SCIENTIFIC NEWS

Getting there — Various methods to access canopies are described in Selbyana 16 (1995). Ashton et al. explain a tackle and boom method used for the phenology of *Shorea* flowering in Malesia. Note the rather funny sketch. Dorrington sketches lighter-than-air powered balloons with which canopies can be explored. Donahue & Wood describe and depict a climbing technique practiced by rock climbers and cave explorers, including equipment lists. Lowman & Bouricus discuss the construction, equipment, and costs of platforms and bridges for durable access. In the latter's literature list the following reference seems of interest to incipient arborists:

Moffett, M. & M.D. Lowman. 1995. Methods of access into forest canopies in M.D. Lowman & N. Nadkarni (Eds.), Forest canopies: 1—24.

See also Laman, "Safety recommendations for climbing rain forest trees with 'single rope technique'", Biotropica 27 (1995) 406—409 (see Bibliography). You would do well to read it!

Another instructive paper I have cited previously (FMB 11/6, 1995, 443) is: Dial, R. & S.C. Tobin. 1994. Description of arborist methods for forest canopy access and movement. Selbyana 15: 24—37, ill.

Thailand — An expedition by AAU (K. Larsen, S.S. Larsen, R. Morran, C. Tange) and BKF (D. Shookchalerm, C. Niyomdham) was undertaken from 1 August to 15 October, 1995. One month was spent in the southernmost rain forest reserves near the Malaysian border.

Malaysia — Report on the Malaysian heritage and scientific Expedition to Belum: Temengor Forest Reserve, 1993—1994, has appeared as a special volume (48: 3/4) of the Malayan Nature Journal. Lists are given for fungi, bryophytes, ferns and fern allies, and flowering plants, with special emphasis on some families, e.g. Gesneriaceae, Palmae, Zingiberaceae.

700 duplicates from KLU were received in P. These specimens were collected in various parts of Malaysia by several French phytochemists who each spent one year of research at the University of Malaya according a co-operation agreement between the National Center of Scientific Research (CNRS, France) and the University of Malaya.

Brunei — Little is known about the moss flora of Brunei. Funded by a Hong Kong and Shanghai Bank Bursary made available through the University of Brunei Darussalam (UBD), Dr. B.C. Tan (GH) visited Brunei between 30 November and 29 December, 1995, to study the mosses of the lowland rain forests. With the help of the Department of Biology, UBD, and the Brunei Forestry Office at Sungai Liang, Tan traveled around the country and collected several hundred packets of mosses found in different types of forests, such as karengas or heath forest, peat-swamp forest, and mixed dipterocarp forest. He also visited the Kuala Belalong Forest Research Station to study the canopy and elevational moss diversity. The result of the study will be published. Initial findings show that the moss flora of Brunei is diverse and rich in Bornean endemics, totaling more than 105 species in 55 genera. Exsiccata sets will be jointly issued in 1996 by the herbaria of UBD and GH.

The *Brunei checklist project* continued, although the funding from Brunei Shell Petroleum ran out in the autumn of 1995, and thus we had to say goodbye to the two short-term staff (A.P. Davis & P.C. Bygrave). Preparations for the printed Checklist are now well advanced (late Feb. 1996) and we hope to send camera-ready copy to Brunei in a matter of weeks rather than months. Identifications were by specialists both resident and elsewhere, by Davis & Bygrave, and by L.L. Forman. The editorial team is given (in alphabetic order) as M.J.E. Coode, J. Dransfield, L.L. Forman, D.W. Kirkup, and I.M. Said. The text was generated by Kirkup from a specimen database of his own design, and needs rather less manual intervention than previous generations (of botanists) might have thought possible. Of course, certain characteristic (and perhaps risible) features of computerese remain embedded; they will be explained in the Introduction and, as time goes on, we should be able to minimize their obtrusiveness in any subsequent editions. The total number of taxa will remain uncertain until the final stages (when unnecessary names, which were picked up and given entries from field- or early determinations and subsequently changed, have been checked and deleted), but it looks as if we have c. 3500 spp. of flowering plants recorded in the specimen database. Printing will be undertaken by the Brunei Forestry Department, which has set aside funds for the purpose. —— M.J.E. Coode.

