

and Lower Ring roads round the Hill. In Murton's reports of 1877 and 1878 it is recorded that a fern rockery was started under some trees in this position, but their death and collapse in 1877, owing to the smothering of creepers which grew over them, caused the site to become too open for ferns. The present rockery on the north-west of the Bandstand Hill was established later by Cantley, beyond the Lower Ring Road. Two other photographs (not here published) show the creeper-covered trees in closer view, and enable their position to be located fairly accurately. The creeper which smothered them was probably *Thunbergia laurifolia*, which still continually causes much trouble. It occurs in many parts of the Gardens and has frequently to be cut back, to prevent further disasters like that which spoiled Murton's rockery.

Another photograph in the collection shows the road through the Gardens Jungle (now called Liane Road); the jungle adjacent to the road was not so well grown as now, and the road much more open. Another shows a view down Maranta Avenue, and indicates that the palm valley and its slopes, below the Director's house, had not then been planted with the palms which are now there.

Other pictures in the southern part of the Gardens show equally great changes. The island in the lake was covered by spreading trees (of which the largest was probably a Waringin) instead of the graceful clump of nibong palms and fine pandans which now adorn it. The avenue of sealing wax palms (*Cyrtostachys lakka*) on the south side of the Bandstand Hill had not been planted, and a view southwards from the site of that avenue shows the monkey house (then newly erected) in its original position near the present herbarium, and beyond it on the horizon the buildings of Tanglin Barracks, not then hidden by all the trees which have since grown up. It is hoped to publish others of these photographs in later issues of the Bulletin. Further details concerning the history of parts of the Gardens here mentioned are recorded in the papers published by Mr. Burkill in Volume II of the Bulletin, pp. 55-72 and 93-108.

R. E. HOLTUM.

## Additions to the Flora of the Malay Peninsula

BY M. R. HENDERSON, F.L.S.

### ANONACEAE.

#### *Goniothalamus rotundisepalus*, sp. nov.

Frutex 1-2 m. altus. Ramuli glabri, partes juniores ferrugineo-pubescentes. Folia glabra, 14-23 cm. longa, 4.5-8.5 cm. lata, oblonga vel elliptico-oblonga, acuminata, base acuta, nervis utrinque



7-9, supra obscuris, subter tenuibus sed distinctis. Flores axilarii, solitarii, 2.5 cm. longi; sepala rotunda, glabra vel extus sparse ferrugineo-pubescentia, intus glabra; petala exteriora late lanceolato-acuta, 2.5 cm. longa, circa 1 cm. lata, interiora ovata 1.2 cm. longa, 7 mm. lata. Carpella rubro-pubescentia, anguste oblonga, stigmate 2-lobato.

A shrub 1-2 metres high. Branchlets glabrous, dark-coloured, the youngest twigs and buds and very young leaves with a short red pubescence.

Leaves glabrous, 14-23 cms. long, 4.5-8.5 cms. broad, oblong or elliptic oblong, acuminate, narrowed to the base. Nerves 7-9 pairs, faint above, thin but distinct below, interarching far from the leaf margin. Reticulations indistinct.

Flowers solitary, axillary, pale-green, 2.5 cms. long. Bracts 4, ovate-acute, red-pubescent, 2-3 mms. long. Pedicels 4-5 mms. long, slender, with a few red hairs. Sepals orbicular or rotund, glabrous or with sparse red pubescence outside, glabrous inside. Petals leathery, drying black, the outer with a scattered red pubescence on both sides, broadly lanceolate-acute, narrowed to the truncate base, 2.5 cms. long, about 1 cm. broad; the inner ovate, red-pubescent on the outside like the outer petals, but with a denser brownish mealy pubescence inside, which is more pronounced at the cohering edges, and is almost absent at the base, 1.2 cms. long, 7 mms. broad. Stamens numerous, the appendages orbicular, pubescent. Ovaries linear-oblong, red-hairy, style rather stout, with two thick stigmas. Fruit unknown.

Sungai Renong, Kelantan, Md. Nur (with Dr. Foxworthy) 12157, February 1924.

