V. EXPEDITIONS AND OTHER EXPLORATION

(contnd from p.632)

M a l a y a.

Mr J.S i n c l a i r reported that during 1959 several smaller collections were made in Pahang, Johore, Kelantan, and Perak.

B o r n e o.

Sarawak. Mr J.A.R.A n d e r s o n, Kuching, was during 8 months on leave; he spent some time at Edinburgh and Oxford, working out data on the Sarawak-Brunei swamp forests.

Mr E.J.H.C o r n e r, F.R.S., visited Sarawak in February, and sorted out Moraceous specimens in the herbarium. He also visited Bako Nat.Park and neighbouring forest reserves in search of figs.

Dr E.F.W. Brünig continued his ecological studies on heath forests. He explored the Merurong Plateau in Central Sarawak and also undertook further ecological work on Bt Saripah and the Sungei Dalam Forest Reserve.

Sarawak Herbarium, Kuching. Until a short time ago there were two herbaria at Sarawak, the oldest and largest being in the Sarawak Museum which, though not well cared for during many years, contains still important collections of Hose, Haviland, and others, with many isotypes. The new one was of the Forestry Service. With the building of a new Museum it had been decided to combine the two herbaria. Unfortunately the Museum is so rapidly growing under the energetic hands of Mr Harrison, that the space allotted to the Herbarium was required for other purposes.

Thanks to a hundred percent grant from the British Government, out of the C.D.& W.Funds, a new Herbarium can now be built and equipped, separate from the Museum. This is probably the best solution, as the trend of the Museum is so much going towards the archaeological and zoological side that botany has become a cinderella there.

The new Sarawak Herbarium will be erected near the new Forest Department offices, now under construction. It will be under the sole charge of the Forest Department, and the Sarawak Museum collections will be on permanent loan and preserved there. Mr Anderson added that "with the collection adequately housed, and considerable room for expansion, and also working space for visiting scientists, let us hope that we will be able, in the not too distant future, to obtain the appointment of a botanist."

North Borneo. The following report on botanical exploration in 1959 was received from Dr W.M e i j e r, Forest Botanist, Sandakan:

I arrived May 20th in North Borneo. A tour of about one month was held in the regions of Tawau from the end of June until the end of July mainly for the collecting of flowering and fruiting Dipterocarps of which about 50 different species were found. Total collection 385 numbers. Short trips were held on various occasions in Sepilok Forest Reserve where 360 trees were numbered and named in order to make at the long run complete collections from the same trees.

A two weeks trip was made in various regions on the West Coast in which coastal Dipterocarp forest, coastal padang and swamps, the rich Dipterocarp forests in the Padas Gorge and the surroundings of Kinabalu could be visited. It appears that much of the original vegetation is disappearing on the West Coast as a consequence of shifting cultivation. From 27th October until 9th November was a visit made to the lower slopes of Kinabalu near Ranau and above Bundu Tuhan and Tenompok. Various rare and new Dipterocarps were found in the upper Dipterocarp forests on ultra basic soil north of Ranau. A new locality of Rafflesia was discovered and a short climb was made via the classical route up to about 8000 feet altitude. A plea was made as a result of this trip to include forests on the lower slopes of Kinabalu in the National Park which has as a temporary boundary the 6000 feet altitude line. A short tour in Darvel Bay near Lahad Datu (November 15th-19th) during the British Borneo Interterritorial Forestry Conference showed the possibilities for exploring the forests in this area.

During this tour Mr B.Smythies, Mr J.A.R.Anderson from Sarawak, and Mr P.S.Ashton from Brunei were the guests of the North Borneo Forest Department. Mr Ashton stayed a week longer in Sandakan for studies in the Herbarium.

The Ecologist, Mr D.I.Nicholson, nearly completed his study of a five acre total enumeration plot in Sepilok Forest Reserve near Sandakan and started the lay-out of a virgin jungle plot near Mostyn Lahad Datu district on basic soil.

Botanical work in North Borneo is still concentrated on a revision of the Dipterocarps. The manuscript of the late Mr G.H.S.Wood is being enlarged and amended by the present Forest Botanist and has to be published during 1960. Wood's paper on 5 New Dipterocarps was offered after due revision to the Editor of Gardens Bulletin, Singapore.

Studies by the Forests Botanists of Brunei and North Borneo revealed that in both territories occur about 20 undescribed species of the genus Shorea, not to mention other genera of Dipterocarps.

An effort was made to sort out all the species of Eushorea (Selangan batu) in North Borneo which is still the most difficult and least known group.

As to non-Dipterocarps work is concentrated especially on less known groups like Anacardiaceae, Sapindaceae, and Fagaceae.

A popular paper on Palms of Indonesia was presented to the American Palm Society.

The programme for 1960 includes a tour to other British Borneo territories, to Singapore and Malaya for further studies on Dipterocarps in herbaria and in the field, a tour to the mountain Dipterocarp forests on the West Coast, a joined exploration with Mr J.A.R.Anderson of swamp forests in North Borneo and a visit of the interior along the Labuk and Kinabatangan rivers.

The collections of 1959, about 1000 numbers, will be distributed as soon as possible to various herbaria.--W.Meijer.

