

**Book Review:** J.F. Maxwell and S. Elliott 2001. **Vegetation and Vascular Flora of Doi Sutep-Pui National Park, Northern Thailand.** Biodiversity Research and Training Program, Bangkok, Thailand. x + 205 pages, 36 colour photographs. ISBN 947 7360 61 6. Price: US\$ 10.

The Doi Sutep-Pui National Park west of Cheng Mai city was established in 1981, its higher peak reaches 1,685 m. It is the site of the famous 600-year old Doi Sutep Temple.

This is a landmark publication and sets a high standard as a model for biodiversity inventories of National Parks. In SE Asia and Malesia, there is almost a complete dearth of accurate and complete information for the plant species and associations found in National Parks. Part III by Maxwell provides a detailed annotated enumeration of vascular plants (2,247 species in 195 families) in the Doi Sutep-Pui National Park based on extensive fieldwork over a period of 13 years. The strength of this section is in the care taken over accuracy of identification based on an extensive collection of herbarium specimens.

Plant associations in the Park are described in Part II by Maxwell and Elliott based on data from transects. The account details the vegetation structure, species composition for all life forms and their abundance, and the correlation between altitude, soil type and disturbance for the six associations found in the Park. Their work clearly shows that the primary evergreen seasonal forest without pine is the most biodiverse association, both in number of species and in having more than double the number of rare and endangered species, and that the summit vegetation has almost completely been destroyed. Interwoven into the account is an interesting discussion of the relative abundance of deciduous and evergreen associations and the effect of disturbance, particularly of fire, on them. This section also includes a historical account of plant collecting in the Park area from the first collections made by C. Hosseus in 1904 as well as listing species originally described from the Park (confusingly referred to in the text as 'new species' although many were described about a hundred years ago!).

Of particular value is Elliott's description in Part IV of management in the Park to maintain its integrity and biodiversity when 6,460 Hmong villagers live within the Park and another 51,109 on the boundary. Already 43 per cent of the Park's land has been converted to agriculture. Elliott's active involvement with the Forest Restoration Research Unit is a practical example of how local communities can be involved in tree planting for reforestation and for fire prevention; how in planting 40 indigenous tree species (of the 600 tree species found in the Park) research is needed on their basic biology in the selection and generation of seed and the



establishment of seedlings; and how the Park serves as a living laboratory for education and research; and as a vital seed source of wild and endangered trees.

Maxwell in Part I takes the opportunity to provide a detailed historical review of the various systems in the literature for classifying the Thai flora into vegetation types. Based on his own field work, he then makes a plea for vegetation types to be based on a holistic approach that takes into account a broader range of species (not just a few economically important timber trees or a few dominant tree species) as well as vegetation structure, that distinguishes phases of plant succession (especially to appreciate the effect of fire on vegetation), and that places more emphasis on altitude as well as seasonality. He stresses that all forest types in Thailand are seasonal vegetation types and that describing the seasonal forest in southern Thailand as 'tropical rain forest' is an incorrect application of the term. Whether his conclusions will indeed be widely accepted or are widely applicable in Thailand can now be tested against the clear framework that he has provided, besides setting standards for the detailed ecological work required to make this assessment.

The conclusion from reading the book is that the Doi Sutep-Pui National Park is a flagship for biodiversity in Thailand with 20 per cent of the Thai flora in just 261 km<sup>2</sup>. It also points to the urgent necessity of conservation management as already 55 species recorded from the Park were not recollected by Maxwell and Elliot and presumably no longer occur there, while another 53 are critically endangered. Scientifically, it is especially important as the type site of 512 species, more than any other National Park or locality in Thailand. The problems the National Park faces from fire, lack of watershed management, encroachment by agriculture, and 'development' for tourism are common to many National Parks in SE Asia and Elliott's positive approach therefore has wide applications elsewhere. On the other hand, Maxwell's antagonist reference to eco-pornography is counter-productive.

The book ends with a comprehensive list of references and an index to species. It contains very few typographical errors, though page 7 records average rainfall as 1000—2000 m! For the wealth of information, the book is inexpensive and should not only be in the libraries of all botanical institutions in the region but also in the resource centres of National Parks and environmental NGOs.

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