

V. EXPEDITIONS AND OTHER EXPLORATION  
(contd from p.890)

T h a i l a n d

The Kvae Noi River basin, WNW of Bangkok, close by the forested Bilauk Taung range along the frontier with Burma, has again attracted the attention of botanists. In 1926, Kerr collected c. 558 numbers; in 1946, Kostermans, Bloembergen & Den Hoed over 1200. From 1 November 1961 to 24 February 1962, an exploration in this area was made by Mr. K a i L a r s e n of Copenhagen and Mr. T e m S m i t i n a n d of Bangkok. They collected in various forest types, also on limestone and in swamp vegetations, about 2000 numbers. The material is at the Copenhagen Museum, the second set, after identification, will go to Bangkok; duplicates are available to the institutes where specialists assist in the identification and as exchange material.

In Mr. Larsen's brief account, Nat.Hist.Bull.Siam Soc. 20

(1962) 109-119 + map + 9 phot., we are pleased to read that the Erawan area, with its travertine formations and rich fern vegetation, is planned by the Royal Forest Department to be safeguarded as a national park.

Mr. R. M. King, a pupil of Dr. Lyman B. Smith at George Washington University, Washington, D.C., who is writing a thesis on the genus *Melampodium* (mainly cytogenetically) is making an expedition to Peninsular Siam in the last half of 1963; besides the *Compositae* he hopes to find, he will make a general collection.

From 25 August to 15 September 1963, another UNESCO Field Training Expedition (see under Malaya) is organized under leadership of Dr. H. S l e u m e r of the Rijksherbarium. There will be about 10 participants; they will operate in Surat, far South in the Peninsula, and give special attention to the flora of limestone hills.

### S u m a t r a

Miss C h a n g K i a w L a n, from June to August 1962, made collections of algae, fungi, sulphur spring vegetation, and phanerogams in general at Pulau We, P. Bras, Atjeh West Coast, and Berastagi, for the Singapore Botanic Gardens.

### M a l a y a

Dr. W. M e i j e r of North Borneo travelled in Malaya, together with Mr. K. M. K o c h u m m e n, assistant forest botanist at Kepong. They visited forest areas from eastern Johore (27 May 1962) to Kuala Trengganu (5 June), going from there southwards and then to Kepong (6 June). The material, including several palms, was numbered in the KEP-series, and is in the Kepong Herbarium, from where some duplicates will be distributed.

Third UNESCO botanical training expedition.--As the third in a series to provide to research workers in botany practical training in field work in humid tropics vegetation, an expedition was organized by the UNESCO Southeast Asia Cooperation Office (SEASCO) in Ulu Kelantan, Malaya, from 24 July to 17 August 1962, thanks to the cooperation of the Ministries of Education of Singapore and the Federation of Malaya and the University of Singapore.

The specimens collected during the expedition were identified with the help of and at the herbarium of the Singapore Botanic Gardens from 18 August to 5 September 1962.

Sixteen Trainees from Hong Kong, Indonesia, Malaya, Philippines, Singapore, and Thailand participated in the expedition, which was led by Dr. H s u a n K e n g, of the Botany Department of the University of Singapore.

The expedition camped along Sungei Nenggiri, about 20 miles southwest of Bertam, in its first stage and along Sungei Ketil, one mile south of Gua Musang Town in its second stage, and along the same stream in the third stage, but near Gua Panjong.

In the first two stages, the expedition collected a large amount of living and dried herbarium specimens from almost all the limestone hills adjacent to the camping areas. During the third stage, the expedition, due to bad weather, collected specimens only from a few low peaks. In all, 790 kinds of dried herbarium specimens and over 400 kinds of living specimens were collected. It is expected that identified specimens will be distributed later to Kew, Leyden, and Bogor. About 10% of the specimens collected is, at first sight, new to the records of the limestone flora in Malaya.

We heard special words of praise for Mr. K u s w a t a and Mr. S o e p a d m o, both of the Herbarium Bogoriense, who contributed much to the success of the expedition.

Mr. H. M. B u r k i l l, director of the Singapore Gardens, communicated that the following plant collecting had been done in 1962: in Kelantan, H. C. L a m, 24 July to 18 August, UNESCO Limestone expedition; in Perak, R. K. D e n - t a n, anthropologist, N.Y.; currently, ethnobotanical collections; in Pahang, K a d i m b i n T a s s i m, assistant of the former, 8-20 February, the same, also from 6 to 28 April, general collections; in Pahang, Dr. C h e w W e e L e k with M. D. P o o r e and F. M e r t o n, general collections; in Selangor, J. S i n c l a i r, 12 to 20 November, Myristicaceae. Besides, collections of marine algae were made by Mr. Burkill himself; near Malacca, Singapore, and Java, and in various places plants were gathered for cultivation in the Gardens.