***Drepananthus pahangensis*, sp. nov.**

Arbor circa 3 m. alta. Folia elliptica vel elliptico-oblonga, base inaequilateralia, rotundata vel leviter cordata, acuminata, 17-29 cm. longa, 7-12 cm. lata, nervis utrinque 12-15. Sepala triangulo-acuta, 7 mm. longa et lata. Petala exteriora oblonga, 1.7 cm. longa, 7 mm. lata, interiora conniventia, 1.3 cm. longa. Carpella supra glabra, subter sericeo-pubescentia.

A tree about 3 metres tall. Young branches terete, red-pubescent, lenticellate. Leaves elliptic or elliptic-oblong, broadest near the apex, base inequilateral, rounded or slightly cordate, apex acute, dark brown (when dry) and glabrous above except for the nerves, brown below; 17-29 cms. long, 7-12 cms. broad. Nerves 12-15 pairs, fine on the upper surface and red tomentose like the sunk midrib, prominent below and interarching, sparsely pubescent. Reticulations faint above, prominent and regular below, pubescent like the nerves.



Flowers yellow, one or two on a short woody tubercle. Peduncle stout, up to 2 cms. long (but usually shorter), with ovate-acute bracts up to 5 mms. long, the peduncle and bracts red-hairy. Sepals and petals leathery, pustulose, with a sparse reddish pubescence. Sepals triangular acute, base broad, edges thickened, 7 mms. long and broad. Outer petals oblong, narrowed to the rounded tip, slightly constricted above the claw and arching over the base of the inner petals, but not connivent, the claw glabrous inside, the arch with a yellowish mealy pubescence, edges of limb incurved, 1.7 cms. long, 7 mms. broad. Inner petals connivent similar in shape to the outer, but smaller, strongly constricted above the claw, keeled on the back, 1.3 cms. long. Stamen appendages glabrous, hexagonal. Ovaries glabrous above, silky pubescent below with long yellowish hairs. Fruit unknown.

Pahang: Kuantan, Burn-Murdoch, May 1924; Baloh Forest Reserve, Forest Department 830, March 1919, and 3141, March 1920; Pulau Manis, Forest Department 824, September 1919.

Johore: Gunong Panti, altitude 1000 feet, R. E. Holtum, April 1925. Malay name "Antoi."

### BALSAMINACEAE.

#### *Impatiens Foxworthyi*, sp. nov.

Herba reptans succulenta, 20-30 cm. alta, glabra. Folia petiolis ad 9.5 cm. longis, 6.5-8 cm. longa, 4.5-6 cm. lata, ovata, mucronata, margine denticulata. Inflorescentiae ad 20 cm. longae, pedicellis bracteatis. Sepala latiora ovato-rotundata, 5 mm. longa, 4-5 mm. lata, interiora parva, linearia, 4 mm. longa. Labelli limbus amplius, calcar robustum, incurvatum; vexillum ovatum, 8 mm. longum. apice mucronato; alae 1 cm. longae, sessiles, bilobae. Filamenta breviora; antherae oblongae.

A creeping and ascending succulent herb, 20-30 cms. high, glabrous. Leaves 6.5-8 cms. long, 4.5-6 cms. broad, crowded towards the top of the stem, ovate, thin, the margin with small spinulose teeth, the apex mucronate, the base narrowed and decurrent on the petiole. Petioles variable in length from 1.5 to 9.5 cms.

Inflorescences axillary or subterminal, peduncles glabrous, succulent, branched once, up to 20 cms. long. Flowers crowded towards the ends of the branches, the fallen ones leaving prominent scars. Bracts similar to the sepals, but slightly smaller, conspicuous and persistent. Pedicels slender, up to 1 cm. long.

