

# New and Rare Species of Malayan Plants.

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## SERIES II.

This paper contains an account of some novelties collected of recent years together with various corrections and emendations based on the examination of types in the Kew and British Museum herbaria. Among the new species will be found one of the most conspicuous and striking Fig trees in the lowland country and probably the commonest species. Having been confused in herbaria with a rather less common species, *Ficus Miquelii*, King, a very distinct plant, this abundant tree had no specific name, and there are scarcely any specimens of it in the British herbaria. It forms another example of the overlooking of the common species due to the botanist's idea that what is very common all round him, must be very common in the European herbaria, which is frequently not the case. There is still a great deal to be learnt about the commonest plants in the tropics.

## ANONACEAE.

**Ellipeia.** This genus was founded by Hooker for plants with the characters of *Uvaria*, but with an oblong style, and a solitary ventral or subbasal ovule in the ovary and a one-seeded carpel. The original type was *E. cuneifolia*, to which he added in the "Flora of British India" *E. ferruginea*, *E. glabra* and *E. nervosa*, while King added *E. leptopoda*, *E. costata* and *E. pumila*. Of these *E. ferruginea*, *E. costata*, King, *E. leptopoda*, and *E. cherrevensis*, Pierre, certainly resemble *Uvarias*, with wide expanded axillary flowers, the petals subequal and lanceolate, and no style. All appear to be climbers.

**Ellipeia cuneifolia**, Hook. fil. A lofty climber, has the flowers chiefly in terminal racemes, the petals do not expand, they are short and broad, rounded with a depression at the base and extremely unequal, the inner circle being very small. The anther has a broad, round appendage, and there is a distinct style. In the one-seeded carpel the stigma is lateral. I am more inclined to put this plant in the neighbourhood of *Orophea* though I know nothing else like it.

**E. pumila**, King, is an erect shrub with small unisexual lateral flowers, cylindric carpels and terminal style. It seems to me extremely near *Popowia Hookeri*, King, and *Polyalthia argentea*, Hook. fil. I think it should be referred to the genus *Popowia*.



**E. nervosa**, Hook. fil., is a big tree with extra axillary flowers, the petals all similar, not excavate at the base, the one-seeded carpel with a terminal stigma. The foliage much resembles that of *Popowia nervifolia* and I should be inclined to refer it to that genus.

**Ellipeia glabra**, Hook. fil. I cannot separate from *Polyalthia*. It will be seen that there are three distinct forms of plants included under the genus *Ellipeia*. The original one is very distinct from anything else known to me. The *Uvaria*-like species, *E. leptopoda*, *E. ferruginea*, etc. might be kept as a distinct genus under the name of *Uvariella* distinguished from *Uvaria* by the one-ovuled pistil and one-seeded carpels.

**Polyalthia purpurea**, Ridl. n. sp. *P. lateriflora* var. *Kallak* Boerl. Ic. Pt. I.

Small tree about 15 ft. tall, glabrous branches, slender longitudinally wrinkled pale. Leaves narrow, lanceolate acuminate, base cuneate, coriaceous, nerves fine 12 pairs; midrib channelled above, reticulations fine, visible on both sides when dry, 8 inches long 2-2.25 in. wide, petiole thick, black, grooved .25 in. long. Flowers in clusters of about 4 on the branches; pedicels rather stout 1 in. long. Sepals ovate, round, pubescent .15 in. long. Petals outer elliptic, lanceolate, 1 in. long .25 in. wide, subacute, purple, inner petals shorter and narrower, acute, all glabrous. Stamens very numerous with flat round appendage. Ovaries very numerous with no style and small stigma, tips pubescent. Torus pubescent. Fruit oblong, blunt, .75 in. long, one-seeded, stalk 1 in. long.

This has long been cultivated in the Singapore Botanic Gardens with no clue to its history, but there is a specimen in Herb. Kew from the Buitenzorg Gardens named thence, *Polyalthia lateriflora* var. *Kallak* Boerl. In Boerlage's diagnosis it is given as Sumatran. *Polyalthia lateriflora*, King, is different from this in flower and foliage and is based on *Guatteria lateriflora*, Bl. Fl. Jav. t. 50. *Polyalthia lateriflora*, Kurz is *P. simiarum*, Hook. fil.

