

V. EXPEDITIONS AND OTHER EXPLORATION
(contnd from p.719)

S o u t h S u m a t r a

Mr S u p a d m o, Bogor Herbarium, hopes to make a field trip to the Pakanbaru area in Central Sumatra in 1961.

M a l a y a

In Febr.1960 a party consisting of Mr J.W y a t t - S m i t h, Mr B.A.M i t c h e l l, and Mr W o n g Y e w K w a n, together with Prof.J.R.H e n d r i c k s o n, of the Zoology Department, University of Malaya, and Mr E.A l - f r e d, National Museum Singapore, formerly the Raffles Museum, made an exploration of Mt Tahan, on the Main Range of Malaya, its highest mountain (summit 7186 ft altitude).

W e s t J a v a

In 1960 Dr.A.J.G.H.K o s t e r m a n s led a field training course for botanists arranged and paid by Unesco through the Council of the Sciences, Djakarta, as had been suggested at the Bogor Symposium 1958. Originally it had been decided to hold the course in Sarawak under leadership of Mr J.A.R. Anderson. The course took place in SW.Java, the Udjongkulon Peninsula and Meeuwen I., exploring Mt Pajung (500 m alt.). Participants were Messrs Pricha Charunmayu (Siam), K.M.Kochummen (Malaya), Dr.Chew Wee Lek (Singapore), Guttierrez (Ma-

nila), four Indonesian students, and Mr Kuswata from Herbarium Bogoriense. Several rare trees were located, e.g. *Vatica bantamensis*, *Crudia bantamensis*, *Vavaea bantamensis*, *Dipterocarpus retusus*, *Beilschmiedea zeylanica*, etc. Oaks occurred at 300 m.

Lesser Sunda Islands

Bogor Expedition to West Sumbawa.--Dr. A. J. G. H. K o s t e r m a n s was leader of a 3 months' botanical expedition to western Sumbawa, which started on March 27th; participants were three students of the Biological Academy at Tjiawi, Messrs P r i j a n t o, S o e j a r t o, and W i r a w a n, and two technical assistants; guest was Mr J a u f f r e t, a French entomologist. Collections were made from April 8 to May 12 (numbers 18001 to 18796). On April 27 two Russian guests of the Indonesian Council for Sciences joined the expedition, Dr. A. F e d o r o v, Curator of the Leningrad herbarium, and Dr. K a b a n o w, of the Forestry Service. It is intended that the Leningrad herbarium will have a set of these collections in exchange against Chinese material. Dr. Kostermans communicated that the lowlands are dominated by, locally very varied, secondary forest. On Batulante the forest is intact from c. 700 m, with in the lower parts much *Albizzia chinensis*, higher up big *Heritiera gigantea*, still higher up *Podocarpus imbricatus* and *P. amarus*. Also many Sapotaceae, *Acer laurinum*, *Engelhardia*, *Neonauclea*, *Platea*, *Meliaceae*, and in the valleys *Duabanga*, *Michelia*, *Elaeocarpus*. Noteworthy is the scarcity of *Annonaceae*, and the absence of *Fagaceae* and *Beilschmiedia*. From the NW. side pure forest of *Dipterocarpus retusus* is reported, with big *Terminalia* and an unidentified leguminous genus. Dr. Kostermans was on May 21 back at Bogor; the rest of the party stayed on.

Sarawak and Brunei

Mr J. S i n c l a i r, Singapore, spent three weeks in Sarawak and two in Brunei, August-Sept. 1960, collecting 374 numbers; among them are many *Myristicaceae*.

The Collection Smythies, Wood & Ashton, made about April 1957, has often been cited to have been assembled in North Borneo. This collection was made, however, in Brunei.

Prof. and Mrs Ernst A b b e, of the University of Minnesota, visited Sarawak and Brunei and collected flowering and fruiting material of *Fagaceae*, spring 1960.

Exploration of the vegetation on the Limestone Hills.--Mr J. A. R. A n d e r s o n will concentrate his spare time on exploration of the limestone hills in which Sarawak abounds. In June he started on a six weeks' trip collecting in the Gunongs

Mulu and Api up the Baram River. G.Api is part of a 5000 ft limestone massif which has never been explored botanically.

Exploration of heath forest (padang vegetation) on sandy podsols.--Dr.E.F.W.O.B r u n i n g continued his studies of the heath forests of Sarawak and ascended the Merurong Plateau on two occasions in 1960. He closely investigated the "Padang" and high-level peat bogs on the plateau, where the vegetation is dominated by *Shorea albida*, *Dacrydium beccarii* var. *subelatum*, *Casuarina sumatrana*, and *Palaquiums*. Peat samples were collected for pollen analysis.

