BOOK REVIEW. **The Wild Orchids of Hong Kong.** ***G. Baretto, P.J. Cribb & S. Gale.*** 2011.

Kota Kinabalu: Natural History Publications (Borneo), in association with Kadoorie Farm & Botanic Garden. 26.3 × 19 cm, hard cover. 697 pp. ISBN 978–983–812–136–1. Price RM 240.

Hong Kong, situated on the coast of south-east China just south of the Tropic of Cancer, is best known as a modern city of high-rise buildings and as an economic and financial hub in the region. Much less known are its comparatively rich natural resources, of which the orchids form an interesting part.

A large part of Hong Kong is mountainous with rugged peaks and gorges, and although there has been a very long history of deforestation, the forest cover is still a surprising 13 % (although now mainly found at higher elevations). In addition, much of the countryside is regenerated secondary forest. Grassland is a human-induced environment (in many cases through accidental hill fire) and is also a widespread vegetation type in Hong Kong, accounting for 14% of the total land area. The small territory of some 1100 km^2 is home to 126 species and varieties of orchids which are placed in 58 genera, and this is a remarkably high number for a small area situated near the northern limit of tropical South-east Asia. In fact, 9% of all orchids of China are found in Hong Kong, although this small territory only amounts to 0.01% of its land area. About two thirds of native Hong Kong orchids (83 taxa) are terrestrial, while the remainder (43) are primarily epiphytic or lithophytic. The native orchids are most abundant on the north-facing slopes and in ravines above 300 m. Affinities to the orchid floras of southern China and northern Indochina are obviously the greatest, while a few species are more widespread. Five species from temperate Asia are also found in Hong Kong. In addition, eight taxa are currently considered endemic to Hong Kong. Several of Hong Kong's orchids have been decimated in nature to such an extent that they can now be considered as being at the risk of extinction in the wild. In view of this, conservation aspects are of particular importance in the present book.

The book is a complete and richly illustrated enumeration of all orchid species recorded in Hong Kong so far. It brings to fruition the work of Hong Kong resident Gloria Barretto (1916–2007) who, in over 40 years of painstaking and dedicated work, produced draft descriptions of all orchids of Hong Kong she had intended to use for a comprehensive treatment of the native orchids. Sadly, Gloria never saw the finished result of her studies, and co-authors Drs. Phillip Cribb (former curator of the Orchid Herbarium, Royal Botanic Gardens Kew, London, UK) and Stephan Gale (Kadoorie Farm and Botanic Garden, Hong Kong) concluded her work to publish this book.

An introductory part on more general aspects of the territory of Hong Kong and its orchid flora forms the first 74 pages of the book. A detailed and informative coloured map is provided in Fig. 1 (unfortunately rather difficult to read, and a black-and-white map labelled in larger font would probably be clearer; but in any case this is the only shortcoming of the book noted here). Chapters deal with the geology, topography, climate and vegetation of Hong Kong. A brief account of the history of exploration of the orchid flora is given, ranging from the early collections made in the 1830s and 1840s to the recent work by Gloria Barretto. As is commonly found in