**Polyalthia hirta**, Ridl. n. sp.

Small tree. Branchlets slender, hairy. Leaves lanceolate acuminate base rounded, narrowed glabrous except midrib beneath, nerves hardly visible above, beneath 7 pairs slender elevate as are the nervules inarching .1 in. from edge, 4.5 in. long, 1.25 in. wide, edges undulate, petioles hairy .05 in. Flowers 1-2 nearly sessile extra axillary .5 in. wide, pedicels very short,



hairy, sepals lanceolate, hairy. Petals triangular lanceolate acute hairy outside, glabrous inside. Stamens rather broad with a round flat crest. Pistils about 6, hairy, style short, distinct; stigmas rather large suborbicular, hairy.

Penang, Pulau Butong Reserve (Curtis 2745).

This species is allied to *P. dumosa*, King.

***Polyalthia asteriella*, Ridl. n. sp.**

Tree. Branchlets puberulous. Leaves thin, coriaceous lanceolate acuminate, base cuneate, nerves elevate beneath 10 pairs, 6 inches long, 3 inches wide, petiole thick .2 in. Flowers extra-axillary on a short pubescent peduncle .05 in. with a few small oblong ovate bracts, pedicels .5 in. long, appressed hairy. Sepals 3, short, ovate .05 in. Petals linear, fleshy, very narrow from a broader base .2 in. long, nearly glabrous. Stamens numerous, oblong, appendage flat. Pistils few, about 6, hairy ellipsoid, narrowed into a small style with a large ovoid stigma.

Perak, Taiping Hills (Ridley 2986).

This very small flowered species is allied only to *P. longifolia* in its small narrow petals, but the petals are even smaller and narrower than in that species.

**GUTTIFERAE.**

***Garcinia Murdochii*, Ridl. n. sp.**

Branches yellow, angled, internodes .75 in., slender. Leaves coriaceous, elliptic, rather abruptly shortly cuspidate, blunt base cuneate, nerves very fine almost invisible on both sides, 3 in. long, 1.5 in. wide. Petiole slender .35 in. Flowers solitary, sessile terminal .5 in. wide. Sepals 4, ovate. Petals 4, obovate oblong, much larger and apparently red. Stamens in a round head 30 or more, anthers peltate, cells 2, crescent-shaped. Female no staminodes. Petals and sepals as in male; pistil subcylindric, stigma very large, cushion-shaped covering the pistil.

Perak, Bikum reserve (Burn-Murdoch 371) male. Borneo, Kuching (Haviland 2339) female.

The Kuching plant has thicker smooth shining leaves with a prominent midrib, but otherwise so far as I can see the two plants agree. The solitary sessile terminal flower is unusual.

***Garcinia minutiflora*, Ridl. n. sp.**

Tree with rough-barked brown terete branches. Leaves coriaceous drying light green, elliptic blunt, almost truncate at top, base cuneate, edge thickened, nerves faint, about 7 pairs, more conspicuous above than beneath, inarching within the



edge, nervules and reticulations nearly as conspicuous, midrib prominent beneath, 2 in. long 1.1 in. wide, petiole .15 in. Cymes on tubercles at the nodes less than .25 in. long, 3 branched branches, yellowish, angled. Flowers .15 in. long. Sepals 4, ovate yellowish. Petals 4, oblong ovate larger tip round white. Stamens minute in a globose head, anthers oblong, connective moderately wide, cells linear 2.

Lankawi Islands, Goa Chinta (Curtis 2802) March 1892. Not really like any species known to me in its small light green leaves and very small flowers.

**Calophyllum lanceola**, Ridl. n. sp.

Small tree. Leaves lanceolate, narrowed nearly equally to both ends, tip acuminate blunt, base acuminate 2 in. long .75 in. wide, petiole .25 in. Flowers axillary solitary or in pairs. Drupe small globose apiculate .25 in. long on slender pedicel .5-1.75 in. long.

Kedah Peak. About 4000 ft. (Ridley 5751).

Allied to *C. parvifolium*, Vesque (*C. microphyllum*, Anderson Fl. Brit. Ind.) but the leaves are quite different in shape. The flowers were all fallen when I found it and no one seems to have got it again on Kedah Peak.

**Calophyllum oblongifolium**, Ridl. *C. pulcherrimum* var. *oblongifolium*, T. Anders. Fl. Brit. Ind. i. p. 271.

This is quite distinct from any form of *C. pulcherrimum* in its hairy buds, peduncles and petioles and the form of the leaf, the much longer racemes and the flowers nearly twice as large. It occurs in Malacca, Perak, Ulu Bubong and Ulu Slim (Kunstler 10929 and 1885).