Kalimantan — Trips were made to G. Palung in January 1995 by Mssrs. M.F. Newman (E) and U. Sutisna (BZF), and to Sg. Berau, Wanariset, in November 1995 by Mssrs. P.F. Burgess, Newman, Sutisna, and T.C. Whitmore. Collections and photographs of dipterocarps were made.

Sabah — A botanical trip to Mt. Trusmadi and around the Crocker Range, Tambunan was organized by the Botany Section, Forest Research Centre, Sepilok, from 28th February to 11th March, 1995. The group was led by Dr. K.M. Wong (SAN) and joined by Prof. Christian Puff (University of Vienna, Austria), John Sugau (SAN), Joan Pereira (SAN), Leopold Madani (SAN), Joseph Tangah (Conservation Officer, Forest Research Centre, Sepilok), Reuben Nilus (Ecologist, Forest Research Centre, Sepilok).

Collecting work began around the Rafflesia Forest Reserve which is part of the Crocker Range, at an elevation of about 1200 m. Here, members of the family Lauraceae, Ericaceae, Moraceae and Fagaceae are significant elements of the lower montane forest. The team also collected specimens along the Sinsuran waterfalls in the Crocker Range. Collecting continued further up along the Tambunan-Penampang road subsequently proceeding up to Mt. Alab (1750 m).

During the last few days, 7th March to 11th March, the group collected along the logging trails around Mt. Trusmadi. During the trip, a total of about 350 specimens were collected, mostly Rubiaceae.

Sarawak — In 1993 a canopy observation system was built in the lowland mixed dipterocarp forest of Lambir Hills National Park, Sarawak. It consists of two towers about 50 m tall and at c. 33 m has 9 aerial walkways totaling 300 m. The construction is described by Inoue et al., Selbyana 16 (1995) 24—35.

Philippines — A field survey and study of the conservation status of rare, endemic, and endangered plants of Mt. Pinatubo and adjoining mountains started in 1993. It is supported by the Department of Science and Technology through the Philippine Council for Agriculture, Forest, and National Resources Research and Development. Plant collection and documentation was undertaken and a data base was set up. Regeneration of the vegetation was observed. A final report was expected in early 1996.

In 1995 the Philippine Plant Inventory Project conducted botanical expeditions in different parts of the country: Polilo Isl., Burdeos and Patnanungan (Quezon), Caramoan (Camarines Sur); Palawan, Ternate (Cavite); Mt. Palay-Palay (Cavite), Mt. Natib (Bataan), Mt. Baloy (Aklan), Mt. Kinasalapi (Bukidnon); Camiguin Isl., Sibuyan Isl.; Sibutan (Antique); Tagat watershed, Claveria; Angat watershed area, Lambonao (Iloilo); Masinloc, Botolan, Iba (Zambales), Davao, El Nido, Apulit Isl., Taytay (Palawan), Bislig (Surigao Sur); Mt. Malinao (Tiwi, Albay); Sibuyan Isl., Palaui Isl., San Vicente (Cagayan).

Field trips were also conducted by the Biodiversity Information Center / Plants Unit staff: Mt. Hibok-hibok, Camiguin Isl., Carmen, Bohol Isl.; Mt. Cantipla (Cebu); Coron, Busuanga, and Calauit Isl. (Palawan); Mt. Palay-Palay National Park (Cavite); San Antonio (Siguijor); Mt. Palay-Palay National Park (Cavite); Bukidnon; Mt. Pinatubo, Zambales and Pampanga.

In the first two weeks of April, 1995, Mssrs. D. Fernando, F. Gaerlan and J.J. Pipoly III (BRIT) finished the submontane moist forest inventory on Mt. Kitanglad, Bukidnon Prov., Mindanao. The introduction of new collecting technology, including French climbing spikes, American logging safety belts and lanyards, and aluminum clipper poles expandable to 10 m, aided the team to make 952 numbers, i.e., over 7,300 specimens. Although surprisingly few in species, over 40% of the trees are endemic to the region or the Philippines. The summit provided a number of new records, and perhaps one new species.

