

BOOK REVIEWS

INDONESIAN FORESTRY ABSTRACTS. DUTCH LITERATURE UNTIL ABOUT 1960

Chief co-ordinator C. P. van Goor. Compiled by Muklar Effendi *et al.*
Centre for Agricultural Publishing and Documentation, Wageningen. 1982.
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This book results from a co-operative project of:

The Directorate-General of Forestry of the Republic of Indonesia,
Perum Perhutani (Forest State Corporation),
The State Forest Service of the Netherlands, and
De Dorschkamp Research Institute for Forestry and Landscape Planning.

This massive work, containing 6000 abstracts in English, is the product of 5 years' work by a team of Dutch and Indonesian foresters to make accessible the earlier literature of Indonesian forestry written in Dutch. A main objective of the book is to provide information to the younger generation of Indonesian foresters. It does, however, contain a wealth of information of interest to anyone concerned with the history of forestry and land use in Indonesia. Many items have relevance to forestry practices in other tropical countries. In particular, many abstracts deal with the evolution of management for the extensive teak plantations of Java. Teak forests covered some 700 000 ha by 1900 and the abstracts indicate fierce arguments on appropriate management methods, involving discussion of natural regeneration *v.* planting and pure *v.* mixed forests. Since about 1900 teak has generally been planted with food crops by the "tumpangsari"* method with its heavy demands on labour. Various agroforestry techniques are particularly suited to the densely populated and mainly agrarian island of Java where today 100 million people occupy an area half that of New Zealand but 20% of the land is still under a forest cover of vital importance for protection of soil and water.

The abstracts indicate a wide coverage of agroforestry techniques and measures to combat erosion and flooding, including afforestation of mountain lands prone to landslides and degraded by over-cultivation, fires, and illegal removal of wood. *Pinus merkusii*, indigenous to Sumatra, was the species most widely planted at higher elevations before 1960, and is the subject of many abstracts. There is little mention of *Pinus caribaea* or other tropical pines.

* "Tumpangsari" is the Indonesian term equivalent to the Burmese "taungya" method. The tumpangsari method was introduced to Java in 1883. Food crops are planted between rows of teak and are utilised for up to 2 years while the teak is kept free from weeds. *Leucaena leucocephala* is often interplanted to improve soil quality and prevent erosion. On steep land terracing may be done.

Foresters concerned with the planting of fast-growing hardwoods in the lowland tropics will find substantial reference to early trials and plantations with some of the species that are widely planted in grasslands and on degraded land in the tropics today, many of them indigenous to some islands in Indonesia. Amongst such species are *Acacia auriculiformis*, *Albizia falcataria*, *Anthocephalus chinensis*, *Casuarina* species, *Eucalyptus deglupta* (indigenous in Sulawesi, Ceram, and Irian Jaya), the eucalypts of Timor and Flores (*E. alba* and 'Anpupu' – now known as *E. urophylla*). Of exotic species, mahogany (*Swietenia macrophylla*, *S. mahogoni*) have been most widely planted in plantations or along roadsides. It is disputed whether teak (*Tectona grandis*) is indigenous to Java or introduced from India about AD 200.

New Zealand foresters and botanists interested in species with New Zealand affinities will find many references to both natural and planted stands of *Agathis*, named by Whitmore in a 1980 monograph* as *A. dammara* and *A. borneensis* but given various synonyms in the abstracts (*A. loranthifolia*, *A. alba*, *A. beccarii*). The naturally occurring trees were extensively tapped for resin (copal) in Sulawesi and the Moluccas. *Agathis borneensis* on peat soils or podsollic sands have now been extensively exploited for timber, while in Java *A. dammara* (a Javan "land race" of Moluccan origin)† has been successfully grown for timber, veneer, and matchwood in plantations on volcanic soils at 500–1100 m; productivity has been comparable with that of *Pinus radiata* in New Zealand.