**Calophyllum neriifolium**, Ridl. n. sp.

Tree. Leaves stiff coriaceous, linear lanceolate to narrow lanceolate, blunt, base cuneate, midrib prominent on both sides, nerves very fine and inconspicuous slightly ascending, edge thickened 3.5 in. long .5 in. wide, petiole .15 in. Buds scurfy. Flowers not known. Fruit globose or oblong .6 in. long on a pedicel .6 in. apparently solitary.

Malacca, Mt. Ophir (Ridley 3223).

**Kayea parviflora**, Ridl. n. sp.

Branches rather slender. Leaves coriaceous lanceolate narrowed to a blunt point, edge thickened, midrib elevate, nerves very faint about 10 pairs, nervules nearly as conspicuous 2 in. long, .5 in. wide, petiole .15 in. thick rugose. Flowers 5-6 in terminal fascicles, very small about .1 in. across, pedicels slender .25 in. Sepals orbicular, petals 4, oblong. Stamens very short.



Perak, Tapah (Burn-Murdoch 382).

The leaves of this somewhat resemble those of a *Calophyllum* but the terminal flowers and stipules are those of *Kayea*.

### TERNSTROEMACEAE.

#### **Ternstroemia penangiana**, Choisy.

There has been a little confusion as to this plant owing originally to mixture in Flor. Brit. Ind. of two distinct species. Choisy based his species on Wallich's 4456, *Fagraea dubia*, a plant with broad obovate very stiff leaves. It has since been discovered on Penang Hill by Maingay and Curtis and has not been found anywhere else. With it has been confused *Erythrochiton Wallichianum* of Griffith obtained in Mergui, a totally different plant with thin lanceolate leaves and much larger fruit. This is the *P. penangiana*, Pierre, Fl. For. Cochin China t. 123 (though he figures the flowers far too small) and the *Garcinia acuminata*, Wal. Cat. 4871 A. King's description of *T. coriacea*, Scheff., applies very well to this, but he refers specimens of it collected in the Andamans and Nicobars by Kurz to *T. penangiana*. I have seen no specimens of *T. coriacea*, Scheff., but the description does not quite suit. The plant more resembles the Javanese *T. microcarpa*, Scheff., which has nothing to do with *T. penangiana* to which King refers it. I therefore retain the name *Wallichianum* for it from Griffith's *Erythrochiton Wallichianum*. The plant ranges over the Malay Peninsula from Singapore northwards to Mergui and occurs in the Andamans and Cambodia.

### DIPTEROCARPEAE.

#### **Dipterocarpus rigidus**, Ridl. n. sp.

Branchlets stout, densely softly hairy. Leaves coriaceous, ovate, subacute; base sharply narrowed, blunt, above glabrous, beneath minutely velvety; nerves 10-11 pairs, sunk above, strongly elevate beneath, hairy, 6 in. long, 4 in. wide. Petiole hairy stout 2 in. long. Panicle 4 in. long, few flowered, glabrous except at base. Flowers large. Calyx narrowly winged, 1 in. long, lobes velvety inside, glabrous outside, 3 lobes oblong, blunt .12 in. long, 2 blunt linear oblong .75 in. long. Petals linear, oblong, grey velvety on both sides, .2 in. long.

Johor, Penyabong (Foxworthy).

#### **Shorea alba**, Ridl. n. sp.

Tree. 100 feet tall, 4 feet through, glabrous except inflorescence. Leaves lanceolate caudate acuminate, blunt, base shortly narrowed thin coriaceous, above smooth, beneath nerves 6-7 pairs, elevate 3.25 in. long, 1.5 in. wide, petiole .5 in. transversely wrinkled. Panicles 2-5 in. long white mealy branches



.5 in. Bracts small. Flowers shortly pedicelled, white .25 in. wide. Sepals ovate acute, white tomentose. Petals ovate blunt, woolly all over, not oblique. Stamens 30, inner whorl with short broad filaments shorter than the oblong bifid anther. Appendage longer, densely ciliate ovary conic tomentose to style base. Style rather short, glabrous.

Penang, Batu Ferenghi by the streams near the iceworks (Curtis 3651).

Near *S. barbata*, but the leaves not glaucous beneath and the anthers not bearded.