Flowers yellow. Sepals 5, the laterals 5 mms. long, 4.5 mms. broad, ovate-rotund, oblique, slightly keeled, notched at the top with a thick blunt mucro in the notch; the inners narrow, linear, broadened at the base, 4 mms. long; the posterior sepal large, 1.5



cms. long and about 1 cm. across the mouth, the limb triangular with a short thick blunt point at the mouth, the spur stout, incurved, about as long as the limb. Petals: the vexillum ovate, 8 mms. long and 4 mms. broad, the keel prominent at the base and produced at the notched tip into a triangular point; the wings 1 cm. long and 8 mms. broad, sessile, two-lobed, the lobes rounded and nearly equal, the dorsal spur prominent, slightly down-curved. Stamens cohering, filaments short, anthers oblong. Fruit unknown.

On limestone rocks at Gua Kechapi on the Pahang-Kelantan boundary, Md. Nur (with Dr. Foxworthy) 11912, February, 1924.

### OLACACEAE.

*Phytocrene trichura*, Ridl., *Flor. Malay Pen.*, Vol. II., p. 433.

This plant was first collected by Mr. Ridley in the Ulu Batang Padang, Perak, in 1909, and was not again obtained until June 1923 at Lubok Tamang, Pahang, on the Bertam River. Mr. Ridley could not procure leaves, owing to the height to which the plant climbed, and described it from inflorescences only. The following is a short description of the leaves:—

Stem longitudinally wrinkled, red hairy. Leaves ovate cordate, deeply three-lobed, the lobes acuminate, the terminal lobe long and broad. Upper surface rough with greenish pubescence on the main nerves and sparse reddish hairs on the faint raised reticulations; nerves and reticulations below with bristly reddish hairs. Nerves three from the base, the main nerves and reticulations elevate and bold beneath; 12-15 cms. long, 10-11 cms. broad. Petiole roughly hairy, 4.5-5 cms. long.

Lubok Tamang, Pahang, altitude 3500 feet, June 1923. Coll: M. R. Henderson, F. M. S. Museums No. 10928.

### SCROPHULARIACEAE.

*Herpestis floribunda*, R. Br. *Bacopa floribunda*, Wettst.

Not previously recorded from the Malay Peninsula. Collected in padi-fields at Padang Lerang, Kuala Trengganu, by R. E. Holtum, no. 17353, May 1925.

Distribution:—India to Australia.

### ASCLEPIADACEAE.

*Dischidia Fultonii*, sp. nov.

Herba epiphytica. Folia carnulosa, exsiccata coriacea, ovata vel ovato-lanceolata, acuta, glabra, 1.5-1.9 cm. longa, 7 mm. 1.2



cm. lata, nervis obscuris. Pedicelli ad 1.5 mm. longi, crassi. Sepala membranacea, ovata, obtusa, 1 mm. longa, squamis minutissimis. Corolla alba, lobis rubicundis; tubus urceolus, 4 mm. longus. Coronae lobi erecti, membranacei, lobis recurvatis, acutis. Folliculi 5 cm. longi, glabri.

A slender trailing or pendent epiphyte. Stems slender, pale below and minutely papillose, dark brown above, longitudinally wrinkled when dry. Leaves fleshy, coriaceous when dry, ovate or ovate-lanceolate, acute, glabrous, edges not recurved, both surfaces irregularly wrinkled when dry, 1.5-1.9 cms. long, 7 mms.—1.2 cms. broad. Nerves quite invisible. Petiole stout, 4 mms. long.

Umbels about 5-flowered on thick tubercled and bracteate rachises which are either supported on peduncles 2.5-3.5 cms. long, minutely papillose and longitudinally wrinkled like the stem, or are sessile in the leaf axils. Pedicels stout, up to 1.5 mms. long. Calyx lobes membranous, ovate obtuse, 1 mm. long. Scales very minute. Corolla white tipped with pink, tube urceolate, 4 mms. long, globose below, contracted at the mouth, glabrous except for the inside of the lobes, which are densely hairy. Corona erect, large, the lobes membranous, broadly anchor shaped, the recurved arms of the lobes long, acute.

Follicle 5 cms. long, glabrous, linear acuminate, slightly curved.

Johore: Gunong Belumut, altitude 3900 feet, R. E. Holttum 10727, May 1923.

