V. EXPEDITIONS AND OTHER FIELDWORK

(continued from page 155)

M a l a y a

Between 22 February and 18 March 1985 the Kew Assistants' Expedition was held. Members were Ms. F. BOOTH, Ms. L. FITT, Ms. S. OLDRIDGE, Ms. B. SWAIN, Mr. D. COOKE, Mr. P. EDWARDS and Mr. B. STANNARD under the guidance of Dr. B. CROXALL, Dr. S. DRANSFIELD and Dr. J. DRANSFIELD.

Between February and March 1985 Dr. B.S. PARRIS and Mr. P.J. EDWARDS (K) collected pteridophytes at Taman Negara, Genting Highlands, Pasoh and Fraser's Hill-top. The main set is in K with duplicates at KEP and UKMB.

Endau-Rompin, the forest area in Johore State that is being proposed as a National Park, has been explored between June 1985 and June 1986. The Malayan Nature Society and a local English daily, the 'Star', are sponsoring this expedition. The botanists and other staff members of the Forest Research Institute of Malaysia (KEP) visited the area on a number of occasions and collections of plants are continuing. Plot enumerations of plants growing in selected sites

there have been compiled. Already there are indications of 'new' species and new records of species for Malaya.

In mid-June the Malaysian forest ecology expedition 1985 left Aberdeen for a tour of about 8 weeks at the Pasoh Forest Reserve. The members were the students Ms. C. BERRIMAND, J. CUMBERBIRCH, J. YOUNG, and Mr. C. BUIST. Staff of FRI gave assistance and Dr. M. SWAIN visited them during his tour.

In July 1985 Dr. P.S. ASHTON (A), Mr. N. MANOKARAN (KEP) and Dr. S.P. HUBBELL (IA) worked in the Pasoh Forest Reserve, Negeri Sembilan. Supported by a grant from the U.S. National Science Foundation, and under the sponsorship and strong support of KEP they established a 50 hectare plot, which will be a companion to one already set up by Hubbell at the Smithsonian station on Barro Colorado Island (Panama). Mssrs. M.N. HUSIN, MANOKARAN, L.G. SAW and K.M. WONG (KEP) spent some weeks at that island to get familiar with the methods. From February 1986 on they will enumerate all plants with a stem diameter of 1 cm or more. Plots will be used that were already established in 1961 and 1971. One of the aims is to obtain a large enough sample to compare the demography of species with low and high population densities, and eventually to understand the mechanisms by which species richness in mixed rain forests is maintained a little better.

Dr. A. LATIFF & Mr. A. ZAINUDDIN (UKMB) collected ca. 110 numbers of mainly Angiosperms in the Cameron Highlands.

In November 1985 a party of UKMB staff led by Dr. A. LATIFF and Dr. N.N. TAMIN collected 247 numbers along and in the vicinity of the Sg. Nenggiri, Ulu Kelantan.

Several trips were made by Dr. A.A. BIDIN, Dr. A. LATIFF, Mr. R. JAMAN and Mr. Z. IBRAHIM to P. Langkawi where they collected 157 Angiosperms, 17 mosses and ca. 300 ferns.

Mr. A. MOAD, a Fulbright scholar to Malaysia under the guidance of ASHTON is studying the demography and physiological ecology of saplings of congeneric sympatric dipterocarp species in Pasoh.

I n d o n e s i a

The data on the exploration of Indonesia have been based largely on Pewarta LBN-LIPI extracted by Dr. M.M.J. VAN BALGOOY (L). Only those trips that have yielded a substantial amount of herbarium specimens (deposited in BO) have here been included. Unfortunately it is not always quite clear who belongs to what institute or organization.

S u m a t r a

Dr. E.F. DE VOGEL and Mr. J.J. VERMEULEN (L) collected 330 herbarium numbers and 120 samples of living orchids between 900 and 1100 m altitude in Air Sirah, West Coast, in the first two weeks of May 1985.