A full scale forest resources reconnaissance survey using aerial photographs followed by ground checks is in progress at the Forest Research Institute at Kepong. The province of Pahang, now under survey, should be completed before the end of this year. Valuable ecological data on forest types, etc., should arise out of the work.

### B o r n e o

Sarawak. -- Dr. J. A. R. A n d e r s o n led a six weeks botanical expedition to Gunong Mulu, Sarawak's second highest mountain and to the adjoining limestone massif of G. Api and Benarat. Three camps were established at different altitudes on Mulu. After the ascent to the summit, the steep-sided North ridge running down to the Melinau gorge was traversed for the first time. Here a base camp was established for collecting on the limestone mountains. The jagged rocks of G. Api

(probably the highest limestone in Borneo) were scaled to over 1300 m. The vegetation at this altitude is of exceptional interest, being composed of acid tolerant plants growing on a web of roots and humus between limestone pinnacles. The principal dominants are *Dacrydium beccarii*, *Casuarina rumphiana*, and *Myrica* sp. As there have been no previous collections from Mulu and very few from the limestone mountains, it is expected that the results of this expedition will prove to be of exceptional scientific interest.

Further botanical expeditions were made as follows. March: Ass.For.Res.Off. to the Belai Ringin and Sabal forest reserve. April: Herb.Ass. to Gunong Gading and Pueh. May: For.Ranger research to Santubong. June: Forester Dan bin Hj. Bakar to Lambir hills forest reserve. August: For.Res.Off. to Bukit Raya, Kapit distr. October: the same to Gunong Gading and Bukit Gebong. November: Herb.Ass. to coastal hill forests in Bintulu distr. Cons.For. to G.Pueh.

Botanical collections were also made in the arboretum, on Kinabalu, and near Kuching.

Mr. D. N i c o l s o n visited Sarawak for 10 days in August 1961, and collected 150 numbers, largely aroids.

A widespread flowering of dipterocarps followed the dry season in July and August 1961; special attention to the family was paid during expedition and in the arboretum; a total of 230 numbers was collected.

Dr. W. M e i j e r visited Kuching for two weeks. Short field trips were made to the arboretum and Bako National Park.

Dr. E. F. W. O. B r u n i g continued his work on the ecology of Kerangas forests; sample plots were laid out in the Bintulu district. He finished a paper on the Kerangas forests of the Sungei Dalam block of the Lambir hills forest reserve, at the end of 1961. -- All from the Annual Report of the Forest Research Officer 1961.

Second UNESCO-botanical training expedition.---A one month's training expedition in humid tropics vegetation, sponsored by the government of Sarawak with the cooperation of the Unesco Science Cooperation Office for Southeast Asia, was held in Sarawak from October 4 to November 2, 1961. The leader of the expedition was Dr. J. A. R. A n d e r s o n, Forest Research Officer of Sarawak. Trainees from Indonesia, Singapore, Thailand, and the Philippines took part in the expedition. The program included botanical collecting on Mounts Gading and Pueh, the laying out of ecological plots in a shifting cultivation area, examination of peat swamp forest, a visit to Bako National Park, examination of the Kerangas forests, a visit to the Bau limestone hills, visits to Forest Department Headquarters and to the Herbarium, and visits to the Arboretum and Engkabang plantations. -- From Pac.Sci.Ass.Inform. Bull. 14 (1961) 1-2.

Mr. A. G. A l p h o n s o, from 30 May to 22 June 1962, collected plants for cultivation in the Singapore Botanic Garden, at Niah, Undup river, and Batu Lintang.

Dr. P. S. A s h t o n left Kuching on 18 April 1963 to repeat O. B e c c a r i ' s classic journey up the Bintulu river and the Tubau river, over the watershed to the Belaga river, and thence down the Rejang river back to Kapit, 96 years after his illustrious predecessor.

Another subject of common interest will be formed by palms and specially rattans, to which Dr. Ashton is paying attention after having been neglected since Beccari's time.