Need of nature preservation on Mt Kinabalu. The lower contour of the Nature Reserve on Kinabalu lies very high, at c. 6000 feet, and as the destruction of forest by shifting cultivation at the base of the mountain is taking place at an alarming speed, it seems necessary to include in this reserve at least large portions of montane forest and other vegetation. A very large deforestation of the base and spurs would have disastrous results in the future, by the increased erosion through the stripping of its vegetation cover from the bare granite.

We may add here that although the upper part is botanically probably fascinating by scenery and alpine plants, it is not the part which is particularly menaced; the botanically interesting peak plants live in cracks of bare rock already. However, the lower portions between 3000 and 6000 feet may appear to have even more significance botanically, as this montane forest appears to be an unexhausted source of endemic species, many of which are trees. Mrs Clemens has twenty five years ago botanized intensively at these altitudes and found a very large number of peculiar species, most of which have not yet been worked up. Every time we revise a family or genus, this montane Kinabalu forest yields new endemic species, even where we did not expect them, e.g. in Pittosporum, in Radermachera, in Turpinia, in Weinmannia, in Rhododendron, in Loranthaceae, etc.

It would be of high importance if the Forest Service in North Borneo could achieve to enlarge the nature reserve of Kinabalu, not only the loftiest, but also botanically the most interesting and richest mountain massive between the Himalayas and the Main Range of New Guinea. It is unique and there is nothing with which it can be compared.

Indonesian Borneo. From a letter by Prof.H o s o k a w a it was learned that he would make an exploration in Borneo from Aug.-Dec.1959.

M o l u c c a s.

In the second half of 1959 two young assistants in the Herbarium Bogoriense, Mr K u s w a t a and Mr S o e p a d m o, made a collecting tour to the island of Ambon.

P h i l i p p i n e s.

Dr E.Q u i s u m b i n g reported that "limited field trips had been undertaken during the year 1959, due to lack of funds. We hope to get additional funds for 1960.

I am preparing my manuscript - Plantae Vidalianae - and hope to release it to the press the coming year. Plants Collected by Llanos - manuscript, is also being prepared. It is a preliminary paper. More complete paper will be prepared later after I visit Geneva in 1962. I plan to go back to Europe in 1962, to study the plants collected by Née and Haenke of the Malaspina Expedition; Née's collection is in Madrid, and Haenke's in Prague. The third paper - New or Noteworthy Philippine Plants - will be prepared early in 1960."

N e t h e r l a n d s N e w G u i n e a.

Since 1957 important collections of forest trees were collected by the Forest Service: (1) Vogelkop Peninsula (Teminabuan, Ajamaru, Sidei plains, Kebar Valley, Warsamson Plain), (2) Biak I., (3) hinterland of Sarmi (for instance the Siduarsige Mts), (4) in the SE.part (Upper Digul and Muju area).

The Dutch Expedition to the Sterrengebergte (Star Mts), Central Range, near the Australian border, included 13 scientists for anthropology, geology, geography, zoology, and botany; work was done in the field from April till Sept.1959. The two botanists, Dr B.O.v a n Z a n t e n for Thallophyta and Bryopsida, and C.K a l k m a n for the higher plants, could actually do field work during c. 9 weeks and made collections in the lowland south of the Star Mts, round the Base Camp near Sibil (alt. 1250 m) and on the route to the summit of the Antares Range. The highest spot at which was collected was a locality on one of the lower peaks of Antares, at an altitude of c. 3400 m. About 1300 numbers (550 Phanerogams and 750 Cryptogams) were collected, for the major part with 8 duplicates. Most of the material has been received at the Rijksherbarium, Leyden, in Jan.1960, duplicates will be distributed as soon as possible. The start of actual field work was seriously delayed on account of difficulties in the sup-

ply; for that reason the botanical result did unfortunately not come up to the expectations

T e r r i t o r y o f P a p u a & N e w G u i n e a.

Mr J.W o m e r s l e y wrote, Dec.16, 1959, that apart from some local trips of short duration and a quick visit to Dutch New Guinea in Nov. he had been tied very much to the office. He has been able to make considerable progress though with the Botanic Garden and there does seem hope that the several storey new herbarium building is coming nearer.

Mr B r a n d i s spent a short time at Lae in connection with his preliminary investigations for the United Fruit Corporation Banana Collecting Expedition.

Dr R.D.H o o g l a n d, C.S.I.R.O., Canberra, worked in Lae, Papua, Oct.-Nov. 1959.

Dr Robert T h o r n e, University of Iowa, visited Papua in 1959, obviously by means of a National Science Foundation Grant.

Of C.S.I.R.O. Land Survey Section Mr R.P u l l e n made a collection of c. 590 numbers in the Prince Alexander Range and Lower Sepik area; Mr R.R o b b i n s collected a similar amount in the same area.

Collections of the 4th Archbold Expedition to New Guinea, 1953. Hitherto only duplicates of some special families have been sent to specialists working on these families. We have been informed that now the entire collection has been identified or pre-identified. A complete set was retained in Lae and this has been sorted and put away in families and is available for study. We hope that in the near future the other duplicates of this collections will be distributed.