The Fourth Leuser Expedition was executed between 12 June and 18 August 1985 by Dr. W.J.J.O. DE WILDE, Ms. Dr. B.E.E. DE WILDE-DUYFJES (L) and Mr. ISMAIL (BO). This time attention was paid to the lowland marshy forests below 50 m altitude. Three areas, all in South Aceh, mainly outside but adjacent to the Park were investigated: the riverine and marshy forest along the lower Lembang River (the Northern boundary of the Kloët Reserve), forests along the middle Alas River

(South of Muara Bengkong, just South of the Park), and the dry land, marshy and peatswamp forest in the Sinkil area (Simpang Kiri), partly logged over. This latter area is proposed as an addition to the Park as it would add lowland marshy forest as a habitat to the Leuser Park.

Over 1300 numbers were collected, including many novelties, to be deposited in BO, L, and elsewhere.

Mssrs. E. MIRMANTO and A. RUSKANDI (BO) collected 50 numbers and over 400 vouchers in Ketambe between 25 June and 25 July 1985.

Java

Mr. T. PARTOMIHARDJO (BO) paid two visits from 17 February to 2 March and from 20 July to 3 August 1985 to the Baluran National Park in E. Java to study the vegetation.

During the course in Advanced Taxonomy in BO two of the participants from L, Dr. M.M.J. VAN BALGOOY and Dr. E.F. DE VOGEL accompanied by BO staff members took the opportunity to do some collecting. They visited the Lengkong area, the G. Salak and G. Halimun areas and bagged some 250 numbers.

Lesser Sunda Islands

Bali. —— Mssrs. I.B.M. ADNYANA, I.B.K. ARISANA and I.W. MUDARSA (Bali Bot. Gard.) made trips to several places on the island collecting some 150 numbers.

In October 1985 Dr. M.M.J. VAN BALGOOY (L) paid a 2-day visit at the invitation of Dr. I.G.M. TANTRA, head of the Forestry Office. Trips were made to G. Klatakan (W. Bali) with much Dipterocarpus hasseltii and Stelechocarpus, and the Kubu area (E. Bali) with much Santalum album, resulting in 35 numbers.

Lombok. —— Two teams from the Kebun Raya Eka Karya (Bali) visited the island: Mssrs. DARMA, I.K.N. RAI and I.W. WARNATA (Bali Bot. Gard.) from 25 November to 24 December and Mssrs. PENDIT, SUDIARKA and SUMANTERA (Bali Bot. Gard.) from 28 November to 27 December. They collected over 100 living plants.

Tanimbar Islands —— Mssrs. ISMOYO, PURWANINGSIH, SANUSI (BO) and SUDARMANU (BO Zool. Mus.) collected 160 herbarium numbers and 128 living specimens between 3 November and 3 December.

Borneo (s.l.)

Sabah. —— Dr. B.S. PARRIS (K) collected pteridophytes under the aegis of the Royal Society (London) Expedition to the Danum Valley. This is a joint expedition with the Sabah Foundation, the Forest Research Institute, and the UKMS. Sets will be deposited in K, A, E, KEP, L, SAN, SAR, and UKMS.

In December she visited Mt. Kinabalu. Sets to K and the Park Herbarium.

Dr. B. CROXALL, Dr. B. SPOONER and Mr. B. BLEWETT (K) joined the expedition between 10 December 1985 to 6 January 1986.

Mr. A. MOAD, a Fulbright scholar to Malaysia under the guidance of ASHTON is studying the demography and physiological ecology of saplings of congeneric sympatric dipterocarp species in the Sepilok Forest.

Mr. J.J. VERMEULEN (L) is now studying the Bulbophyllum species of Borneo, as from 22 May 1986 he and Ms. J. HUISMAN (L) will be working for a year at the Orchid Centre in Sabah.

Ms. R.M. SMITH (E) hopes to visit Sabah in June 1986 to hunt for Zingiberaceae.