### **Synaptea cuspidata**, Ridl. n. sp.

Tree. Branches scurfy. Leaves elliptic, lanceolate, long cuspidate, base narrowed, coriaceous, finely reticulate, nerves elevate beneath, 11 pairs, 5 in. long, 1.75 in. wide, petiole 1.5. Flowers not seen. Fruit ellipsoid, scurfy .5 in. long. Sepals larger pair linear oblong, 3 in. long, .36 in. wide, 5-nerved. Smaller ones .75 in. long ovate long acute cuspidate.

Dindings (Coll. Forest Rangers No. 413).

Perhaps nearest to *S. Perakensis*, but the leaves are more coriaceous and finely reticulate, the inner sepals remarkably long acuminate cuspidate.

### **Vatica? stipulata**, Ridl. n. sp.

Glabrous tree? Leaves thin, stiff, coriaceous elliptic lanceolate, base shortly narrowed, tip acuminate, edge thickened, nerves slender, about 6 pairs, reticulations visible; midrib prominent, 4 in. long 1.5 in. wide; petiole slender 1 in. long, thickened and black in upper third. Stipules large persistent, ovate cordate, round 3-nerved 1 in. long, .75 in. wide. Panicles axillary and terminal, very lax, branches slender about 1.5 in. long. Flowers .25 in. long, pedicels slender .15 in. Sepals small ovate, connate for half their length, scurfy puberulous outside and sparingly inside. Petals 4 times as long, linear, oblong scurfy on the back, not twisted. Stamens 10 filaments very short, ovary conic pubescent, grooved. Style columnar. Stigma clavate.

Mount Ophir (Hullett, 781) April 1888.

The fruits of this curious species not having been seen, the plant remains dubious. In the thin slender lax panicles it resembles *V. pallida*.

### **Balanocarpus Hemsleyanus**, King.

Neither in flowers, leaves nor fruit, resembles the typical *Balanocarpus*. It is quite clearly a *Pachychlamys*, a genus allied to *Shorea*, but which I think advisable to keep separate.



## STERCULIACEAE.

**Tarrietia unifoliolata**, Ridl. n. sp.

Big tree. Leaves unifoliolate, glabrous, coriaceous, petiole 1 in. slender, thickened at tip, petiolule jointed on top .25 in., blade elliptic, subacute, base blunt, slightly inaequilateral and narrowed; nerves slender about 18 pairs, 2.25 to 3.5 in. long, 1-1.5 in. wide. Panicle about 4 in. long, pubescent. Flowers numerous .08 in. long. Calyx tube longer than the 5 short ovate lobes pubescent. Stamens column short, thick, andraecium globose, much shorter than calyx lobes. Carpels in female flowers 5.

Malacca (R. Derry).

Native name "Kamuning hutan." Used as timber for construction while the plant is also used medicinally. This species is very near *T. javanica*, Bl. but the leaves are all unifoliolate with slender pedicels. It is possibly a form of that species but I think it will prove, when the fruit is known, to be a distinct plant.

**Peniculifera**, Ridl. n. gen.

Tree. Leaves alternate distant oblong, lanceolate. Flowers in short axillary fascicles. Petals free to base, oblong, pubescent 5. Petals 5 linear, spathulate, hairy on inner surface. Stamens in a tube, hairy, anthers at the top very small 5, alternating with cylindric processes, 5 large anthers sessile at base of tube. Species one.

**Peniculifera penangensis**, Ridl. n. sp.

Apparently a tree. Leaves oblong lanceolate, cuspidate acuminate, base round, chartaceous, nerves slender 8 pairs in-arching 4-6 in. long .5 in. wide. Flowers about 12 in axillary fascicles, on short .05 in. peduncles, pedicels shorter all pubescent. Sepals .1 in. imbricate pubescent. Petals as long, hairy on inner face, spathulate, round rather thick. Staminal tube as long, funnel-shaped, very hairy.

Penang, Government Hill at 1200 feet (Curtis 3745).

The specimens resemble in appearance *Leptonychia glabra*, Turez.

**Leptonychiopsis**, Ridl. n. gen.

Tree? branches puberulous. Leaves oblong elliptic cuspidate base blunt, chartaceous alternate stipulate. Flowers small in axillary very short racemes. Sepals 3, valvate. Petals 3. Stamens 6, connate at the base in a ring, filaments filiform, anthers subhastate, blunt alternating with 4 linear staminodes. Ovary hairy 3-celled, ovules anatropous at least 2 superposed. Style filiform, stigma minute. Species one.



