V. EXPEDITIONS AND OTHER FIELDWORK

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General

Southeast Asia Plant Collecting Project. — Since September 1986 a plant collecting project in Southeast Asia has been started by the Program for Collaborative Research in the Pharmaceutical Sciences (PCRPS), University of Illinois, with funds from the United States National Cancer Institute (NCI) and the participation of the Arnold Arboretum (A), and the John G. Searle Herbarium (F). Similar projects have also been started for the tropics of America and Africa by the New York (NY) and Missouri (MO) Botanical Gardens, respectively.

Under the project the tropical rain forests of S.E. Asia will be explored for the next 5 years in order to collect plant samples which will be screened for anti-cancer and anti-AIDS properties. This will be carried out by the NCI at their Frederick Cancer Research Facilities in Maryland. Voucher specimens will be collected and deposited in A, F, L, US, and the national herbaria of the host countries.

Between 1957 and 1980 NCI has screened more than 35,000 plant species for their anti-cancer properties, but most of these had been collected in temperate zones. The tropical rain forests, much richer areas, were hardly involved. This, together with the alarming rate whereby they are disappearing and the development of more sensitive test systems, has prompted the NCI to start a new program with the tropical rain forests as its primary goal.

The major emphasis will be on the native flowering plants which have never been screened previously by NCI, and/or which are locally said to have medicinal properties, especially when these are in the treatment of cancer or related diseases. This does not mean that species that have been tested previously will be ignored, as it may be possible that properties missed before may now be detected with the more sensitive methods of testing. The principal goal, however, is to discover new chemical compounds that eventually could be useful in the treatment of cancer or AIDS. Once a plant is found to have some activity, more material will be needed for isolation of the active components to determine their molecular formulas. Test results of the samples will be made available to the botanical institutions of the counterpart countries, as well as to governmental agencies, if requested.

During the first year (1987) of the project a number of collecting trips have been carried out with the cooperation of various Institutions in Southeast Asia:

Thailand: Drs. D.D. SOEJARTO (PCRPS), T. SMITINAND, and T. SANTISUK (BKF) collected in the southern and southeastern evergreen forests and in the deciduous ones of Korat, Saraburi, and Nakhon Ratchasima Provinces.

Malaysia: Drs. B.C. STONE (PH), W. MEIJER (KY), and J.S. BURLEY (A) collected with the cooperation of the Forest Research Institute of Malaya (KEP), and the Departments of Forest in Kuching (KUCH) and Sandakan (SAN).

The Philippines: Drs. J.S. BURLEY (A), D.A. MADULID (PNH), B.C. STONE (PH), and G. VARADARAJAN (A) have collected in Luzon, Sibuyan, Mindoro, and the Panay Islands.

For the second year (1988) field work is planned for E. Sumatra and W. Kalimantan, Malaysia, and Palawan.

In later years expeditions will be made to other S.E. Asian countries, Indonesia, and Papua New Guinea, while recollections for additional material will be made in the areas previously visited.

Although this project is not purely botanical in its goal, data and specimens collected will increase knowledge for the Flora Malesiana. — After a letter from Dr. D.D. SOEJARTO, College of Pharmacy, University of Illinois, POB 6998, Chicago, Illinois 60680, U.S.A.

Malaya

The Endau-Rompin Expedition. — Some literature may be found in K. RUBELI. Endau-Rompin: a refuge for Malaysia's rain forest. Habitat (Austr.) 14/4 (1986) 19–22, 6 col. phot., while the whole issue of the Mal. Nat. 40/2 (1986) is dedicated to the general assessment of the expedition.

In April 1987 Dr A.M. LATIFF and Mr. A. ZAINUDDIN (UKMB) collected 36 numbers in Padang Tengku, Kuala Lipis (Pahang), Jeli and Bt. Bakar (Kelantan).

Sumatra

Between 4 and 8 December 1987 Ms. Dr. E.A. WIDJAJA (BO) visited the Lampung and South Sumatra Provinces for a field scaling-up experiment of bamboo cultivation. She returned with 54 numbers, e.g. of bamboos, *Mimosa*, and *Phanera*.

Java

Ms. Dr. E.A. WIDJAJA (BO) stayed in the Pangalengan G. Tilu Nature Reserve between 11 and 15 May 1987 to study the possibility of transplanting the bamboo *Nastus elegantissimus* into the Cibodas Mountain Garden. Besides 35 voucher specimens of plants growing underneath bamboos for an ecological analysis, she managed to transplant seedlings of *Areca* and *Paphiopedilum* to Cibodas as well.