In early May Mssrs. R. Fuentes, H. Garcia, J.J. Pipoly III, E. Romero, and T. Saycal (PPI) established a plot at 460—640 m on the limestone Mt. Guiting-guiting, Sibuyan Isl. There were a great number of Dipterocarpaceae and Ardisia. Over 1300 trees were marked and collected as much as possible.

Dr. J.J. Pipoly III (BRIT) and Dr. D.A. Madulid (PNH) conducted fieldwork in Palawan in February 1996. Specimens will be deposited in PNH, BRIT, A, L, K, US, and with specialists.

A survey of the flora and vegetation of Coron Island, Palawan, is in the process of being written up at PNH.

A Dictionary of Philippine Plant names is receiving final touches at PNH. It will be printed at the University of Hawaii.

Dr. J.J. Pipoly III (BRIT) intends to assist in the writing of a florula of a number of permanent forest plots in the Marilog Distr., North Cotabato Prov., Mindanao, together with Dr. V.B. Amoroso (Central Mindanao University).

Irian Jaya — Further visits by staff members of K continued to Irian Jaya (Manokwari district) as part of its project there funded by the MacArthur Foundation. The Project is about

to appoint someone to manage the specimen database and oversee the remaining identifications and the preparation from that database of a printed checklist to date.

Micronesia — A report on the 1992 Chiba Institute biological expedition to the northern Mariana islands was published in Nat. Hist. Res., Sp. Issue 1 (1994). Papers include an extensive report on flora and vegetation (T. Ohba) with the description of the 39 plant communities encountered. A checklist of the flowering plants and ferns contains 1 new Cyrtandra with a key to allied species. Enumerations of the bryophytes are given by T. Furuki, Z. Iwatsuki, and T. Yamaguchi, and of the lichens by H. Harada. A new Malaxis is described by S. Kobayashi.

Interactive key to the tree and shrub genera of the Bukit Baka - Bukit Raya National Park in Kalimantan — Taxonomic products are necessary in the wider world. This is particularly the case for tasks such as inventory and monitoring in conservation projects. Across Malesia, various National Park and related projects need to be able to identify what they have within conserved area boundaries. It is important to be able to identify critical species under threat, and from there to take appropriate action. Having the name of a tree, bird, or animal does not give a solution to any problem concerning it, but it provides the fundamental piece of information, the name, needed to seek out further information.

In the case of Borneo, the species of small groups such as the birds or mammals are known. Species limits, geographical distribution and variation, have already been elucidated. Good field guides are available in English and Indonesian. Such guides are used by non-specialists and are also forming a basis of popular education that encourages people to take an interest in the biota around them, much as field guides have done for Western professional and amateur naturalists for generations.

The situation is markedly different for plants. Flora Malesiana, for example is a fine repository for taxonomic information about the region's flora. Its format is less useful to non-specialists. There are no general keys yet to families and genera, and few of the keys within the flora are made for field biologists or conservation staff who may be working with incomplete material. An attempt was made to address this gap in knowledge by developing a DELTA interactive key (Dallwitz, 1980; Dallwitz et al., 1993) to the tree and shrub genera of the Bukit Baka - Bukit Raya National Park in Kalimantan (Jarvie, J. K. & Ermayanti, 1995). The key includes about 230 genera using 115 characters, and is available in English and Indonesian.

Key users initially had difficulty interpreting technical language. Although terms are meant to have static meaning it would appear that this is not the case. A good example "cymose inflorescence", which is variously interpreted as thyrse, panicle, and compound inflorescence. We have tried to clear up misunderstanding by avoiding technical terms where possible and breaking down definitions into their component parts. For example, the character which was "inflorescence type" is now broken into three characters, asking if flowers are on axes or not; whether axes (if present) are branched or not; if the flowers are stalked or not. The only technical aspect remaining is whether terminal inflorescence units are heads, corymbs, or umbels.

Over the next two years the plan is to enlarge the key to include all the tree and shrub genera of Borneo. The key will be continually updated and put on the server at Harvard

[ftp://huh.harvard.edu/pub/bbbr/bbbr@.exe]. Additionally, any feedback on characters or character states will be considered for inclusion.