**Leptonychiopsis parviflora**, Ridl. n. sp.

Leaves abruptly cuspidate, nerves 8 pairs prominent beneath; nervules transverse undulate horizontal, midrib and nerves slightly puberulous, 4-6.75 in. long, 2-3 in. wide; petiole puberulous 2 in. Raceme hairy .1 in. Pedicels very short. Flower .25 in. Sepals puberulous outside, linear narrow, blunt. Petals similar in shape. Stamens as long.

Johore, Gunong Pulai (Ridley 3743) brought by native collector in 1892.

This plant has much the habit of *Leptonychia* but has only 3 sepals, and 6 stamens with some staminodes, the ovary 3-celled.

**TILIACEAE.****Grewia erythrocarpa**, Ridl. n. sp.

Small tree, 12-14 ft. tall. Branches hairy. Leaves lanceolate, acute or acuminate, base round, slightly cordate and inaequilateral, edges sinuate, beneath hairy, midrib sometimes hairy above, nerves 10 pairs, the basal pair often halfway up the leaf, reticulations and nervules prominent beneath 8-10 in. long, 2.1-4 in. wide, petiole .25 in. long, thickly hairy. Panicles 3-5 in., rather compact hanging from below the branches, densely tomentose, hairy, pedicels short. Bracts lanceolate acuminate, green tomentose .2 in. long; sepals linear oblong, white, tomentose. Petals white, reflexed. Disc lobed, yellow. Ovary tomentose. Fruit 1 in. long, pear-shaped, scarlet.

Mountain Forests. Selangor, Sempang Mines (Ridley 15908); Perak, Waterfall Hill (Wray 599).

Mr. Drummond suggests perhaps *G. perakensis*, Drum., but I think it is very distinct, not only in the very long narrow leaves but in the pear-shaped scarlet fruits.

**RUTACEAE.****Atalantia cuspidata**, Ridl. n. sp.

A spiny bush, branchlets pubescent, spines short, blunt straight. Leaves thin-textured, not coriaceous; ovate elliptic, cuspidate blunt, base round, pubescent on the back, midrib sunk above, elevate beneath the nerves about 6 pairs, very fine, forked at tip 2-3 in. long, .5 in. wide, petiole .2 in. long, pubescent jointed in the middle. Flowers solitary, pedicels .25 in. long. Sepals round, pubescent. Petals 5, linear, oblong .4 in. long, white. Stamens linear, oblong. Ovary cylindric, hairy. Style stout, glabrous. Stigma orbicular. Fruit ovoid, blunt 8 in. long, rind thin, pulp scanty; seeds 2 large, flattened.

Malacca, Sungei Hudang; Dindings, Lumut (Ridley 8391, 9944).



## BALSAMINEAE.

**Impatiens Klossii**, Ridl. Journ. Fed. Mal. States Museums, viii, part 4, p. 24. From the Korinchi Valley, Sumatra. The name is preoccupied by *Impatiens Klossii*, Ridl. Trans. Linn. Soc. Botany xi, p. 23, from New Guinea. The Sumatran species may therefore be known as *Impatiens Bodenii*, after Mr. C. Boden Kloss.

## BURSERACEAE.

**Santiria minutiflora**, Ridl. n. sp.

Tree. Leaves 7 inches long; leaflets 5, coriaceous elliptic to ovate, cuspidate, acuminate, blunt; base broad or shortly narrowed; nerves about 6 pairs, elevate beneath slender, secondary nervules fine and conspicuous 3-5 in. long, 1.5-2 in. wide, petiole .1 in. Panicle lax, axillary 2-3 in. long. Flowers very small, cymose and racemose on the branch ends. Sepals broad, ovate, rather thick, blunt 3. Petals larger, ovate, blunt. Stamens 5, anthers sessile on a shallow cup-like disk. Pistilode round, grooved, style short, thick.

Female flower and fruit not seen.

Johor, Tempayan River (Ridley 13250, 13260).

Distinct in its stiff, rather small leaflets and very minute flowers, about .025 in. long.

**Canarium subcordatum**, Ridl. n. sp.

Bark whitish grey. Leaves large, leaflets many crowded and overlapping, ovate lanceolate, long acute acuminate base round subcordate, stiffly coriaceous, glabrous, nerves about 30 pairs, slender subparallel, 10 in. long, 4 in. wide, petiole thick .25 in. long. Drupe oblong, triquetrous 1 in. long and 16 in. across the face.