Dr. J.-P. FRAHM (DUIS), Dr. W. FREY, Dr. H. KUERSCHNER (BSB), Mr.M. MENZEL (B) and Dr. H. MOHAMED (KLU) will perform field studies in the summer of 1986 in Sabah. Along a transect on Mt. Kinabalu special attention will be given to a complete survey of the bryoflora from sea level to the forest line with collections in undisturbed areas at 200 m intervals, the zonation of bryophytes and studies on the ecology of epiphytic bryophytes (abundance, light factor, gas exchange, temperature, humidity), the structure of epiphytic bryophyte vegetation, and also new studies on structural anatomical and morphological adaptations. Similar field studies have been carried out in Peru, which will enable a comparison of the bryoflora and vegetation of both areas. The German Research Foundation has granted this continuation of the Bryotrop Project.

Sarawak. —— The staff of SAR organized two field trips to Lubok Antu (23 February to 13 March 1985) and Ulu Gaat (10 April to 7 May 1985) to collect botanical specimens (ca. 200 numbers) and to gather ethnobotanical data with an emphasis on medical plants from the local Ibans.

Other trips were to Bukit Melatai (7 April to 7 May 1985: 295 numbers), Batu Lawi (15 July to 15 September 1985: 800) and Bau (12 to 22 November 1985: 190).

For the Botanical Research Centre, Semengoh, about 160 species, mainly orchids and gingers have been brought together in 1985.

With a grant from the U.S. National Science Foundation Dr. R. PRIMACK (BSN) will extend research in three sets of permanent plots on contrasting soils in mixed dipterocarp forest. These were set up by ASHTON in the mid-sixties, and have been renumerated at 5 years' intervals under the supervision of Dr. P. CHAI and Mr. H.S. LEE (SAR). The aim is to compare the demography of selected species which manifest high population densities at one site and low at another.

Kalimantan. —— Dr. P.S. ASHTON (A) visited Dr. M. LEIGHTON at a research site at Gunung Palung National Park, Sukadena, in West Kalimantan. This is a coastal granite massif immediately South of the Kapuas Valley and at the northern fringe of the triangle of continental igneous core rocks which extend into West and Central Kalimantan. His own interest was to search for taxa previously known only from Malaya and Sumatra, and also for representatives of the distinct Northwest Borneo (and sometimes East coastal Malaya) element. Reality never confirms expectations. The G. Palung granite is much more siliceous than usual for Malaya. The widespread Sundaland flora, characteristically a clay soil flora, appears to be restricted to well-drained alluvial levees at the base of the hill. It would be in this habitat that the Sumatran-Malayan element would turn up, and he did find Shorea ovalis ssp. sericea, a first record for Borneo, growing there fairly commonly. Future visitors will, Ashton hopes, look out for S. lepidota, S. macroptera ssp. macroptera and S. singkawang, which he would now consider possibilities. A search of the extensive lowland forests, in the Park, and to the Southeast of the mountain could be productive. In spite of the leached soils the Northwestern Borneo element was very poorly represented among the dipterocarps.

The coastal granite species S. gratissima was there, though its nearest known localities are Singapore and Northeast Sabah. Further exploration of the coastal faces of the mountain would certainly be worthwhile.

In March 1986 Ms. H. SABAJO-HAGG joined the team of Dr. M. LEIGHTON (A) at Gunung Palung (West Kalimantan). She is to investigate the dispersal of seeds and fruits especially of Annonaceae, Meliaceae and Sapindaceae. She will be guided in her studies also by Dr. M.M.J. VAN BALGOOY (L). The latter visited the area in May and June 1986, together with Ms. J. VAN SETTEN (U) who is working on the Annonaceae.

C e l e b e s

Mssrs. BOEADI (BO Zool. Mus.), FANAMI and RAMLANTO (BO) visited Tolitoli from 16 February to 18 March 1985 and collected several zoological and botanical specimens, including over 300 herbarium numbers.