## GESNERACEAE.

### ***Didymocarpus lancifolia*, sp. nov.**

Herba 10-13 cm. alta. Folia petiolis 5 mm. longis, lanceolata, 2.8-3 cm. longa, 8 mm.-1 cm. lata, supra sparse pilosa, subter nervis densissime pilosis. Pedunculi 1-floriferi, 2.6 cm. longi, rufi, pubescentes. Sepala linearia, lanceolata, pilosa, 2.5 mm. longa. Corolla alba; tubus cylindricus, superne dilatatus, 2 cm. longus; lobi rotundati. Stamina 2, filamenta 5 mm. longa. Ovarium cum stylo et stigmatibus pubescens.

A creeping and ascending herb, stem woody, hispid, 10-13 cms. tall. Lower part of the stem leafless, the leaves crowded towards the top. Leaves lanceolate, 2.8-3 cms. long, 8 mms.-1 cm. broad, narrowed to the apex and base, the upper surface sparsely covered with long soft hairs, becoming more dense on the edge, the lower surface densely hairy on the nerves. Nerves 4-6 pairs distinct below. Petioles hispid, 5 mms. long.

Peduncle one-flowered, 2.6 cms. long, red-coloured, pubescent; pedicel 6 mms. long. Calyx lobes 5, linear lanceolate, hairy, 2.5 mms. long. Corolla narrow, cylindric, dilated at the top, 2 cms.



long, slightly pubescent outside, lobes rounded; white, with two brown lines on the lower lip and a tinge of mauve round them. Stamens inserted one-third of the way down the corolla tube, filaments 5 mms. long, rather thick. No trace of staminodes. Disc conspicuous, one-sided, slightly lobed. Ovary, style and stigma all pubescent, the style reaching to the anthers, the stigma large, capitate. Fruit unknown.

Pahang: Gorge of the Sungai Tras near Raub, altitude 500 feet, I. H. Burkill and Md. Haniff 16946, November 1924.

***Loxocarpus papillosa*, sp. nov.**

Folia petiolis 1 cm. longis, obovata vel obcuneata, 6-11 cm. longa, 2.5-4 cm. lata, apice et base rotundata, nervis utrinque 10-12. Pedunculi 1-floriferi, 3.5-6.5 cm. longi. Sepala lineari-oblonga, pubescentia. Corolla coerulea, 5 mm. longa, leviter pubescens; tubus campanulatus, lobis oblongis, rotundatis. Stamina 2, filamenta breviter et crassa; antherae rotundatae, conniventes. Ovarium cum stylo pubescens. Capsula 7-9 mm. longa.

A stemless herb with the leaves in a rosette. Leaves obovate or obcuneate, apex rounded, base rounded and sometimes inequilateral, 6-11 cms. long, 2.5-4 cms. broad, the midrib, nerves and occasionally the intervening spaces on the upper surface with long hairs, which form a more or less uniform covering on the lower surface and on the margin. Nerves 10-12 pairs, thin but distinct on the lower surface, regular and parallel. Petiole densely hairy, 1 cm. long.

Scapes slender, reddish, pubescent, pale and glabrous when older, 3.5-6.5 cms. long, one-flowered. Sepals linear oblong, pubescent. Corolla pale blue, 5 mms. long, slightly pubescent, the tube wide, campanulate, lobes oblong, rounded, rather deep. Stamen filaments short, thick, the anthers round, peltate, connivent. No staminodes. Ovary and style pubescent, the style as long as the corolla tube, Stigma small, capitate. Capsule 7-9 mms. long, red pubescent, narrowly conic, straight, splitting along the upper edge, the style persistent. Seeds narrowly elliptic, reticulate.

Negri Sembilan: North side of Gunong Angsi, altitude 2600 feet, Md. Nur 11632, November 1923. Gunong Angsi, altitude about 2000 feet, R. E. Holttum 9923, December 1922.