Dr. Z a h l, on the staff of the National Geographic Society of America, is currently on a visit to SE. Asia on an assignment to collect photographs and data on Nepenthes; after spending time in Malaya and on Mt Kinabalu he arrived at Kuching on 18 March 1963 and was taken on a tour of the species growing in Bako National Park, on G. Santubong, and on the limestone cliffs near Bau, personally conducted by the Conservator of Forests, Mr. B.E. Smythies, who has been studying these plants for some time.

North Borneo. -- The re-collecting drive after the fire in the Sandakan Herbarium (see p.812, 893), was vigorously continued during 1962 by about 50 foresters altogether in all districts. The result was a total of 4617 collections, including 309 dipterocarps. New lowland localities were visited (about 70 % of North Borneo being botanically almost unknown) including Kretam, Semporna, and Klias Peninsula.

The Forest Botanist, Dr. W. M e i j e r, did fieldwork on Mt Andrassy and near Quoin Hill, Tawau. During February he joined an American expedition to Kinabalu. In Beaufort District an attempt was made to collect more information about the flora on Mt Trusmadi.

In various groups it appeared that about one third of the species known from North Borneo have been re-collected in 1960-1962.

The Royal Society Expedition to North Borneo 1961. Under this title, Mr. E. J. H. C o r n e r, F.R.S., leader, published an extensive account in the Empire Forestry Review (1962) 224-233 (see also this Bulletin, p.804-806).

The aims of the expedition were, 1) to ascend the eastern ridge, 2) to traverse the Pinosuk Plateau, 3) to consider the altitudinal limit of the National Park on the East and South sides, 4) to begin an investigation of regeneration of soil and forest under shifting cultivation. The ascent on the eastern ridge was performed until precipices not far below the summit area prevented further progress. The traverse across the Pinosuk Plateau of 14-15 miles took nearly three

weeks, due to steep declivities and immense thickets of climbing bamboo, rattan, and thorny palms. The Plateau appeared the great animal sanctuary of the mountain. Highlights of the expedition were the discovery of the two-horned Sumatran rhinoceros, and a new genus of the Fagaceae, *Trigonobalanus Forman*, with whorled leaves. Rich collections have been made in many groups of plants and animals. "We have fresh evidence that its biological resources have by no means been exhausted, and there is the possibility of establishing a national park with adequate boundaries to the satisfaction of the people and their students of the future before it is too late."

### New Guinea

Western part. -- Boswezen (= BW, or Forestry Service) collections were made during 1960 in the Arfak Mts (Mt Krabo), during 1961 in the Arfak Mts (Mt Beribai), the Baliem valley, central highlands, Biak Island, Mapia Atoll, Warsamson valley near Sorong, Kebar valley, Japen Island, Adi Island, Warmare valley SW of Manokwari. During 1962 in the Arfak Mts (central part and around Anggi Lakes), Fak-fak hinterlands, Lake Ajamaroe, Wondiwoi Mts, Wandammen peninsula, Meos Noem Island, Warmare valley, Sjoega-Wagoera, Bomberai. At the end of 1962 the whole collection amounted to 17,000 numbers, of which 14,000 in the BW-series.

It is hoped that an expedition to an unknown limestone mountain complex near the Arfak in western New Guinea and sponsored by the Herbarium Bogoriense, can be made in 1963.

Numbers collected on the second Rijksherbarium New Guinea Expedition. As Dr. Sleumer's name occurs in 3 different number series, an explanation is here given as an appendix to the Itinerary published in the 1962 Bulletin on p.887-890. The bulk of the collection was labelled under the names VAN ROYEN & SLEUMER; these numbers run from 5625 to 8259, as a continuation of Dr. Van Royen's own series. The numbers 6608-6671 bear the name VAN ROYEN alone, since they were collected during the latter's trip to Manus I., New Ireland, and New Britain. In Dr. Sleumer's own series were collected the numbers SLEUMER 4125-4190, during the collector's trip to eastern New Guinea. During Dr. Sleumer and Mr Vink's trip in the Arfak Mts, two different series were collected, notably SLEUMER & VINK 4191-4490, as a continuation of Dr. Sleumer's own series, and BW 14001-14359 SLEUMER & VINK, as a continuation of the BW-series. On a second trip to the Arfak, alone, Dr. Sleumer collected again in his own series, SLEUMER 4491-4507.