Dr. E.F. DE VOGEL and Mr. J.J. VERMEULEN (L) joined the Project Wallace entomological expedition in the Dumoga Park, North Celebes, between 2 March and 19 May, 1985. They collected 855 herbarium specimens and 110 species of living orchids between 220 and 1780 m.

P h i l i p p i n e s

Mindoro. —— Dr. C.E. RIDSDALE (L) has made an fieldtrip to the foothills of Mt. Halcon between 8 and 28 February 1985 collecting 185 numbers. The area was so impressive that he went there again for 2 months from March 1986.

Palawan. —— Between 23 and 27 October 1985 he collected 142 numbers in a forest on ultrabasic along the Massine River Brooks. Pt.

The report on the Hilleshög expedition of 1984 was published.

M o l u c c a s

Ambon and P. Pombo. —— Mssrs. R. JUSUF (BO Bot. Gard.), I. W. MUDARSA (Bali Bot. Gard.), RAMLANTO and RUSKANDI (BO) collected 171 herbarium numbers and 128 living plants between 3 December 1984 and 2 January 1985.

Bacan. —— Between 31 August to 3 September 1985, Ir. K. SIDIYASA (BZF), Dr. T.C. WHITMORE (OXF) and Mr. T.J. WHITMORE collected 50 numbers to be deposited in BO, BZF, L, K.

Ceram. —— Several parties sent by LBN studied Metroxylon and other food resources. A team including Mssrs. H. WIRIADINATA and B. SUNARNO (BO) went to Tehore between 13 February and 13 March collecting some 200 numbers and a large number of living plants. Mssrs. U.W. MAHYAR and SUHARDJONO (BO) went to the western part between 25 April and 23 May 1985 and came home with about 10 collections of sago and 113 other numbers. Between 20 August and 18 September Mssrs. J.P. MOGEA (BO) and E. ROCHANDI (Purwodadi Bot.gard.) collected Metroxylon and other species including many fruit trees in the Amahei and Wahai areas. From 22 November to 15 december Mssrs. J.P. MOGEA and RAMLANTO (BO) collected in the same areas and obtained some more sago as well as over 50 other numbers. At the

same time Ms. N. UTAMI (BO) and Mr. R. JUSUF (BO Bot. Gard.) visited the Piru area and brought home about the same number of specimens.

Dr. M. KATO (TI) and his group will visit this island again between June and September 1986.

Dr. J. PROCTOR (STI) is planning a multidisciplinary expedition to the G. Binaia area in June/September 1987. He will probably approach the area from the North through the newly designated Manusela National Park for which he hopes to help produce a management plan.

Halmaheira. —— Between 8 and 14 September, 1985, Ir. K. SIDIYASA (BZF), Dr. T.C. WHITMORE (OXF) and Mr. T.J. WHITMORE collected 20 km S.E. of Dodinga at Tapayo 34 numbers to be deposited in BO, BZF, L, K. Most remarkable was a dendroid ginger (Alpinia) with a pseudostem 15 m tall mimicking a banana, but with a fan of leaves reminiscent of Ravenala.

Dr. K. OGINO (MATSU) visited the island in 1985 to locate a research site for his mangrove project. He was accompanied by a Japanese zoologist and two biologists from Bogor. Reproductive ecology and phycology will be the main subjects of the botanists in 1986, when Ogino and Dr. M. CHIHARA (TKB) will have their leaderships of the respective subjects.

New Guinea

Irian Jaya. —— Between 10 December and 1 January 1985 a combined LBN team visited the Apauwar River area to establish the boundaries of the Mamberamo - Foja National Park. Several botanical and zoological specimens were obtained.

Between 20 April and 19 May 1985 Ms. N. UTAMI and Mr. J.P. MOGEA (BO) surveyed the Paniai Distr. for carbohydrate food resources (mainly Metroxylon). Some 130 herbarium numbers were collected.

Between 27 May and 10 July a combined survey team including Ms. Dr. E. WIDJAJA (BO) visited the Lorentz National Park. During the survey between 50—4000 m some 320 numbers and several living plants were collected.