A few abstracts refer to the occurrence of podocarps in montane forests, especially *Podocarpus imbricatus* and *Dacrydium elatum*, and some attempts have been made to regenerate them naturally or by planting. There are references to forests of *Agathis* and *Dacrydium* on poor sandy soils in the lowlands of Kalimantan.

Many abstracts refer to measures taken to maintain or restore fertility to soils used for different combinations of forestry and agriculture or degraded by shifting cultivation. Leguminous tree species have been widely used to improve soils, provide shade to crops, prevent erosion, and produce fuel and fodder. Most commonly planted were species of *Albizia*, *Acacia*, and *Leucaena*.

The abstracts are classified by the Oxford system of decimal classification for forestry and there are excellent indexes by subject, species, and author.

The period covered is mainly from the 1880s to about 1960, with the bulk of abstracts covering the period 1900–40. The abstracts cover nearly 100 periodicals and standard books in Dutch as well as much unpublished material ranging from travel diaries, monthly and annual reports, to management plans and conference items. All this literature is to be made available in Indonesia in microfiche. Many of the published articles have summaries in English but abstracts in this volume often give a substantial amount of information.

* WHITMORE, T. C. 1980: A monograph on *Agathis*. **Plant Systematics and Evolution** 135: 41–69.

† WHITMORE, T. C. 1977: A first look at *Agathis*. **Department of Forestry, Commonwealth Forestry Institute, University of Oxford, Tropical Forestry Paper No. 11.**

English-speaking foresters searching for background material on Indonesian forestry will previously have been faced with the difficulty of finding all but the more general articles written in Dutch or Indonesian. In this book the standard of translation from Dutch is high although there are inevitably some awkward phrases and words that require a more comprehensive glossary.

Indonesian Forestry Abstracts will give a comprehensive indicative account of all the literature available in Dutch and will serve as an excellent source of references. Eighteen full-page photos are well chosen to give an impression of older methods of forest exploitation. These indicate the great amount of heavy labour previously required for most operations with manual haulage of logs along corduroy tracks in the 1930s. The vast Dipterocarp forests of Kalimantan and Sumatra were being opened to exploitation at this time. There are some references to discussions and trials on regeneration of rain forests after logging but little indication of their active management.

The Dutch foresters of the period covered appear to have concentrated on Java and on teak forests for more intensive forest management. Islands other than Java are included in the "Outer Provinces" and forests other than teak in Java are referred to as "non-teak" forests. However, any foresters or botanists who peruse these abstracts will get a kaleidoscopic view of the vegetation and earlier forest activities in one of the world's most fascinating and diverse regions, generally little known to New Zealanders. A recently published checklist of the tree flora of Sumatra includes 4000 tree species. The abstracts give a wide coverage of forest activities in Sumatra, Kalimantan, Sulawesi, and Irian Jaya.

Present-day foresters still meet the language problem in that most forest literature on Indonesia of the past 30 years has been written in the Indonesian language. New Zealanders fluent in the Indonesian language are few and up-to-date material on Indonesian forestry, written in either Indonesian or English, is not readily available in New Zealand. Indonesian Forestry Abstracts give access to a vast amount of Dutch material in a splendidly presented volume.

A. E. Beveridge.

FOREST TREES IN AUSTRALIA

by D. J. Boland, M. I. H. Brooker, G. M. Chippendale, N. Hall,
B. P. M. Hyland, R. D. Johnston, D. A. Kleinig, and J. D. Turner

Fourth edition, revised and enlarged. Thomas Nelson, Melbourne. 1984.
687 pages. ISBN 0-17-066264-3.

This hard cover book has been thoroughly revised and enlarged. With twice the number of pages and thicker paper, it is three times the size of the previous edition and weighs over 2 kg making it very difficult to use as a field guide.

Two hundred and twenty-three important Australian trees, including 137 eucalypt species, are described and illustrated. The species were selected because of their