Eastern part. -- From 19 to 29 September 1962 the Division of Botany, Lae, made a collecting trip in the area of Kegl-

sugl, Lake Piunde and Lake Aunde, culminating in the climb of Mt Wilhelm. Participants were Mr. J. W o m e r s l e y, Dr. P. v a n R o y e n, Mrs. A. M i l l a r, Mrs. D. M. O s - b o r n, and Prof. F. W. W e n t.

Saruwaket Explorations. Next year two large British and American expeditions (see below) will be operating in the Saruwaket area, and local preparations are well under way. From 9 to 12 January 1963 Dr. P. v a n R o y e n and Mrs. A. M i l l a r made a trip to Umi River. On 18 February the former made a flight over Mt Bangeta, Mt Saruwaket, Lake Gwam, Mt Kornboli, and Mt Enggom, returning by way of Mt Kathleen, N of the Saruwaket.

Accompanied by Mr. & Mrs. A. M i l l a r and Prof. S. C a r l q u i s t, Dr. P. v a n R o y e n made from 20 February to 3 March a trip to the Rawlinson Range and to the Saruwaket Range west of the main ridges at 11,500 ft. The party went from Lae eastward, crossed the Busu River S of the mouth of the Bumsi River, then to Gawan through mixed lowland vegetation. They ascended along the crest N of the Mewampi valley to Sambui at 4500 ft, then through oak forest to Zitari at 5200 ft. Now they crossed four deep gulleys, descending to the Mewampi River, followed it for a while before making the steep ascent to a plateau which began at 6000 ft and rose to 11,500 ft, from 7000 ft through poor Quercus-Elmerrillia forest, above 8500 ft through Elaeocarpus-conifer forest. At 10,000 ft the first alpine grasslands were encountered. The carriers mistakenly led the party to Mt Enggom at 12,500 ft, never botanized before, where the main exploration was carried out.

Mt Piora Patrol. Mr. E. H e n t y of Lae, and Dr. S. C a r l q u i s t of Claremont, California, accompanied a topographer's party in this restricted area to the summit of Mt Piora, 3719 m, W of Lae, from 9 to 13 March 1963. Start from Wonenara patrol post, following Guiaga River, ascending in two days, 15½ hours, to 3100 m. Good camp sites were found at 2400 m (two, half an hour apart), and on the plateau (near any selected part). The plateau is 3 sq. miles in area, covered with pyrogene grassland, and rests of forest. Most of the plants were found in flower; 140 were collected. Descent was made in two days, via Butnari (12½ hours) with much cuttings through moss forest and bamboo, back to Wonenara (2 hours).

A new Archbold Expedition is planned to work in 1964 on Mt Saruwaged; Dr. L. J. B r a s s will not join it, instead Dr. R. D. H o o g l a n d will be responsible for the botanical collecting.

The British Museum (Nat.Hist.) hopes to send out an expedition to the Territory of New Guinea to be in the field for 6-9 months in 1963/64. The area to be worked is the Finisterre and Saruwaged Ranges. There will be three botanists on this expedition and particular effort will be made to collect cryptogams, especially ferns, and it is hoped that much living material will be brought back for cultivation and subsequent cytological investigation. Of course it is intended to collect phanerogams also, especially those specially required by research workers and monographers.

Prof. H. B. G i l l i l a n d of Singapore collected in September 1960 a number of mosses in eastern New Guinea, at Chimbu and the Daulo Pass (c. 1800-2500 m). The collection went to the Singapore University Herbarium; see Anne Johnson, Gard.Bull.Sing. 19 (1962) 373-374 and 375-377.

Messrs. D a r b y s h i r e, P u l l e n, and S c h o d d e will be collecting in the coastal area near Port Moresby from Rigo to Iokea. It was hoped that Mr. Schodde will spend some time at Sogeri as well.

#### P a c i f i c

Dr. Ch. H. L a m o u r e u x visited the Leeward Islands in 1961 and Midway Atoll in December 1962.

Dr. H. S. M c K e e made a collection of plants in New Caledonia December 1962-February 1963.

Solomons. -- Mr. J. S. W o m e r s l e y of Lae went to Honiara to help Dr. T. C. W h i t m o r e build up the Herbarium, from 30 October to 28 November 1962. Trips were made from Honiara to Gold Ridge and Situ village at the foot of Mt Popomanasia, also the Tima-Toni river about 15 miles from Honiara. The party also spent a week on Kolombangara I. Mr. M. G a l o r e of the staff of the Division accompanied him.

Dr. T. C. W h i t m o r e made an exploration into the mountains of Guadalcanal, Solomon Islands.