Between 20 August and 15 September Ms. Y. INDIARTO and Mr. SUKENDAR (BO) collected several sago samples and some other 225 numbers around Manokwari.

The Mamberamo area was again visited by a survey team of the Taman National Parks Section of PHPA consisting of Mssrs. A. ADHIKERANA, R. JUSUF (BO Bot. Gard.), MANUNDAR (BO), M. MU'AMAR and ONDIDI. They brought home a large collection including 370 herbarium numbers.

Between 22 November and 24 December Ms. S. SUNARTI and Mr. SUHARDJONO (BO) collected 7 samples of Metroxylon and 153 herbarium numbers around Merauke.

Another team consisting of Dr. WIDJAJA and Mssrs. HAMZAH (BO), I.W. MUDARSA (Bali Bot. Gard.), and NOERDJITO visited several places: Cyclops, Manokwari, Sentani and Tembaga Pura (Carstensz). Their collections included 300 herbarium numbers and 500 living plants.

Papua New Guinea —— The National Science Museum, Tokyo, has organized at least 5 expeditions, especially aimed at cryptogams, to Papua New Guinea and the Solomon Islands between 1964 and 1975. Somehow they have escaped the attention of the editors of the Flora Malesiana Bulletin, although the articles resulting from

them have been mentioned. Brief reports have now been received on the expeditions of 1973—1974 and 1975.

The first expedition (see Y. OTANI, Reports on the Cryptogams in Papua New Guinea, National Science Museum, Tokyo, 1975, 1—3, map) was attended by Mssrs. H. KASHIWADANI, T. NAKAIKE, Y. OTANI (leader), N. TAKAKI, and T. YAMAGISHI. Collections were made in the Wau - Bulolo area between 1000—2500 m alt.: near the Wau Ecology Institute, on Mt. Kaindi, Mt. Missim, Mt. Kaisinik, and near Bulolo (18—24 December, 1973); in the Mt. Wilhelm are: along the trail from Keglsugl to the ANU station, around that, along a trail to a camp at 4330 m alt. and around the latter, and also at Gembogl and Kundiawa (28 December to 7 January 1974); in the Woitape - Mt. Albert Edward area at 1500—2500 m alt.: Woitape, along the trail up the mountain, and around the Abios hut (15—25 January); some collections were also made around the Markham Bridge, Lae, along the road from Lae to Gabensis, along the road from Madang to Mawan, and in the neighbourhood of Port Moresby. In the report cited above 30 taxa of cup fungi (incl. 2 new species and 2 new varieties), 164 taxa of plankton algae, 55 taxa of lichens, 7 taxa of mosses (incl. 1 new species), and 8 taxa of ferns (incl. 2 new species) are treated. The first set has been deposited at TNS, the first duplicates of fungi, lichen and algae were sent to PNG, and those of the mosses and ferns to LAE.

The expedition of 1975 (see S. KUROKAWA in Studies on Cryptogams of Papua New Guinea, Academia Scientific Book Inc., 1979, 1—3, map; cited in Flora Malesiana Bulletin p. 3623) was attended by Mssrs. H. INOUE, H. KANAI, S. KUROKAWA (leader), M. WATANABE, and K. YOKOYAMA. The party visited 'Port Moresby, Woitape, Mt. Albert Edward, Lae, Kasanombe, Wau, etc.'; more localities are given on the map. It is not mentioned where the collections went to, presumably to the same institutes as mentioned above.

It is little known that there is a Belgian Biological Research Station on Laing Island in the Hansa Bay near Bogia (Madang) named after King Leopold III. Only recently has a rapport reached us on a botanical survey held there between 29 November 1979 and 23 February 1980 by Dr. V. DEMOULIN and Mr. L. SMEETS (LG). Collections were made mainly on the Island and during short trips to Manam Island, coastal areas between Awar and Bogia, in the Ramu region in Boroj, Bonapas, and Yoro (Mugumat) in the Adelbert Mts.