Dallwitz, M.J. 1980. A general system for coding taxonomic information. Taxon 29: 41—46.

Dallwitz, M.J., T. A. Paine, and E. J. Zurcher. 1993. Users guide to the DELTA system, 4th edition. CSIRO Division of Entomology, Canberra.

Jarvie, J. K. & Ermayanti. 1995. An interactive key to the tree and shrub genera of Bukit Baka-Bukit Raya (electronic version, only).

Inventory and Documentation of Traditionally used Medicinal Plants in the Minahasa and Sangihe-Talaud (Celebes) — The primary health care program 'Development of Traditional Medicine' in North Celebes is carried out in co-operation with the provincial health services and the health foundation of the Protestant church. A botanist's part in this program was intended to lay the instrumental grounds for the publication of a manual, the 'Pedoman Obat Tradisional untuk Kader Kesehatan'. The manual shall compile the experience gained by primary health care staff during years of work in the program, and it will contain a knowledgeable, regionally adapted choice of prescriptions.

From this, two corollary aims have been derived:

To compile an inventory of the traditional medicinal plants used in the Minahasa and Sangihe-Talaud, in the form of a documented herbarium and a computer database.

To implement a medicinal plant garden as a living inventory of the regional stock of medicinal plants, serving as a model garden in primary health care cadre education, as well as for scientific and experimental purposes.

State by February 1996:

35 disease pictures are planned to be treated in the manual. A number of 100 prescriptions has been chosen as cures for these diseases, involving 70 plant species. These species have been collected and identified with priority: 40 of them have already been collected as herbarium specimens in flowering and/or fruiting state, 50 of them are in cultivation in the garden.

The medicinal plant garden 'TOGA percontohan dan Kebun percobaan Pasuwengen' is located in Tomohon, at 800 m alt. The 1.5 ha area is owned by the Bethesda hospital and maintained by the primary health care division of the hospital in cooperation with the local school for agriculture. About 150 collections are in cultivation. Pilot production for 'Kemiri', 'Ketepeng cina', 'Aneis', 'Kaki kuda' and 'Limbalo' has been started, these being ingredients for valuable traditional medicines, which may be distributed in dried and ground form (simplicia). Additionally some cash-crop production is done, aiming at a self-supporting garden management.

Plant collections were made in the Minahasa (Wineru, Kec. Likupang, Tomohon, Pinaras, Tara-tara, all in Kec. Tomohon, Liandok, Kec. Tompaso Baru) and on Sangihe island (Tahuna, Kec. Tahuna, Gunung, Kec. Tabukan Tengah). Dry specimens, alcohol samples, and photos have been collected. The dry specimens will be incorporated into a herbarium for educational purposes. Duplicates have been given to Universitas Sam Ratulangi Manado ('UNSRAT'), BO, and L, where specialists have assisted in their identi-

fication. Mr. R. Kainde (Fac. of Agriculture, UNSRAT) assisted to the field work, learning collection, conservation and identification techniques. Later he made his own collections in other sites of the region. His studies will end up in a Master thesis entitled 'Biodiversity of Medicinal Plants in the Minahasa', to be published by the Universitas Gajah Mada (Yogyakarta) ('UGM') under the supervision of Dr. Rudjiman (Fac. of Agriculture, UGM).

A database is envisaged to cover the needs of the program. The subject 'Ethnobotany' is currently under development and the available data are being entered. It contains 4 files: Nama (500 records), Takson (400 rec.), Koleksi (300 rec.), NamTksLk (1000 rec.).

Further facilities like photo archive, slide archive, library with pertaining botanical, ethnobotanical, pharmacological, and medical literature have been extended.

The program is intended to investigate, promote and develop regional indigenous traditional medicine. A cycle of information gathering and redistribution between the professional primary health care services and the popular and healer's medicinal tradition is currently evolving. Conclusions have been drawn as to support this Give and Take approach in a more systematic way. Some thoughts on perspectives for research and development in the field of traditional medicine have been entered. —— C.A. Wagner.