Pahang, Pulau Tinggi (Burkill No. 906).

The specimen I have seen is very poor, only a portion of a leaf and 2 drupes, but I cannot find any species like it anywhere. The foliage is somewhat like that of *C. hispidum*, Bl., but quite glabrous and thickly coriaceous, the fruits somewhat resemble those of *C. Radlkoferi*, Perkins.

## MELIACEAE.

**Aglaia Kingiana**, Ridl. n. sp. *A. Ganggo*, King. Materials p. 65, not of Miquel.

Tree. 30 to 40 feet tall, 10-15 in. through. Leaves imparipinnate, leaflets glabrous, coriaceous, opposite, lanceolate acuminate, base very shortly cuneate 6 or more pairs, nerves 12 pairs, very faint on both sides, 3 to 4 inches long, 1.5 in.



wide, petiole slender .4 to .5 in. Panicle 9 in. long, glabrous, branches spreading 3 in. or less long, branchlets short .5 in. long. Flowers light yellow .05 in. long. Calyx narrowed into a thick pedicel, lobes ovate, round, scurfy. Petals elliptic, blunt edge thinner, glabrous. Stamen-tube shorter open at the mouth. Anthers 5 large exsert, ovary small, hairy. Fruit unknown.

Dense jungle near limestone rocks. Perak, Goping (Kunstler).

This resembles *A. Ganggo*, Miq. in general appearance but the petals are shorter, and not scaly. Typical *Ganggo*, Miq. has narrow leaves, very oblique at the base and an ovoid stamen tube with a small mouth and small not exsert anthers. There is a plant resembling the Goping one named *Ganggo!* from the Buitenzorg herbarium at Kew, but it is not Miquel's plant.

### OLACINEAE.

#### **Gomphandra salicifolia**, Ridl. n. sp.

Small tree with wiry branches, glabrous except the cymes. Leaves narrow, linear acuminate, base very shortly narrowed, midrib very prominent beneath, nerves invisible above, beneath 4-5 pairs; very short and inconspicuous forming conspicuous loops 3 in. long .3 in. wide, petiole .15 in. Cymes terminal compact, branches very short, peduncle .2 in., puberulous. Flowers crowded, glabrous. Calyx very small. Petals 4, oblong .15 in. Stamens 4, filaments broad, long, hairy below anther, a tuft of hair at the top.

Penang West Hill (Curtis 739 and 1265) at 2,500 ft. alt. Very distinct in its willow-like rather coriaceous leaves.

#### **Gomphandra pubescens**, Ridl. n. sp.

Shrub. Branches wiry, pubescent. Leaves lanceolate caudate blunt, base shortly cuneate, subcoriaceous, nerves basal pair running from near the base along the edge, nerves from midrib 6 pairs, midrib pubescent 3-5 in. long, 1 in. wide, petiole .15 in. pubescent. Cymes extra axillary compact .5 in. long, peduncle .25 in. pubescent. Flowers very small. Calyx-lobes large ovate, cuspidate gibbous at base. Petals 4, very short, filaments obcuneate, very short, anther small with a short process at back

Selangor, Weld's Hill, Kuala Lumpur (Ridley).

Remarkable for its very small flowers, and its pubescence.



## ILICINEAE.

***Ilex pauciflora*, Ridl. n. sp.**

Tree. Branchlets slender, whitish. Leaves coriaceous, rather thinly lanceolate, acuminate, base cuneate; nerves 7 pairs conspicuous beneath, inarching .15 in. from the margin, midrib bold, sunk above, 4.75 to 7 in. long, 1.25-2 in. wide; petiole .25 in. long. Panicles pseudo-terminal and axillary 3-4 in. long with 5 or 6 remote branches of which the peduncle is .5 in. long, slender and bifurcates with a pair of branchlets .26 in. long bearing 3 or 4 small pubescent cymes of 2 or 3 shortly pedicelled flowers .06 in. across. Sepals triangular acute, pubescent. Petals 4, round, twice as long, free nearly to base. Stamens as long, anthers short elliptic. Pistil conic; style short.

Penang Waterfall (Foxworthy 10454).

The long few branched panicle with short few flowered dichotomous branches is not like anything I have seen.