***Paraboea Holttumi*, sp. nov.**

Herba erecta. Folia petiolis 1.5-3 cm. longis, 8-11 cm. longa, 1.5-2 cm. lata, lanceolata, nervis obscuris. Pedunculi circa 5.5 cm. longi; bractae angustae, 3 mm. longae. Calycis sepala lineari-lanceolata, hispida, 3.5 mm. longa. Corolla campanulata, circa 1.2



cm. longa, extus pubescens. Filamenta crassa; antherae magnae, triangulae, conniventes. Ovarium cum stylo ferrugineo-pilosum; stigma capitatum.

A herb with a stiff habit, about a foot tall. Stems woody, terete and glabrous below, above 4-angled and channelled. Leaves 8-11 cms. long, 1.5-2 cms. broad, in distant pairs, lanceolate, narrowed to both ends, texture thick, nerves invisible; the upper surface minutely papillose with scattered white multicellular hairs, more numerous on the young leaves and towards the margin, where they form a regular row; the lower surface rugulose, the hairs, which are similar to those on the upper surface, with a reddish tinge. In life the leaves are dark green above and dark purplish below, and this latter colour persists after drying as a reddish tinge. Petioles 1.5-3 cms. long, the younger ones with a few hairs.

Peduncle sparsely pubescent at base, more densely so towards the apex, about 5.5 cms. long. Branches short with 3 or 4 flowers on each. Bracts narrow, about 3 mms. long. Calyx tube very short, lobes linear lanceolate, hairy, 3.5 mms. long. Corolla campanulate, about 1.2 cms. long, pubescent outside, slightly two-lipped. Filaments rather long, thick, glabrous except at their point of insertion on the corolla, where they are covered with white hairs. Anthers large, connivent, triangular. Ovary and style red-hairy, stigma capitate. Flowers in bud pale yellow. Fruit unknown.

Johore: Gunong Belumut, altitude 3000 feet, R. E. Holttum 10685, May 1923.

This species is near *P. campanulata*, *Ridl.*, but differs in the thicker and narrower leaves, the narrower corolla, and the longer filaments of the stamens.

## ACANTHACEAE.

**Hemigraphis Ridleyi**, *Clarke*, var. *nervosa*, n. var.

This variety differs from typical *H. Ridleyi* in the smaller leaves (3 cms. long and 2 cms. broad), which are broad at the base with a tendency to become cordate, and not cuneate; in the increased pubescence on both surfaces of the leaves, and the absence of raphides; and in the more conspicuous and elevated nerves and reticulations. The flowers are as in *Ridleyi*, except that the bracts are longer (1-1.5 cms. long) and also the calyx lobes (6 mms. long).

Pahang: Railway banks at Kuala Lipis, I. H. Burkill and Md. Haniff 15699, November 1924.



## LORANTHACEAE.

**Loranthus pekanensis**, sp. nov.

Frutex parasiticus, ramulis glabris teretibus. Folia petiolis 1.5-2 cm. longis glabra, coriacea, ovata, apice rotundata, base cuneata, 9-10 cm. longa, 6-6.5 cm. lata; costa subter prominens; nervi laterales urtinque 3 vel 4. Flores 20-30 in fasciculis axillariis; pedicelli 4 mm. longi. Calycis tubus 4 mm. longus, urceolatus, limbo minuto denticulato. Corollae tubus 1.3-1.6 cm. longus, luteo-flavus; lobi 5, reflexi, viridi; Stamina 5. Fructus ignotus.

A shrub parasitic on *Vitex* sp. Branchlets glabrous, stout, terete, the youngest reddish brown, the lower greyish brown, lenticellate. Leaves glabrous, reddish brown when dry, in whorls of three or four, stiffly coriaceous, ovate, rounded at tip, narrowed to the base, 9-10 cms. long, 6-6.5 cms. broad. Nerves 3 or 4 pairs, just visible when dry, slightly more prominent on the upper surface than on the lower, the midrib prominent and elevate below.

Flowers glabrous except for a very fine white pubescence on the inside of the petals; in axillary fascicles of 20 to 30 on the thickened nodes. Pedicels 4 mms. long. Calyx urceolate, minutely toothed, 4 mms. long. Corolla orange-yellow, tipped with green, gamopetalous, of 5 segments, the tips of the petals reflexed, 1.3-1.6 cms. long. Stamens 5 included, style very shortly exsert. Fruit unknown.