PUBLICATIONS

Flora Malesiana on CD-ROM. With financial support from the Dutch Government, L in co-operation with ETI has developed a demonstration CD-ROM. This CD-ROM contains the information on the staghorn ferns (*Platycerium*; based on the monograph of Hennipman & Roos, 1982) and has been on show during the fair accompanying the Conference of Parties of the Biodiversity Convention in Jakarta in November. The possibilities of the multi-media format for presenting all kinds of information and especially for developing easy-to-use identification tools to meet the demands of the non-specialist users of taxonomic information look very promising. Therefore, this single demo CD-ROM should get follow-up. One project in this respect is planned to start next winter, i.e., a joined project of L and ETI to develop a CD-ROM on the Malesian legume genera.

Flora of Australia, vol. 16. Elaeagnaceae, Proteaceae 1 (1995) (A.E. Orchard, Exec. ed). Elaeagnaceae has only *Elaeagnus* with 1 species and 2 varieties. The Proteaceae are dealt with in this volume and the forthcoming vol. 17. The present one contains the general chapters, generic key, and treatments of all tribes but the Grevilleeae and Banksieae.

Flora of Thailand. The Myrsinaceae and Primulaceae are in print. Manuscripts of the Apocynaceae, Cruciferae, Cyperaceae, Linaceae and allied families, and Sterculiaceae are being edited.

Manuals for dipterocarps for Foresters. The first phase finished in March 1996. By then manuals have been completed for Singapore (published 1995), Sumatra light hardwoods, Borneo light hardwoods, and the Philippines (in print).

The Manual of forest fruits, seeds and seedlings by Dr. F.S.P. Ng is intended to be published on CD-ROM by the Center for International Forestry Research (CIFOR), Bogor. The disadvantages of the book form are that the two volumes weigh 4 kg (expensive to mail, and too heavy to carry into the field), and text and pictures are not directly linked. A CD would be light and durable, it would be easier to search for information, and it can be updated more easily.

A problem at present is that the storage capacity needed exceeds 3 Gb, much more than present-day CDs can accept. With the speed that disk size at present undergo, it is assumed that by the end of 1996 the next generation of CDs will accept much more than this size, while next year many PCs will be produced that will be able to read them.

For those who are interested in publishing floras for reading on a computer screen, I would like to comment that you cannot read text on a screen like you read text in a book. Scrolling from screen to screen will quickly ruin your day and give you a headache. Information should be presented in screen-sized packets and tough standards have to be imposed on verbiage. I, personally, think this will improve taxonomic writing immensely.

Actually, reading text on screen is not as efficient as VIEWING information on screen. This is where multimedia come in with the incorporation of images that can be zoomed in and out, and text design that offers viewers options to select how much detail they want. The Encyclopaedia Brittanica CD vs. 2.0 provides a good example of how text should be presented, but I think we are still in the early stages of electronic information presentation. The best is yet to come. —— F.S.P. Ng.

Rain forest in the city: Bukit Timah Nature Reserve Singapore, Gard. Bull., Singapore, Suppl. 3 (1995) 1—168, edited by Chin, S.C., R.T. Corlett, Y.C. Wee & S.Y. Geh contains a collection of various papers on history, botany, zoology. The flowering plants (570 spp) are analyzed by Corlett, and their relation with animals given. H.T.W. Tan, K.S. Chua & I.M. Turner have floristically revised the Rubiaceae, Y.C. Wee the pteridophytes, bryophytes (with H. Mohammed) and the algae.

Handbooks of the Flora of Papua New Guinea. The publication of the third volume took place by the end of 1995. The largest contributions are on Araliaceae, Guttiferae, Loganiaceae, and Proteaceae. New ground, not previously covered also in Flora Malesiana, is broken with the accounts of Guttiferae, Nelumbonaceae, and Nymphaeaceae; while those of Loganiaceae and Proteaceae in particular reflect changes in knowledge since publication of the FM accounts in respectively 1955 and 1962. The treatment of the Araliaceae was, however, completed around the same time or shortly after that for the FM (1979) and not subsequently revised. In an appendix *Osmoxylon* and more recent notes on New Guinea species of Araliaceae are treated. — D.G. Frodin.