***Ilex illustris*, Ridl. n. sp.**

Bark blackish, longitudinally ribbed when dry, branches stout. Leaves very coriaceous, elliptic, blunt or minutely apiculate, base narrowed, shining, bright green above, light brown beneath when dry, edge crenate, midrib channelled on upper surface, very prominent below and sharply keeled, nerves about 8 pairs, prominent beneath, widely inarching .12 in. from the edge, secondary nerves nearly as prominent, reticulations wide, prominent, whole under surface minutely areolate 7 in. long, 3 in. wide, petiole stout .75 in. long. Flowers not seen. Fruit on a short .10 in. stout peduncle axillary with 5 or 6 flowers, pedicels .4 in. long, ovary .4 in. long, oblong, globose. Calyx connate, shortly triangular, blunt, 4-lobed. Stigma flat, 4-lobed. Pyrenes 4, backs rounded not grooved .25 in. long, .15 in. through.

Pahang, Gunong Tahan (Ridley 16172).

This fine holly is allied most clearly to *I. purpurea*, Hassk., a Japanese and Chinese species, from which it differs in its large stiff, coriaceous leaves, and much larger fruit with broad thick pyrenes. The crenulations of the leaf are most marked toward the top, and are shallow and distant. The main and secondary nerves are decurrent on the midrib.

## SAPINDACEAE.

***Turpinia*.**

In the Materials for a Flora of the Malay Peninsula King gives one species of *Turpinia*, *T. pomifera*, DC. (by misprint *pomiferes*) and a variety *sphaerocarpa*. De Candolle's species



was based on a Nepalese tree which is quite different from the Malay Peninsula one to which Wallich, evidently seeing the difference, had given in his catalogus the name *latifolia*. Wallich's No. 4939 is given for *T. pomifera* and the variety *sphaerocarpa* by King. The variety *sphaerocarpa*, King, is based on *T. sphaerocarpa* of Hasskarl, a Javanese plant which again is different from any plant we have in the Malay Peninsula, and it is clear that King's *T. pomifera* var. *sphaerocarpa* was intended for the commonest of the Malay Peninsula species, but the only specimens named by King in the herbarium I have seen are distinctly different from the common plant. *T. pomifera*, King, (not De Candolle), is only recorded by him from Perak (King's collector 4243), of which there is no specimen here in England and I have no clue as to what it was, but it is improbable that it was the true Nepal plant of De Candolle, *Dalrymplea pomifera*, Roxb.

We have also another very distinct trifoliate plant with large flowers which I propose to describe under the name of *T. trifoliata*.

***Turpinia trifoliata*, Ridl. n. sp.**

A tree. Leaflets 3 distant, elliptic, blunt or cuspidate, serrate subequal, nerves 6 pairs fine, elevate beneath, curved upwards and branching at the top or before reticulations, netted and conspicuous when dry, rather thin in texture, drying light-greenish 6 in. long, 3 in. wide; central petiolule 2-3 in. long, laterals .5 in. long, petiole .2 in. long. Panicle 2-3 in. long, peduncle 1.5 in. long; branches short, dense flowered. Flowers white 3 in. across. Sepals ovate lanceolate narrowed small, lanceolate acuminate, persistent. Pedicels .05 in. Flowers white 3 in. across. Sepals ovate lanceolate narrowed to the round tip .15 in. long. Petals a little longer. Filaments short terete; anthers large, oblong, ovary large conic grooved deeply, narrowed upwards to the style. Stigma distinctly 3-lobed, lobes acute. Fruit ovoid, eventually globose .25 in. through when dry, the three styles as conic processes with grooves between.

Malacca, Nyalas (Goodenough 1771); Selangor, Sempang Mines, Semangkok (Ridley 15906).

***Turpinia latifolia*, Wall. Cat. 4939.**

Tree 30-40 feet tall. Leaves over a foot long of 5 stiff dark green shining coriaceous leaflets, ovate elliptic shortly cuspidate or blunt, base short, cuneate or round or minutely serrate, drying dark fuscous green; nerves very faint above, 4 pairs, elevate beneath, ascending; petioles terminal 2 in. long, laterals .25-.5 in. wide, petiole 3 in. long. Panicles terminal and in upper axils, 3 or 4 terminal, with long 4 in.



secondary peduncles, 8 in. long with spreading branches and numerous small flowers in small cymes of two or three flowers or solitary racemes at the top of the branches. Flowers .15 in. across. Bracts very small triangular, cuspidate. Sepals ovate, blunt .06 in. long minutely ciliate. Petals oblong, blunt, little longer. Anthers small elliptic filaments stout, linear. Styles stout; ovary cylindric, conic not broad and grooved at base.