National Arboretum, Semengoh Forest Reserve, Sarawak.--In 1960 the enumeration and numbering of all trees exceeding 24" girth were completed: 3767 trees have been numbered, and preliminary identifications show the presence of 267 species, including 47 dipterocarps, 16 Burseraceae, 20 Lauraceae, 14 Sapotaceae, and 10 Moraceae. The Arboretum will form a basis for the investigation of the arboreal flora of lowland dipterocarp forest in Sarawak.

N o r t h B o r n e o

Dr.W.M e i j e r, Forest Botanist, made several field trips in the Kinabalu area where forest composition on ultrabasic rocks seems to differ essentially from that on acid rock. For 1961 he reported that a recollecting drive in the various Districts was organized with a number (5) of Forest Guards and Forest Rangers especially released for this work and instructed during a short training course near Sandakan. A booklet about Forest Botany in North Borneo was written for this course. Extra funds amounting to 20.000 Malayan Dollars were provided by the Government for the re-collecting drive during 1960. It is hoped that the damage of the fire can be restored by doubling the efforts of 1960 during about five years if the Colony continues to have a qualified Forest Botanist. Meanwhile the Botanical Section is taking a larger part in the Botanical Survey of the Labuk area where new roads will open forest-covered country for development. It is hoped that funds will become available to add a visiting Botanist to this work for 1-1½ year. The Forest Botanist followed during March the new trace for the road on his way back from Kinabalu summit to Sandakan covering 13.455 ft in altitude and at least 100 miles in distance. During May the lower Labuk area was visited. Especially the swamp forests and forests on ultrabasic provided new discoveries.

Dr.Meijer brought out a mimeographed report (1961, 40 pp.) of a tour from Sandakan to the SW up the Kinabatangan river and from the headwaters of this on foot to the NW to Keningau, from Nov.7 to Dec.12, 1960. Various explorations

were carried out on the way and 463 numbers were collected. About 80 of them were dipterocarps of which a list and remarks are given. Notes on vegetation on Lubuk Baya limestone hill and on various ultrabasic soils, on wild life, on local agriculture and problems of land use are given.

Programme of the Royal Society North Borneo Expedition 1961.--Purpose: The Expedition will explore the south-east and east part of Mt Kinabalu with two aims in view. Firstly the study of the forest life and of the soil variation at different altitudes in order to ascertain what parts it may be desirable to include in the proposed National Park. As this region is practically unexplored biologically, and the flora of the mountain is known to be extremely rich and varied, the botanical collections will certainly have great interest. The soil studies will follow closely the botanical because, in heavy forest, the plants are the obvious indications of soil change. However, as no intensive survey of soil variation with altitude has been made on the mountain, this will be the main project of the soil research. Secondly, as far as time may permit, the botanists and the soil scientist will make a preliminary investigation of methods and consequences of shifting cultivation on the mountainsides between 2,000 and 4,000 ft altitude, in order to formulate a definite programme for subsequent investigation.

Personnel: The main team will consist of five scientists: (1) Mr E.J.H.C o r n e r, F.R.S., University of Cambridge, England, as leader of the Expedition; (2) Prof.J.L.H a r r i s o n, Nanyang University, Singapore, as zoologist, June-July; (3) Mr G.P.A s k e w, Wye College, as soil scientist; (4) Dr.C h e w W e e L e k, Singapore Botanic Garden, as botanist; (5) Mr Adam S t a i n t o n, as botanist and assistant in the organization of the Expedition. It is hoped that Dr.W.M e i j e r, Forest Botanist, North Borneo, who has made a preliminary reconnaissance in the area to be explored, will participate in the Expedition, especially in its early stages. It is hoped that the following persons may be able to join the Expedition for short periods: (a) Mr B.E.S m y - t h i e s, Conservator of Forests, Sarawak, as ornithological authority; (b) Mr D.I.N i c h o l s o n, Forest Ecologist, North Borneo; (c) Mr C h i n P h u i K o n g, Assistant Fisheries Officer, North Borneo, who is engaged in writing the freshwater fish-fauna of North Borneo in conjunction with Dr.Robert F.Inger, Chicago Natural History Museum. Further, it is hoped that short visits may also be made by H.E. the Governor of North Borneo, and by the Directors of Agriculture, of Forestry and of the Geological Survey. As assistant personnel for collecting, it is expected that two Malay plant-collectors will come from the Singapore Botanic Garden,

and that Mr T. H a r r i s s o n (Sarawak Museum) may supply the services of his experienced Iban collector, G a u n, to assist in zoological work. Assistance with portage and tree-climbing will be obtained locally at Ranau village.