Between 15 and 20 June 1987 Mss. M. RAHAYU and Y. JAMAL (BO) undertook an ethnobotanical survey in the South Priangan area.

Messrs. J.P. MOGEA, A. SULAEMAN, T. UJI, and H. WIRIADINATA (BO) collected 50 numbers on Mt. Ceremai in the Ciribon area between 20 and 25 July 1987.

Messrs. U.W. MAHYAR, J.P. MOGEA, A. SULAEMAN, and H. WIRIADINATA (BO) visited a forest area near Lengkong, Sukabumi, to collect Apostasioids, and to make an inventory of the palms growing there.

On 15 December 1987 Ms. Dr. E.A. WIDJAJA, Rugayah, and Mr. U.W. MAHYAR (BO) collected data on the social forestry of bamboos in the Cibitung area, Bogor.

Dr. J.C. KRUG (TRTC) collected 259 fungi in the Cibodas Gunung Gede Nature Reserve between 14 and 28 January 1988.

Christmas Island (Indian Ocean)

Drs. D.J. and B.P. DU PUY (K) between 30 March and 7 June 1987 visited to check on the completeness of data for the volume on the island in the Flora of Australia Series. 112 specimens and 8 seed samples for cultivation in K were collected. Herbarium material in a CI-series is deposited in K and CBG.

Borneo (s.l.)

Sabah. — Dr. A.J.G.H. KOSTERMANS (BO) made a field trip in July and August 1986 to find species of *Mangifera*. He traveled in the neighbourhood of Mt. Kinabalu, the Crocker Range, Tenom Valley, Sandakan and surroundings, and Southeast of the Tawao River. Three new species were discovered, among which probably the highest mangga tree ever: 50 m tall! Next to representatives of (hopefully) all *Mangifera* species other fruit trees were collected as well: *Durio* (1 undescribed species), *Baccaurea, Euphoria,* and *Nephelium.*

Messrs. N. BROWN (OXF) and D. KENNEDY (ABD) have started a 2-year study at the Danum Valley Forest in February 1987 on regrowth of forest in canopy gaps. Ten artificial gaps were created varying between 800 and 1500 m² in size. Seed germination, seedling behaviour, and microclimate are being closely monitored. Drs. M.D. SWAINE (ABD) and T.M. WHITMORE (OXF) supervise this study and visited in February and June 1987. In the last period Drs. Y.K. GONG and J.Y. ONG also joined to study these gaps by means of hemisphere photos of the canopy taken with a 180° fisheye lens. Between December 1987 and August 1988 GONG will stay in Oxford on a Royal Society Foundation Commonwealth Fellowship to analyse these photos and to work on modeling mangrove forests at the Plymouth Marine Biology Station.

In June 1987 Drs. A.M. LATIFF, A. BIDIN, and Messrs. A. ZAINUDDIN (UKMB) and K.M. SALLEH (UKMS) made further collections in the Danum Valley, G. Alab, Crocker Range. In November they collected at Tenom, Crocker Range. In all 225 numbers were made.

Within the scope of the S.E. Asia Plant Collection Project of the U.S. National Cancer Institute Dr. W. MEIJER (KY) between 6 September and 18 December 1987 made a visit to various localities (Poring, Kinabalu, Crocker Range near Tenom) in cooperation with Mr. A. LAMB, and on Mt. Trusmadi in cooperation with Mr. KAMARUDDIN (UKM), who concentrated on *Annonaceae*, ferns, and bryophytes. About 350 collections were made.

Extensive collections were made at the end of 1987 by Mr. L. MADANI (SAN) in large sample plots in the Sapulut area West of Tawau in cooperation with Mr. C. PHILLIPPS, who served as Forest ecologist until February 1988.

Ms. Dr. B.S. PARRIS (K) in April and May 1988 studied the *ferns* in the Kinabalu Park, the Crocker Range, and Mt. Trusmadi.

Sarawak. — Dr. A.J.G.H. KOSTERMANS (BO) made a field trip in August 1986 to find species of *Mangifera*. He traveled around Kuching and in the surroundings of Bintulu, where there were a great number of species in abandoned Dayak gardens.

