

V. HERBARIA, GARDENS, ORGANIZATIONS

(continued from page 126)

APINMAP (Asian Pacific Information Network on Medicinal and Aromatic Plants). — The renewed interest for medicinal preparations from plants particularly in rural areas has prompted international developmental organizations, e. g. UNESCO, to stimulate the creation of information support mechanisms. Thus APINMAP was launched in July 1987 by 11 Asian and Australian participating countries. The Secretariat is based in Bangkok. The AIBA (Agricultural Information Bank for Asia), Southeast Asian Regional Center for Graduate Study and Research in Agriculture, Laguna, the Philippines, coordinates the activities and is responsible for consolidating and redistributing the incoming information. There are the following objectives:

- making available and using to the maximum extent possible information, either acquired from abroad, or generated by research and development activities of the region;
- assisting in the development or strengthening of specialized information services and information handling capabilities of the member states;
- providing guidance in the development of information products and services appropriate to various target user communities of the network;
- promoting resource sharing activities and services;
- providing linkages to other regional and international networks or services in the fields of medical and aromatic plants and chemistry of natural products;

The following information products and services are currently available:

- bibliographic databases prepared by and produced in each of the participating countries on medicinal and aromatic plants. Available on diskette. Printed form in whole or part can be requested;
- referral database of information sources, research institutes, and experts. Available on diskette. Print-outs of specific items may be requested;

For more information, contact Prof. K. MANUNAPICHU, c/o Ministry of University Affairs, 328 Sri Ayutthya Road, Bangkok 10400, Thailand.

From 20 to 25 August 1989 the Rijksherbarium organized the first **International Symposium dedicated to the study of the flora of the Malesian region**. 210 attendants from 26 different countries participated. In the program 73 speeches and 55 posters were presented and there seemed to be a continuous row of receptions. The weather was exceptionally warm and dry for the Netherlands and the excursion in the dunes followed by a boat trip over the canals and lakes and a barbecue in the Botanical Gardens was not marred by the usual wind and rain. Those that participated can attest that the Symposium was a great success and there was a strong opinion that there should be sequels every 3 or 4 years alternating between a Malesian country and Leiden. A second Symposium will be held in Jakarta, 2–4 September 1992 (see below). Colleagues from Malaysia and the Philippines have also indicated that they want to be hosts on a future occasion. Periodical meetings in Leiden seemed to be desirable by botanists from Malesia as these would offer the simultaneous possibility to consult essential collections and literature there. Quite a number of visitors did so before, during, and after the Symposium this time.

A selection of the lectures and posters will be published in a Proceedings Volume, titled 'The Plant Diversity in Malesia' (eds. P. BAAS, C. KALKMAN & R. GEESINK), by Kluwer Academic Publishers, Dordrecht/Boston/London.

The Symposium was followed by a 2-day **Workshop on the future of the Flora Malesiana** to suggest ways in which the work on the Flora can be accelerated. Various suggestions were discussed and it is clear that when the floristic study is quickened the scientific quality cannot be as thorough, too thorough according to some, as at present. Additional funds must be found and it is essential that the number of collaborators increases both in Leiden and locally in the region to bring the exploration, inventarisation, and elaboration at the desired level. The recommendations and resolutions will be published in a Special Volume of Flora Malesiana Bulletin.

Flora Malesiana Symposium II, Jakarta, 2–4 September 1992. — As a follow-up of the successful Flora Malesiana Symposium I held in Leiden in August 1989 plans are being drawn to convene the Second Symposium in Jakarta around the end of August or early September 1992. For suggestions, questions, and preliminary registration forms for the Symposium write to Dr. M. A. RIFAI, Herbarium Bogoriense, Puslitbang Biologi, Jl. Raya Juanda 22, Bogor 16122, Indonesia.

Pasoh Forest Reserve, Malaysia. — The Forest Institute of Malaysia began a major study of forest tree demography in 1985 at Pasoh Forest Reserve, Negri Sembilan, Malaysia. The scientific goal was to follow the fate of populations over time and observe how mortality and growth among trees are related to their spatial distribution. Special attention was paid to interactions between juveniles and adults, and interactions among groups of related species.