Itinerary: It is hoped that the Expedition will assemble in Singapore at the end of May and will reach Ranau at the beginning of June, where it will be based for a few days at the Resthouse. A base camp, consisting of a Uniport aluminium sheeted house (21 x 14 ft), and tents will be set up in the forest at an altitude of c. 3,700 ft about six miles north of Ranau. About this point the three main geological formations meet, namely the Ultrabasic, the Eocene sandstone, siltstone and mudstone, and the rock débris of the Pinosuk Plateau. June will be spent in local exploration with the idea of ascending the East shoulder of the mountain as far as possible in July, and traversing the Pinosuk Plateau in August. July will be spent in camping at sites along the East shoulder, with the possibility of reaching the summit. If time permits on the return, it may be possible to descend to the north of Kg. Poring. August will be spent in exploring the accumulation of rock débris forming the Pinosuk Plateau. In September, the party should ascend the normal western route from Kundasang to the summit, and during this month, if not in part of August also, the preliminary study of the shifting cultivation along the north side of the Ranau-Kundasang road should be begun. Most expedition members will have to return to their countries by the end of September, but it may be possible for one or two to stay on and visit the western end of the mountain.

Research: General collections of plants will be made, but special attention will be given to the full collections of flowering and fruiting material of the many ill-known trees and climbers. Properly fixed material will be collected for morphological, embryological, and cytological studies, to be made available to various botanical institutes in Europe, India, and the U.S.A. for research. Particular efforts will be made also to collect the larger fungi because the abundance of oaks in the Bornean forests implies a rich and partly mycorrhizal fungus flora. Field microscopes will be taken for use in the Uniport. Soil studies will relate mainly to the collection of soil samples for subsequent examination in the U.K. to the study of soil profiles, and to the relation between the soil and the vegetation. Zoological research will be devoted mainly to the collection of fish, reptiles, and amphibia and to any invertebrate group which the zoological personnel may be able to deal with.

Collections: Six to eight duplicates of dried plants will be ~~collected~~ and will be distributed to herbaria in the fol-

lowing order: Kew, Singapore, Sandakan, Leyden, Leningrad, Canberra, Washington, Bogor. However, it may be desirable in the first place to send the entire collections of some families to specialists, just as with the morphological material. Most identifications, however, will be obtainable through the herbaria of Kew, Leyden, Bogor and Singapore. The zoological collections will be handled through the British Museum. The soil samples will be studied by Dr. Askew in England.

P h i l i p p i n e s

Dr. E. Q u i s u m b i n g, on June 26, communicated the following information:

a) Batanes and Babuyanes Expedition.--Headed by Dr. E. Q u i s u m b i n g and assisted by two young botanists, Messrs R o m u a l d o d e l R o s a r i o and Hermes G u t i e r r e z, both of the National Museum. Collections were made on the following islands in Batanes Province, islands north of Luzon, from March 25-April 4, 1961: Batan Island, particularly on Mt Iraya; Sabtang Island; and Itbayat Island. Second trip was made to Calayan Island, Babuyanes Province, an island also north of Luzon. Due to lack of water transportation and bad weather, we were only able to concentrate on Calayan Island from May 2-10, 1961. We were unable to collect on the Islands of Babuyan, Camiguin, Dalupiri, and Fuga, all of Babuyanes Province, due to unavailability of Philippine Navy boats during the period. We plan to collect specimens on these four islands next summer. Of interest are Camiguin and Babuyan Islands as they are heavily forested. While waiting for transportation to Manila, we made two trips in the interior of San Vicente, Cagayan Province, Luzon, collecting in the cutting and logging areas of the Philippine Army Corps of Engineers. Another collecting trip was made to Batan Island from June 3-8, 1961, particularly around the summit and on the summit of Mt Iraya, especially on the Pacific side, and also on Mt Makatarem of Batan Island.

b) Mr H. G u t i e r r e z was with a zoological collecting party of the National Museum collecting botanical specimens on the west side of the Sierra Madre Mountains in Isabela Province from April 17 to May 28, 1961.

c) Within June Mr Gutierrez will leave for a 2-month botanical collecting trip in the Islands of Leyte and Samar.

d) Mr Demetrio R. M e n d o z a of the National Museum has been, since June 1, 1961, collecting botanical specimens in the cutting and logging areas of the Nasipit Lumber Company in Agusan Province, and has also made collections on the peaks of mountains in Agusan. Second set of specimens collected in these trips will be sent to Rijksherbarium, Leyden.