Pahang: Pekan, I. H. Burkill and Md. Haniff 17104, November 1924.

## ZINGIBERACEAE.

**Alpinia Burkillii**, sp. nov.

Caulis ad 2 m. altus. Folia 69 cm. longa, 10-13 cm. lata, oblonga-lanceolata, cuspidata, utrinque pubescentia; ligula 6-7 mm. longa, bifida, margine pilosa. Panicula 20-30 cm. longa; calyx circa 1.4 cm. longus, cylindricus, trilobatus; corollae tubus 1.4 cm. longus, pubescens; petala 2 cm. longa, ovato-lanceolata, extra pilosa; labellum amplum, glabrum, 2.7-3 cm. longum, 3 cm. latum. Staminodia magna, bilobata. Stamen glabrum, connectivi appendicula brevis. Capsula globosa, puberula, 2 cm. diametro.

A herbaceous plant about five feet tall. Leaves oblong lanceolate, long cuspidate, pubescent above with long regularly spaced hairs with swollen bases, softly pubescent below, 69 cms. long, 10-13 cms. broad. Petiole 2-2.5 cms. long pubescent. Ligule 6-7 mms. long, bifid, lobes rounded, long hairy on their edges. Panicle 20-30 cms. long, with a narrow pubescent sheath as long, branches 1.5-2 cms. long, all velvety pubescent. Bracts glabrous,



papery, ovate, enclosing 4 to 7 flowers on pubescent pedicels 1.5 cms. long.

Calyx cylindric, 3-lobed, rather longer than the corolla tube, glabrous except for the pubescent tips of the lobes. Corolla tube 1.4 cms. long, pubescent, with a ring of long hairs at the base. Petals 2 cms. long, ovate lanceolate, blunt, hairy on the back, the upper lobe hooded and with a conspicuous spur. Lip large, quite glabrous, 2.7-3 cms. long, 3 cms. broad; side-lobes rounded, mid-lobe bifid, the lobes truncate; margin of lip crisped; two patches of claret colour on the side lobes not reaching the margin, and a number of violet-black lines in the centre of the lip above the mid-lobe. Staminodes two, conspicuous, bilobed, adnate to the base of the stamen and lip. Stamen glabrous, the connective prolonged into a short crest.

Capsule globose, puberulous, about 2 cms. in diameter and crowned by the persistent calyx.

Negri Sembilan: Gemas, I. H. Burkill 4980, August 1919.

Pahang: 126th. mile, Kuantan Road, between Sungai Lepar and Sungai Ketam, and at Sungai Luit, I. H. Burkill and Md. Haniff 17210, 17461, November 1924.

## A New Fern from the Malay Peninsula.

*Syngamma minima*, *Holttum* sp. nov.

Rhizoma repens, tenue, pilis nigris nitidis vestitum. Stipites approximati, 5—15 mm. longi. Frondes rigidae, in sicco fragiles, glabrae, 1—4 cm. longae, 5—8 mm. latae, obovatae vel oblanceolatae, apice rotundatae, basin versus sensim angustatae, margine cartilagineae denticulatae. Costa utrinque vix prominens; venae simplices vel furcatae, liberae vel sub margine anastomosantes, fere obscurae. Sori 1-2 mm. longi, ad venas terminales.

Gunong Pant, Johore, Holttum 17498.

This small fern grows side by side with *S. borneensis* on sandstone rocks at the top of the ridge of G. Pant, at an altitude of about 1600 feet above sea. It somewhat resembles the young plants of *S. borneensis*, but is distinguished clearly from its earliest stages by the shape of its leaves and by its less densely tufted habit. The shorter leaves are often quite as broad as the longer ones, and leaves hardly more than 1 cm. in length may be fertile. The leaves on young plants are more deeply toothed than those produced later. The species is allied to *S. Dayi*, but has much shorter and broader