Philippines

For the PROSEA Project Drs. C.E. RIDSDALE (L), P.C.M. JANSEN and J.S. SIEMONDSMA (WAG) made fact-finding missions to Thailand and the Philippines between 15 November and 12 December 1987. In Thailand the latter two also attended the Mungbean Symposium (15–21 November).

Moluccas

Ceram. — Ms. Dr. B.S. PARRIS (K) joined the Raleigh Expedition in Ceram for 7 weeks in August and September 1987. She collected 227 numbers of ferns, chiefly on G. Binaia, where she also studied the altitudinal zonation of *ferns* along a transect up the mountain. The main set will be deposited in BO, the second in K, others will go to L, A, etc.

Staff members of BO who participated in the British-based 'Operation Raleigh' scientific expedition were Messrs. Mr. R. YUSUF (15 June–22 August), T. PARTOMIHARDJO (29 June–12 August), and Ms. M. RAHAYU (4 October–1 December). Their participation took the form of individual investigations on patch dynamics, epiphyte biology, and ethnobotany, respectively. Altogether they gathered 55 numbers, 300 vouchers, and 20 ethnobotanical artifacts.

New Guinea

Papua New Guinea. — Japanese Botanical expedition to Papua New Guinea, 1985 organized by the Osaka University. For a report see H. OKADA (1987) in the Bibliography.

Between 14 August and 21 October 1987 Dr. P. GOETGHEBEUR (*Cyperaceae, Gramineae, ferns,* and *fungi*) and W. VYVERMAN, fresh water phycologist, (GENT) made an expedition starting from the King Leopold III Research Station, Laing Isl., Madang.

The flora of the island itself was studied and found to have deteriorated considerably, especially because of large colonies of Black noddies and Lesser frigatebirds. Trips were made to various rivers on the mainland for watersamples and general botanical collections, e.g. to the Sakula, Kumil, Gilagil, Mije, and Ginugub, between Usino and Lae in the Ramu and Maniang Rivers, Clean Water Creek, and near Lae in the Labu Swamp at the mouth of the Markham. On the way to Mumeng and Wagau collections were made in the Gabensis, Gorogas, and Wampit Rivers, and in the Wagau Swamp, then to Bulolo along the Snake River and its tributaries. Along the Wau–Biaru Road collections were made in the mountain rain forest, and along the Elek and Kak Rivulets, and along the Iwalewi and Kobek Creeks. Near Wau a salt spring was inspected, and on the way the Bulolo and Snake Rivers. In the neighbourhood of Madang the lowland rain forest and a sulphur spring were visited.

Another trip was made to Kandep and to the little disturbed Kokasa Swamp with various aquatic spots in the surroundings (Koliak and Lagaip Rivers, Angak Swamp, Pobekmana Creek). While VYVERMAN visited Lake Lau, Parago Lake, and a salt spring, GOETGHEBEUR went back to Kandep collecting in the rain forest and the Kokasa Swamp near Mang. Together they went to Lake Papail, the Mariant River, Lake Sirunki, Ramu River, between Wabag and Mendi to Lake Birip, and a subalpine marsh 20 km past Wapenamanda, near Mendi to Lake Egari and the Tongo River. Finally Mt. Giluwe was climbed.

A third trip was made to Angoram, were collections were made along the Kambaramba

oxbow lake and along the Sepik; between Mindimbit and Kuvenmas along the Blackwater River, along and on floating islands in Lake Kuvenmas (black water!), Korosameri River, Gingurat and Mindimbit oxbow lakes, Chambri Lake, which fills in the rainy season. Between Angoram and Laing some more collections were made at the mouth of the 'barat' (small, often man-made connecting creek) between the Sepik and Watam.

After heavy rain in Laing many small polypores could be collected for Ms. E QUANTEN (GENT).

These explorations resulted in 640 numbers and 200 water samples to be deposited and studied in GENT, with duplicates of the specimens in LAE, L, and LG.

Solomon Islands

Messrs. I. HANCOCK and C. HENDERSON, two British agronomists, are making an ethnobotanical survey of the Solomon Islands with an emphasis on agricultural and economically important plants. Medical uses are also briefly noted. They have already collected more than 500 numbers from all provinces, except Choiseul and the Shortlands of the Western Province. These vouchers will be deposited in BSIP. They hope to publish the results in a handbook: 'A guide to the useful plants of the Solomon Islands', to be released by the end of August, 1988, by the Government Printers, Honiara, Solomon Islands.