Mrs M.L.S t e i n e r, Manila, made an ascent of Mt Pulog, Luzon, Mountain Province, March 1961.

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

Airplane explorations:

The Forestry Service has regularly exploration work carried out by plane. The main purpose is to discover stands of Agathis and other timber, but valuable additional information is gained about geomorphology and vegetation, useful for future terrestrial work. Ir.J.F.U.Z i e c k wrote a number of internal mimeographed reports, in Dutch, with a map, many of them with photographs. We received reports concerning the following flights: On Nov.21, 1958 over Biak; on Nov.22 and 25 over the hinterland of Nabire (SE.corner of the Geelvinkbaai); on June 30, 1959, NE of Nabire; on Sept.10, 1959, from Japen to Pionierbivak on the Mamberamo plateau; on Nov.16, 1959, over Waris, Senggi, Oebroek, Sepik, about 150 km S of Hollandia; on July 6, 1960, over the Baliem valley (in the interior SW of Hollandia); on July 7 over Tanah Merah in the South.

Field explorations:

Ir.C.J.S t e f e l s led an exploration of the Berari and Komebwaller forest area on the SE.side of the Bombarai peninsula from July 9-28, 1956, and made collections there, according to an internal mimeographed report in Dutch.

Mr Chr.V e r s t e e g h conducted a trip to the Sekoli plain SW of Lake Sentani near Hollandia from Febr.8-22, 1960; 354 numbers were collected; typed report in Dutch.

Mr W.V i n k led a trip to the Sidoearsi Mts on the N. coast at long. $\pm 139^{\circ}$ and the plain to the North, from May 2 to July 2, 1959. Botanical collections were made, also spiders, snails, soil and rock samples were taken.

Ir.J.F.U.Z i e c k is the author of a number of mimeographed reports in the Dutch language in which the results of exploration work by the Forestry Service (Boswezen) are given, with many data, photographs, and maps, very valuable for future exploration.

We received reports on the following subjects:

Forest explorations and possibilities for timber exploitation near Manokwari, with special regard to the forests on limestone.

Cursory forest explorations in the region W of Hollandia, 1955-1959.

Exploration of a forest area near Sausapor on the NW.coast of the Vogelkop peninsula at long. $\pm 132^{\circ} 10'$ from Aug.10 to

Sept.7 1956; material was collected by Mr Chr.V e r - s t e e g h in the 2nd half of October.

Inventarisatation of a forest complex in the Warsamson valley near Sorong (Vogelkop peninsula), Febr. to March 1957; collections were made by Mr F.A.W.S c h r a m from Aug.7 to Sept.17, 1957.

A traverse through the eastern part of Biak by Mr C.N. v a n L a w i c k, July 1-2, 1959.

Exploration, first from the air, then from Nov.28 to Dec.5 1959 on the ground, of the Sjoega forest area round the eastern pocket of the MacCluer-Bay.

Exploration N of the Wissel Lakes from May 9 to June 1, 1960. After the party had been flown in by wateraircraft, Mr W.V i n k, c.s. went collecting about Enarotali from May 13-31, got 390 numbers; Ir.J.F.U.Z i e c k, c.s. went about in search for Agathis and other conifers which are plentiful in the montane forests. Eucalyptus deglupta was found for the first time in West New Guinea. Rainfall figures and temperatures are given; forest types are described; two maps.

During 1960 the Forest Service made collections in (1) Japen I., (2) Sekoli-plain near Hollandia, (3) Adi I., (4) Masni-plain near Manokwari, (5) Kebar-valley, (6) Argoeni (SW. New Guinea), (7) Wissellake-area.

Rijksherbarium Expedition to Netherlands New Guinea 1961. Dr.H.S l e u m e r, leader, and Dr.P.v a n R o y e n left Leyden on May 5, 1961 for Luzon, where they spent a week collecting in various places in the Mountain Province. After safe arrival in Hollandia their first objective is an exploration of the Cyclops Mts W of this place, especially the northern slopes; this is estimated at 3 months. The work will be continued in the North of the Vogelkop peninsula, where Dr.Sleumer will visit Mt Arfak to study Ericaceae and Epacridaceae in the field. The second major objective is the unknown Tamrau mountains, which reach up to 3300 m. The attack will be made from the Kebar valley, E of the Tamrau; this work is estimated at 4 months. We have had news that all is going well; a complete account of the tours will be found in the next Bulletin.

Dr.R.D.H o o g l a n d and his group are exploring the Aitape area onwards of the middle of May 1961, after which will follow a reconnaissance of the Torricelli Mts; the field work will be finished by August.