To accomplish these goals a procedure was followed that was set up a few years earlier on Barro Colorado Island, Panama, by Dr. S.P. HUBBELL. In this technique, 50 ha of primary forest is surveyed with a theodolite and permanent stakes are placed at 20 m intervals. Then, all trees that are 1 cm diam., or greater, are given a permanent tag number, measured, mapped to the nearest 10 cm, and identified to species.

The initial census was carried out under the leadership of Messrs. N. MANOKARAN (FRIM), P.S. ASHTON (A), and S.P. HUBBELL (Dept. Biology, Princeton University, Princeton). The identification of trees was supervised by Mr. K.M. KOCHUMMEN (KEP). The study is a project of the FRIM with supplemental funding provided by the National Science Foundation (USA), UNESCO, Food, Health and Conservation (Inc.), and the Smithsonian Tropical Research Institute. The field work and data entry required 25 people working 3 years to complete.

The initial census is now being summarized and analyzed by the participants. Some of the more notable findings are as follows. The 50 ha plot included roughly 320,000 trees representing 820 species (genera with more than 10 species represented in the plot are enumerated in Table 1). Only 12 of the species could not be accounted for in reference to the known tree flora of the Malay Peninsula, and of these 12 half are known from elsewhere in the Malesiana region. The tree flora of the plot represents roughly 25% of the Peninsular tree flora and about 50% of the potential lowland tree flora.

The plot tree flora includes 76 species that bear edible fruit. Among the more diverse genera are several important cultivated plants: 12 species of *Mangifera*, 13 of *Garcinia*, 5 of *Nephelium*, and 10 of *Artocarpus*.

Preliminary study of the spatial distribution (Fig. 1) indicated that a great many species are very patchy in distribution below the 50 ha scale; the patches in some cases are clearly related to the environment, especially soil moisture, but in other cases are without a clear explanation. During 1990 a second census of the plot will be conducted whereby data on growth and mortality will be acquired. The practical value of the plot for education and collaborative research cannot be overstated. More than 400 species have sample populations of more than a 100 trees for which detailed spatial and demographic data exist.

Should a reader wish to pursue ecological or systematic studies in our permanent plot using the many species of trees for which there are records, he/she should write to the Director General of FRIM (Kepong, 52109 Kuala Lumpur, Selangor, Malaysia). Initial inquiries may be made directly to Mr. J.V. LaFrankie, Pejabat Pos, Simpang Pertang, 72300 Negri Sembilan, Malaysia. — J. V. LAFRANKIE.

Table 1 — Genera with more than 10 species represented in the 50 ha forest tree demography plot.

<i>Aglaia</i>	(Meliaceae)	<i>Horsfieldia</i>	(Myristicaceae)
<i>Aporosa</i>	(Euphorbiaceae)	<i>Knema</i>	(Myristicaceae)
<i>Artocarpus</i>	(Moraceae)	<i>Litsea</i>	(Lauraceae)
<i>Baccaurea</i>	(Euphorbiaceae)	<i>Mangifera</i>	(Anacardiaceae)
<i>Diospyros</i>	(Ebenaceae)	<i>Memecylon</i>	(Melastomataceae)
<i>Eugenia</i>	(Myrtaceae)	<i>Polyalthia</i>	(Annonaceae)
<i>Garcinia</i>	(Clusiaceae)	<i>Shorea</i>	(Dipterocarpaceae)