publications of this kind, a description of the structure of vegetative and reproductive parts of the orchids is given, and their life cycle is briefly explained. A chapter is devoted to the cultivation of the orchids of Hong Kong which will be of special interest to many readers, given the fact that the cultivation of orchids in China dates back 2500 years to pre-Confucian times. Careful plant selection, mounting, potting, watering, fertilising as well as pests and diseases are explained and illustrated by photographs. The affinities of the orchid flora of Hong Kong are discussed, and a list of the species found in Guangdong Province (the Chinese province directly adjacent to Hong Kong) but not yet recorded in Hong Kong is given—it is estimated that some of these may be found inside the territory as well one day. In view of the decline of the orchids as a consequence of human activities, the discussion of various aspects of conservation is receiving particular attention. Threats to the continued survival of the orchids are various, and include man-made habitat destruction as a consequence of urban development and accidental hill fire, and illegal collecting by plant thieves. Effects of climate change are expected to have an additional adverse effect on the orchids as well. Natural phenomena like extreme weather conditions play a role too, and add to the man-made threats. The Hong Kong government has recognised the need for conservation of the natural environment, and has set aside about 40% of the total land area of the territory as 'Country Parks'. The comprehensive legal framework with its several ordinances is here well explained to the reader. On the basis of previously made herbarium collections, reputable field notes, contemporary orchid surveys and an estimation of threat levels, conservation assessments are made for all of the native orchids of Hong Kong. Currently, nearly three quarters of all orchid species native in Hong Kong are at risk of extinction in the wild and fall into the Vulnerable, Endangered or Critically Endangered categories (IUCN 2001). Seven species have not been seen for several decades and are therefore presumed extinct. In addition to conservation assessments using the IUCN criteria, an easy-to-use Hong Kong-centric system was applied where relative rarity (based on recent sightings) and distribution were used. It is estimated that this system would be more meaningful to land managers than a more scientific approach based on the IUCN criteria. One of the basic requirements of plant conservation in general is a good knowledge of the plant group concerned, and the authors of the present book have certainly succeeded in making comprehensive information available on the native orchids of Hong Kong.

The main part of the book consists of the genus and species accounts, with a short introduction on orchid classification and identification keys to subfamilies and genera. Genera are arranged in phylogenetic order, i.e., after groups of related ones, which is much more meaningful and easy-to-use than an alphabetic arrangement. For all accepted genera and generic synonyms, the name and place of description are cited, together with their typification. Following the generic description, the distribution of the genus and the number of its species (worldwide and in Hong Kong) are given. The derivation of the genus name is explained. This is followed by the treatment of the one to several species. An identification key is provided in all cases where more than one species is found in Hong Kong. Each species account starts with historical notes on the discovery, and gives other relevant information on identity and nomenclatural history.

The currently accepted name and the relevant synonyms are cited, together with references, type specimens and the acronym of the herbarium where these are kept. Species descriptions are very detailed and are mostly based on Hong Kong material (rarely on material from adjacent Chinese provinces). For all species the worldwide distribution, habitat and occurrence in Hong Kong, phenology, vernacular names and the derivation of the species epithet are given. Detailed notes on conservation issues, area of occupancy and abundance are provided, and the category of relative rarity is displayed (colour-coded for easy reference). It is emphasised that the authors have on purpose omitted distribution maps to discourage theft of orchids which is still a significant threat. The species accounts are generously illustrated. One to three black-and-white line drawings are provided for each species, showing the habit of the plant as well as a dissection of the flower. Excellent high-quality photographs are reproduced in nearly all taxa (one to few per taxon) and show the plant, leaf characters (particularly in the 'Jewel Orchids') as well as floral details. Most of these photographs were taken in Hong Kong. In addition, fine colour paintings by General John Eyre are also reproduced to illustrate 25 species.

A comprehensive bibliography list and a detailed glossary follow the main text. Three appendices are provided. Many readers will find Appendix I very useful, containing brief biographies of plant collectors and botanists who are associated with Hong Kong since the 18th century. Appendices II and III are assessments of the conservation status of all native orchids (based on IUCN criteria and relative rarity in a Hong Kong-centric approach, respectively). Two indices are given in the end of the book, a General Index and an Index to Scientific Names.

This book is certainly an invaluable addition to the orchid flora treatments of continental Asian orchids, and as such will be used for decades to come. The text is very detailed, clearly written and well laid-out, and the numerous black-and-white drawings, as well as the magnificent colour photographs and fine paintings, make it a clearly outstanding achievement. The authors and the publisher can be congratulated to the production of this comprehensive handbook on the native orchids of Hong Kong. The book is well suited both to the botanist who studies Hong Kong orchids and to the amateur who is growing native orchids and is trying to name orchids in the wild. It will also prove an indispensable resource for researchers studying orchid floras elsewhere in continental Asia.

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