provides sketches of the geography, geology, climate, vegetation, and past botanical exploration in the Solomon Islands. (It is worth noting at this point that the inclusion of Bougainville corresponds to our older concept of the Solomons as a geographical entity; politically, of course, it is today part of Papua New Guinea, and thus a “different country” but from a biogeographical standpoint there is much justification in retaining the older “shape” of the region). There are several tables with data such as a summary of the genera, numbers of species for each major island, numbers of species recorded from other areas outside the Solomons, etc. It is noteworthy that the entire orchid flora at present stands at 285 species, representing 85 genera. (These figures are interesting when compared with numbers for Java.) Three-fourths of the native species are epiphytes or climbers. Twenty-eight species and varieties are apparently endemic, and as is to be expected, these are related most closely to Papuan species.

The book includes one new combination, three new species (*Bulbophyllum melanoxanthum* J. Vermeulen & B. Lewis, *Corybas gemmatus* Cribb & Lewis, and *Dendrobium campbellii* Cribb & Lewis), one new subspecies, and one new variety. Usefully, these names are grouped in a separate list of new taxa (p. 15).

As to the classification followed, Dressler's system (of 1981) is used for the family and supra-generic groups. The key to genera is artificial, non-indented, and runs continuously from p. 19 to p. 26.

The systematic catalogue is actually in full floristic format, complete with typifications, synonymy (sometimes as a reference to another complete summary), and specimen citations. (Virtually all specimens cited are in Kew, so it might have been sufficient to state that unless otherwise indicated, collections cited are in K).

The clear typography and consistent format make a search for data very simple.

It is also good to see a generous inclusion of line drawings, which for the most part are devoted to one (rarely two) species and occupy a full page. Ms. Wickison has a clear style, and the careful depiction of dissected floral organs should prove very useful. Indication of scale of enlargement or reduction is found only in the caption (I would personally prefer a scale bar in the figure itself, which can be used as a direct ruler).

There is a bibliography followed by a page of Acknowledgements. From the latter it is apparent that the Australian Orchid Foundation provided significant assistance in the issue of the book.

The color plates are grouped together as 16 full page color plates of high quality photographs, mostly of floral close-ups, several to a page, assembled together between page 324 and page 325. The identity of the photographer was not found, but the photos are very good and printed on glossy paper (in contrast to the matte paper of the main text).

This book will undoubtedly form the basis for all future studies of the orchid flora in the Solomon Islands and Bougainville, and is highly recommended. The price is reasonable (in modern terms).

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Ferns and Orchids

FERNS AND ORCHIDS OF THE MARIANA ISLANDS. Lynn Raulerson and Agnes F. Rinehart. Published by the authors, P.O. Box 428, Agana, Guam 96910. 1992. 138 pp. about \$15 (paperback).

Perhaps because of their distance from other islands, the Marianas have a relatively high pro-

portion of ferns in the vascular flora. Fern spores are light and travel easily on the wind. On the other hand, the number of orchids is small compared to islands closer to the mainland (see other book reviews this issue). Ninety species of ferns, and related plants such as *Psilotum*, *Selaginella*, and *Lycopodium*, are described and beautifully illustrated in color in this book. Thirty species of orchids, not including non-naturalized introductions, are also included. Of these orchids, four are endemic to the Marianas and seven more occur only in Micronesia. Not surprisingly, there are few endemic ferns; one, *Thelypteris gretheri*, commemorates David Grether, co-author with W. H. Wagner of the first book on ferns of Guam (*Pteridophyta of Guam*, Bishop Museum, 1948). Each species is shown in one or two clear photos; detail photos of the ferns often show the arrangement of the reproductive areas (sori), and of course orchid details show the flowers.

As with native orchids in most places, the majority of the species do not have large or showy flowers. As the authors note, this has saved these orchids from the ravages of horticulturists. Now, however, horticulturists may be able to provide an important service in saving individual orchid plants about to be ravaged by the bulldozer.

The information given in the introduction to ferns is helpful in outlining the life cycle of a "typical" fern, but does not give much information on ferns in the Marianas (in contrast to the introduction on orchids). I would quarrel with the inclusion of the related Phyla as if they were merely families of the Pteridophyta (true ferns). This is especially unfortunate when by omission the life histories of such famous and special plants as *Psilotum* and *Selaginella*—known throughout the world in plant diversity texts—are implied to be just like ferns. What has made them so famous is precisely their unusual structure or reproduction. (*Psilotum* is considered very primitive because it lacks vascular leaves as well as roots. *Selaginella* has two different size spores which form internal [endosporic] gametophytes.) Some of these "fern allies" and also some of the ferns (e.g., *Ophioglossum*) have subterranean—non-photosynthetic—gametophytes that live in association with endosymbiotic fungi, in contrast to the green gametophytes of most ferns. But this is a field guide, not a botany text, and the emphasis is rightly placed on description and illustration of species.

As with their other recent book, *Trees and Shrubs of the Northern Mariana Islands*, this