Metres North

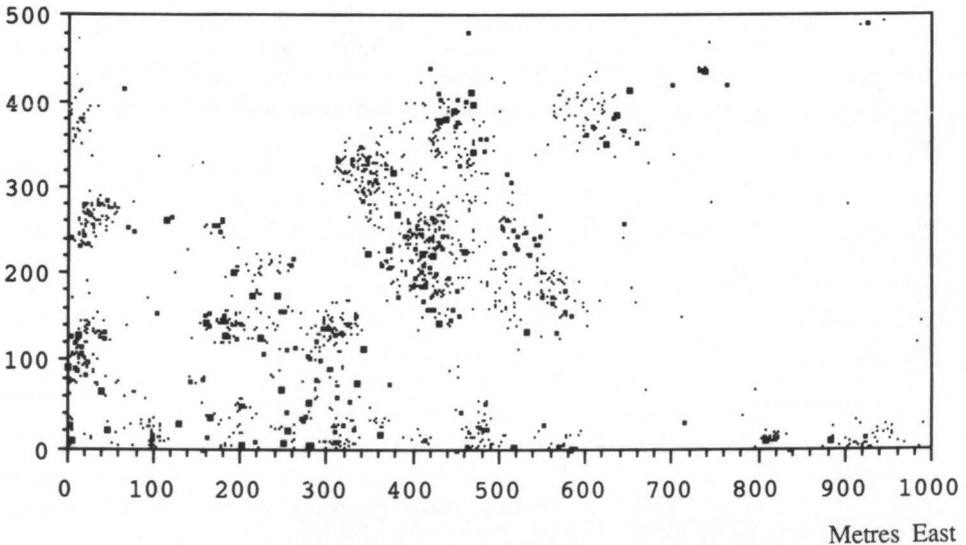


Figure 1 — Map showing location of 1200 individuals of *Shorea macroptera* (Dipterocarpaceae) within the 50 ha permanent plot at Pasoh Forest Reserve, Malaysia. Size classes of 1, 10, and 30 cm dbh are distinguished with symbols of three different sizes.

The herbarium of the Andaman & Nicobar Circle, Port Blair (PBL, with 19,000 specimens in January 1990), has undertaken various expeditions in the area made possible by the increase of its staff with 6 scientists. The specimens will be deposited in PBL and CAL. Work on a regional flora is in progress. An Arboretum of ca. 30 ha is situated in Dhanikhari, about 16 km from Port Blair. Three/fourths of it is covered by forest, the remainder has been cleared for the introduction and propagation of all the indigenous orchids, and the guarding of economically feasible germplasm collected in the region. — J.L. ELLIS.

SEABOP (S.E. Asian Botanical Program) was formed after a meeting at the 6th Asian Symposium on Medicinal Plants and Spices held in Bandung, Indonesia, attended by taxonomists from Australia, Ethiopia, Indonesia, the Philippines, and Thailand. The aim is to

provide a co-operative program for the sustained development of descriptive botany in Southeast Asia which will also serve the needs of chemists and pharmacologists in the region. Dr. D. MADULID (PNH) was elected as chairman, and Dr. N. MARCHANT (PERTH) as secretary. The official recognition as a UNESCO regional network took place in November 1989 at a conference in Paris.

Funds are being searched for:

- A workshop on herbarium specimen curation for technicians and botanists from Southeast Asia; September 1990, Perth.
- A workshop on generic delimitation of the Zingiberaceae in which pharmacological, chemical, and taxonomic research will be integrated; May 1991, Kuala Lumpur.
- Support of international travel by Southeast Asian taxonomists to herbaria of the industrialized countries.
- Support of inter-regional travel for Southeast Asian taxonomists to collect plant material, undertake collaborative studies, and examine herbarium collections.
- Arrange and finance the preparation and publication of a textbook on plant taxonomy with the accent on medicinal and other economic plants.
- Support institutional and researcher access to essential taxonomic literature.
- Increase the scope and number of participants in the training program for plant taxonomists developed by BO and L.

For more information contact Dr. N. MARCHANT, WA Herbarium, POB 104, Como (WA) - 6152, Australia.

The Botanic Garden, Singapore, celebrated its 130th anniversary between 26 November and 3 December 1989. A one-day Seminar was held in celebration attended by many local and foreign attendants and two former Directors, Drs. R.E. HOLTUM (in video) and H.M. BURKILL (in vivo). The unique position of the Garden was pointed out by several speakers, and its duty both in creating public awareness (also at the governmental level) for nature conservation, as well as to basic botanical scientific research was emphasized.

The Garden is a direct successor of a plot where Sir Stamford Raffles, Singapore's founder and first Governor, in 1822 had planted various trees near his bungalow for acclimatization and had started a nutmeg and clove plantation. It was closed down in 1829 because of lack of interest, but in 1859 HOO AH KAY, better known as WHAMPOA, created a pleasure park on a 23 ha lot. Regimental bands played, flower shows were held, and two gardeners employed. In 1875 a zoo was added and the garden was transferred to the Colonial Government. Mr. H.J. MURTON became the first horticulturist to take charge. He was responsible for introducing coffee and rubber, and made it a place for scientific study. In 1888 H.N. RIDLEY became the first Director. To us especially known for his monumental *Flora of the Malay Peninsula*, he became locally better known as 'Rubber Ridley' because of his obsession with the economic potential of rubber, promoting its planting unceasingly. He was helped by the increase of coffee production in Brazil, which caused many farmers to switch to rubber around 1900 and by 1917 the Garden had distributed more than 7 million seeds. In 1928 an innovative method of hybridising orchids using flasks for sterile culture was introduced by R.E. HOLTUM, while in 1929 E.J.H. CORNER became a member of the staff, which he further increased by the 'manpower' of trained monkeys to