In total 450 numbers were collected, i.e. 157 phanerogams, 22 ferns, 35 algae, 103 lichens and mosses, and 134 fungi. It was attempted to collect at least in 6-fold. The first set is deposited in LG, the second in LAE, the third to UPNG, others have gone to BR, L, GENT, US, K, B, TNS, NSW, NY, A, PNH, BO, SING, E, P, G, BM, BKF more or less in that order, with those of Verbenaceae to H.N. MOLDENKE (NY). Whenever possible wood samples were collected and colour slides made. A century of trees have been numbered permanently to complete collections in the future.

The good facilities of the Station enabled SMEETS to use a stove for drying, while the presence of microscopes permitted numerous observations on living material. There is also a small library to facilitate immediate pre-identifications.

With diving equipment the extensive seagrass fields of the Bay were investigated. These appear to consist of 5 species: Halophila bullosa, H. ovata, and occasionally Halodule uninervis and H. pinifolia in pioneer vegetations, either

there where wave action or that of burrowing animals (towards 10 m depth) is pronounced. The presence of Halophila ovata at such depths seems to have been unrecorded so far. Halophila ovalis and the Halodule species form dense fields where the soil is more stable. These are grazed by tortoises, while it is also the habitat of Heteroconger.

From the plentiful living material and equipment available it has turned out that the Halodule species may be distinguished by the shape of the apex of the leaf and by some microscopic characters such as the presence of reflexed hairs, shape of the marginal cells, and intercellular partitions. By such characters H. ovalis ssp. bullosa seems to warrant specific rank and the problem of the apparent intermediary forms between H. ovalis and H. ovata observed by JOHNSTONE (Aquatic Bot. 5, 1978, 229—233) in Papua New Guinea may be resolved. At least some of these appear to belong to 'ssp. bullosa'.

Algae were also collected down to 45 m depth, the bottom of the Bay. Special attention was paid to the larger species with an important function in the physiognomy of the reef. Especially collected were the Caulerpales, e.g. Halimeda of which at first sight there appear to be 7 species, some of which in various forms and varieties. A more extensive study of the algal vegetation will be made by Mr. E. COPPEJANS, GENT.

Very rich collections could be made of epiphyllous lichens: at least 70 collections, each with several species. These lichens which have up to now had little attention in the region were collected in a great number of habitats and on extremely varied substrates. Mr. E. SÉRUSIAUX (LG) intends to publish on them.

Of the fungi the polypores turned out to be rare. It is intended to publish an article on the Gasteromycetes of Papua New Guinea principally based on the species collected here and those observed in other institutes (BKF, BO, Bulolo, SING, ZT).

Manam, although densely populated, is still very interesting due to its high humidity favourable for epiphytism and the absence of industrial plantations. Even in the cultivated areas there is still a great floristic diversity. On recent lava streams the various successive stages of pioneer vegetations can well be studied.

In the plains between the coast and the Ramu R. as well as in the Adelbert Mts. there is a variety of degraded herbaceous savannahs, marsh forest passing into mangrove, dry low land forest and hill forest. All of these proved to be very rich. Unfortunately the forests are disappearing rapidly due to agricultural activities and unless protected soon will disappear in the coming decades.

On 16 and 23 December 1979 collections were made in the mountains between Madang and the Ramu R. and in the upper Ramu valley; on 17 and 19 December in the Highlands near Mt. Wilhelm (cryptogams collected); on 21 and 22 December in the Kuper Range between Lae and Wau.

Before and after the expedition visits were made to Bangkok (30 November to 6 December), Singapore (6 to 10 December), and Bogor (17 to 22 February), where next to herbarium studies 124 numbers mainly of fungi and lichens were gathered in Sara Buri, Thailand, Mt. Ritchie and Bt. Timat, Singapore, and in the Kebun Raya.

Mr. J. VAN VALKENBURG (WAG) has started a botanical inventory of Mt. Missim and Mt. Kaindi in Papua New Guinea.