Sixth Archbold Expedition to New Guinea.--The 6th Archbold Expedition to New Guinea of the American Museum of Natural History, sponsored by Richard Archbold, and financed in part by a grant from the National Science Foundation (USA), carried out approximately eight months of field work in the Territory of New Guinea between March 25 and December 15, 1959. Based at Lae and with forward bases at Goroka (5500 ft.) and Kainantu (5500 ft.), the expedition consisted of Leonard J. Brass, leader and botanist, Hobart M.Van Deusen, mammalogist, John D.Collins, transport man and field assistant, and six permanent native helpers. A special feature of the expedition was that a major portion of its transport could be done with a one-ton Land Rover and half-ton trailer on jeep-type roads which in recent years have been thrust far and wide on the highlands of eastern New Guinea in the very successful efforts of the Administration first to bring the area under effective control, then to initiate measures for the social and

and economic advancement of the native populations, and to foster settlement by limited numbers of Europeans.

In the first of four phases of operations, the party worked by road from Lae to the summit of Mt.Kaindi (8000 ft.), with collecting bases at Lae, Oomsis (350 ft.), Gurakor (2200 ft.) and Kaindi (6750 ft.), March 25-May 28. A second phase, June 6-August 1, was directed to 15,000-ft. Mt.Wilhelm, highest peak in eastern New Guinea, with transport by air and native carriers. Three weeks were spent at a camp beside an alpine lake at 11,800 ft., from which three ascents of the main peak of the mountain were made, and another five weeks at 9100 ft. A third phase, with major transport by the Land Rover and trailer, and some minor transport by native carriers at the higher altitudes, took in (a) Mt.Otto* (11,613 ft.) from Kotuni (7200 ft.) on the south slopes; (b) Gono (6400 ft.) on the west slopes of Mt.Michael, Kimi Creek Camp (6500 ft.) on the NE slopes, and two ascents of the mountain (c. 12,000 ft.) from Lufa, on the north slopes; (c) Purosa at 6400 ft. in the Okapa area; (d) Arau (4600 ft.) in the Kratke Mts., with an ascent of 8500-ft. Mt.Elandora, and (e) Kassam (4500 ft.), Kratke Mts., August 2-November 9. Finally, work was done at Water Rice (1500 ft.) and Umi River (1600 ft.) in the Upper Markham Valley, November 9-29.

In addition to its prime objectives in the collection and field study of mammals and plants, the expedition made substantial collections of amphibians and reptiles (Van Deusen), insects and spiders (Brass), the ectoparasites of mammals, and blood-slides of mammals (Van Deusen). Plants were collected in series of eight herbarium sheets when possible. The botanical collections totalled 3622 numbers including 324 of cellular cryptogams (principally bryophytes), 18,147 herbarium sheets of higher plants. One thousand and eleven of the botanical numbers were from altitudes of about 8300 ft. up to the 14,600-14,700 ft. altitudinal limit of vascular plants in Mt.Wilhelm. The expedition brought back what are believed to be the first biological collections from the summits of Mt. Otto* (August 12), Mt.Michael (August 31, September 6) and Mt.Elandora (October 18).

The United States National Herbarium has undertaken the processing of the plant collections and the distribution of duplicate specimens to selected herbaria. The zoological collections are deposited in the American Museum of Natural His-

* Lane-Poole, who on April 8, 1923, was the first European to climb Mt.Otto, collected plants which later were lost when his base camp in the Ramu Valley was raided and looted by natives. Cf. Report, For.Res.Terr.Papua & New Guinea (1925) 197-198.

tory. The ectoparasites were collected especially to advance the work of the Medical Research and Development Command, U.S.Army; the blood-slides for the Queensland Institute of Medical Research.--L.J.Brass, 4 March 1960.

Carr's Papuan collection.--The remainder of C.E.Carr's Papuan collection 1935-36, sets of which had not been distributed up to the time of the outbreak of the last War in 1939, was shipped from the Herbarium of the Botanic Gardens, Singapore, to the British Museum (Natural History), London, in 1954 and 1955. With this material, which amounted to nearly 2200 numbers (mostly the high numbers from 15800 to 16533, duplicates of which have since been distributed to the recipients of Carr's sets) were over 600 gatherings of orchids. Each gathering had its accompanying minute field ticket but was without a number. Comparison with Carr's numbered series of Papuan orchids (nos.10001 to 10684), the first set of which is in the British Museum herbarium, showed that this was a separate consignment, and from the dates of collection it would appear to comprise some of the last plants gathered in the field by Carr before his death in a Port Moresby hospital on 3rd June 1936. To facilitate future reference a series of numbers has been given in the British Museum to these hitherto unnumbered orchids and duplicate sets which will now be distributed will bear numbers between 16600 and 17232.

Material from the C.E.Carr Papua expedition 1935-36 is now located in the herbaria at the British Museum, Leyden, Singapore, New York, Manila, Canberra, Berlin, Kew, and a few numbers at Lae, Tucuman, Geneva and Arnold Arboretum.--E.W. Groves, British Museum (Natural History), 5 June 1959.