collect from tree tops. In 1963 the Garden's priority had to shift to become a horticultural service for Singapore's Garden City concept initiated by the Prime Minister LEE KUAN YEOW. In 1972 the School of Ornamental Horticulture was opened and the next year the Gardens were merged into the Parks and Recreation Department. In the 80's it annually planted 56,000 flowering trees, 400,000 shrubs, and more than 10,000 fruit trees for the greening of the City. In 1986 12 ha were added to the grounds which now occupy 47 ha and a further extension to 54 ha is planned. In 1988 the Gardens were redesignated a separate Division and Dr. TAN WEE KIAT was appointed as Director.

More about the Garden's history can be read in the beautifully executed booklet 'Visions of delight' by BONNIE TINSLEY (1989).

Under Dr. TAN's vitalizing directorship it is planning to become one of the world's top equatorial gardens again. He intends that it will not only be a resource centre for horticulture, but also that it will regain the position in pure research for which it was once famous. An ambitious Sing\$ 51 million project has been launched to set up a National Parks Board. Plans are to have by 1994 a 20 m tall glass pyramid as an eye catcher in which on ca. 1500 m² will house a mountain garden with the pleasant temperature of 20°C. It will be called the Cloud Forest because of the pale mist that will keep the moisture up in which plants from Mt. Kinabalu or Cameron Highlands will flourish. Dr. TAN hopes to increase the staff with no less than 70 positions, among which a considerable number of scientists. One of the plans is to produce a comprehensive reference book on the flora of Singapore whereby the indigenous species will become better known, and their conservational status documented.

Courses. — Several courses in herbarium taxonomy and/or practice are being given.

Mentioned here several times before is the course in Angiosperm taxonomy jointly given by the Rijksherbarium and the Herbarium Bogoriense, sponsored by UNESCO Jakarta (c/o Dr. K. KARTAWINATA, Jl. M.H. Tamrin 14). This 4–6-weeks course (so far given in Bogor) is aimed at local professionals doing taxonomic work in tropical Southeast Asia, e.g. taxonomists in herbaria and forest departments, advanced students and lecturers at colleges and universities, etc. The main requirement is a working knowledge of English. There is a maximum of 16 students. A Manual has been written by various Leiden scientists, edited by E.F. DE VOGEL. Further information can best be obtained from the Indonesian addresses. There is a possibility for further support by SEABOP (see above).

There is a Training Course in Herbarium Techniques at the Royal Botanic Gardens, Kew, in collaboration with the Commonwealth Science Council and the British Council. There are two major elements: a course on Herbarium management and techniques, and an optional component relating too herbarium curation, plant identification, simple library management, devising of check-lists, or plant illustration. Successful candidates will receive a diploma. The course lasts for about 8 weeks. A textbook has been prepared by L. Forman & D. Bridson (1989). Students of any nationality or age are welcome. A reasonable standard of English is essential. Candidates should be well motivated and have a genuine and practical interest in herbarium management. About 10 persons can attend at a time, so there is already a waiting list. The fee of £ 1000 covers all tuition, books, and trips. A sponsorship should cover this, plus subsistence (accommodation!) plus a return air fare. More information and advice on sponsorship can be obtained from the Keeper, Mr. G.Ll. LUCAS, (International diploma course), Royal Botanic Gardens, TW9 3AB, U. K. Tel. 081-940 1171, Fax 081-948 1197, Telex 296694 KEWGAR.

Herbaria

The Herbarium of Payakumbuh has moved from Andalas ('AND') to the Faculty of Mathematics and Natural Sciences, Padang. Unfortunately almost all of W. Meijer's collections have been lost (duplicates in L, some in BO). There are now ca. 8,000 specimens. — NAGAMASU, 1989.

The KUCH Herbarium in February 1990 had more than 13,000 specimens, while the Botanical Research Centre had well over 3,000 wild plants as part of its ex-situ conservation program.

The herbarium of Father J.A.J. VERHEIJEN has been acquired by the Airlangga University, Surabaya. A good second set is in L.