

## XL. BOTANICAL PROGRESS IN THE TROPENBOS KALIMANTAN PROJECT

P. J. A. KEßLER &amp; P. BAAS

Rijksherbarium / Hortus Botanicus, POB 9514, 2300 RA Leiden, The Netherlands

During the last three years the Rijksherbarium/Hortus Botanicus (L) has been involved in the Tropenbos Kalimantan Programme, a co-operative programme between AFRD (Agency of Forest Research and Development, Indonesian Ministry of Forestry) and the 'Tropenbos' Foundation. The implementation of this programme is executed by AFRD and its institutes on the Indonesian side and the IBG-DLO (Instituut voor Bosbouw en Groenbeheer – Dienst Landbouwkundig Onderzoek), Wageningen, and L on the Dutch side. UNESCO-MAB has funded research in soil science. The programme is supported by the forestry state enterprises Inhutani I and II, and other concessionaires. A close co-operation exists with the Faculty of Forestry of the Mulawarman University, Samarinda.

The research of the 'Botanical Research Group' focused on the following main points:

1. Preparation of a manual of forest trees in the Wanariset research forest and surroundings;
2. A study of non-wood forest products and their socio-economic relevance;
3. Establishment and management of a computerized database;
4. Comparative wood quality studies of plantation-grown *Shorea*;
5. Botanical training and training in forest tree recognition;
6. Establishment and management of the 'Wanariset Herbarium'.

**Tree manual** — The manuscript of 'Trees of the Balikpapan–Samarinda area, East Kalimantan, Indonesia – A manual to selected species –' (P. J. A. Keßler & Kade Sidiyasa, in press 1993/94) has been finished. It will contain a synoptical and a bracketed key to the families and genera, and descriptions of c. 270 species including notes on uses and distribution. At least one species of each genus is depicted and within the economically important *Dipterocarps* every species is illustrated. As a precursor to this manual a checklist of over 1200 woody species from the same area was published in 1992 (P. J. A. Keßler, Kade Sidiyasa, Ambriansyah & Arifin Zainal, Checklist for a tree flora of the Balikpapan–Samarinda area, East Kalimantan, Indonesia, Technical Series Tropenbos 8, 79 pp., to be ordered from Tropenbos, P. O. Box 232, 6700 AE Wageningen, The Netherlands).

The tree manual is intended as a first guide to the (primary) lowland forest of East Kalimantan and the authors are fully aware of its shortcomings because a selection had to be made of 270 of the most important tree species. Foresters, timber licensees, and their forestry personnel often find it difficult to identify tree species by their bark, slash, and leaf-characters alone. We hope that this book facilitates a quick identification of the tree in question or provides at least a hint as to which family or genus the specimen belongs.

One of our students, Mr. R. DE KOK, returned from Wanariset in April, 1993, after a stay of 5 months. He made a study of the variability of the bark and slash characters of some *Dipterocarpaceae* and *Bombacaceae* and was able to describe more than 250 individual trees (in 20 species) in different plots at the Wanariset Forest Research area. For his study he collected more than 500 (slash & leaf) samples and made more than 1000 slides. It seems that most of the bark and slash characters are relatively stable within one species and provide good vegetative characters which can be used in identification keys.

**Wanariset Herbarium** — The Wanariset Herbarium, situated c. 35 km north of Balikpapan, is housed in an air-conditioned building where collections can be kept under optimal conditions. During the last three years c. 3500 accessions (fertile material only) were collected (mainly by AMBRI & ARIFIN, KADE SIDIYASA, VAN BALGOOY, KEßLER, and VAN VALKENBURG) dried, mounted, and filed. All duplicates were sent to BO and L and were (pre-)identified by Dr. VAN BALGOOY, Dr. KEßLER, Ir. KADE SIDIYASA, and the staff of the tropical group of L.

**Non-timber Forest Products** — Ir. J. VAN VALKENBURG embarked two years ago on a Ph.D. study of the non-timber forest products and their (socio-)economical potential in East Kalimantan. His research plots are in the Apo Kayan, in the ITCI (International Timber Corporation Indonesia) concession, and in the Wanariset forest. The influx and prices of various non-timber products is closely monitored at the markets in Samarinda. Preliminary results confirm the great economic potential of non-timber forest products, especially of rattan as a sustainable alternative to large-scale timber extraction.

**Wood quality of plantation grown Meranti** — Dr. M.T.M. BOSMAN and Ms. M.K. VAN HEUVEN carried out a pilot study on wood density and a number of wood anatomical parameters (fibre wall percentage, tissue proportions, etc.) in (nearly mature) plantation-grown trees and primary forest trees of *Shorea leprosula* and *S. parvifolia*. No significant differences were found between the two types of provenances. These results are slightly at variance with earlier results obtained by Dr. A. MARTAWAJA from the FPDI (Forest Products and Development Institute), Bogor, who found a decrease in density and durability of fast-growing trees in plantations of various *Dipterocarpaceae*. The issue warrants further study, because with the vastly increased possibilities of using indigenous *Dipterocarpaceae* in plantation and enrichment forestry, the question of sustained wood quality should be addressed before selecting planting material. The project will be continued in close cooperation with FPDI in Bogor.