Common. Singapore, Tanglin; Bukit Mandai, Muar, Bukit Keyara (Fox) Perak, Penang Hill (Wallich 4939) Telok Bahang (Curtis).

Native name Giramong, Geritta.

***Turpinia laxiflora*, Ridl. n. sp.**

A very big tree up to 80 feet tall. Leaves 9-10 in. long, leaflets 5, ovate elliptic, blunt or acuminate entire or minutely crenulate, base round, coriaceous dark green, drying dark brown; nerves fine, 4 pairs ascending as in *latifolia* but fainter 4 in. long, 3 in. wide, petiole (terminal) .75 in., laterals .15-2 in. long. Panicles very lax, slender, spreading 15 in. long, minutely puberulous. Bracts minute, lanceolate acuminate. Pedicels .1 in. longer than the flower. Flowers white 12 in. across, in lax racemes solitary or 2-3 in a cyme. Sepals ovate, round ciliate. Petals much longer, triangular oblong, blunt, minutely denticulate. Stamens short, filaments slender, filiform. Pistil as in *T. latifolia* but smaller.

Singapore Botanic Gardens on the rockery. Perak, Larut (Kunstler No. 2824).

The tree which has white bark sheds its leaves at certain times and flowers when the young leaves develop, but the panicles persist when the leaves are full grown. The young leaves when they first appear are narrow elliptic lanceolate, much longer than broad.

***Napeodendron*, Ridl. n. gen.**

A very big tree entirely glabrous except the flowers. Leaves alternate pinnate with 2—3 pairs of leaflets; leaflets coriaceous. Panicles large, erect, flowers small, white. Sepals 4, ovate. Petals longer 4. Stamens 8, filaments short, thick, hairy, anthers ovoid shortly apiculate, ovary sunk partly in disc 2-celled, one ovule in each cell. Style short, stout. Stigma large, discoid. Fruit unknown. Species one.

***Napeodendron altissimum*, Ridl. n. sp.**

Very lofty tree. Leaves, petiole 2.5 in. long, leaflets alternate or subopposite, coriaceous, glaucescent beneath, elliptic acute, base blunt, nerves elevate beneath 12 pairs, 3.5 to 5 in.



long, 1.75-2.5 in. wide, petiolules thickened at the top .2 in. Panicle axillary and terminal 8 in. long, basal half nude, branches 1.5 in. long. Flowers in short cymes at top .1 in. long, shortly pedicelled. Sepals 4, ovate puberulous. Petals 4, longer oblong puberulous. Stamens 8, outside the disc, filaments broad, thick, oblong, hairy; anther ovoid terminal apiculate. Disc deep annular edge thick; ovary partly free from disc 2-celled 2-ovuled. Style short, thick. Stigma large discoid.

In mountain woods, Ulu Gombak, Selangor.

This tree puzzled me much as I am unable to find any genus described at all distinctly resembling it. I have however, referred it to *Sapindaceae*, although the stamens and style are very different from those of any other genus. It was a handsome tree of the habit of *Nephelium* but taller than most.

**Curtisina**, Ridl. n. gen.

Tree. Leaves imparipinnate. Leaves 4 pairs, coriaceous oblong. Panicle terminal. Calyx 3-lobed. Petals 3 oblong coriaceous, no scales. Stamens 6 outside disc, filaments short, thick, anthers oblong dehiscent along edge. Disc thick annular. Ovary 2-celled, sunk in disc but free, ovules one in a cell. Style conic, short. Stigma small subcapitate. Fruit bilobed or simple, fleshy, red 1-2 seeded.

**Curtisina penangensis**, Ridl. n. sp.

Tall tree. Leaf 12 in. long. Leaflets oblong with a broad base and narrow to tip, lower ones oblique at base, nerves 8 pairs, elevate beneath, reticulations wide 4.5 in. long, 2 in. wide; petioles .5 in., terminal one 1 in. long. Panicle 4 in. long, branches 1.5 in. or shorter, distant. Flowers numerous, pedicels very short or 0. Calyx cup-shaped with three ovate lobes. Petals 3, oblong, coriaceous, valvate .1 in. long. Stamens shorter. Disc thick, elevate. Fruit pulpy bilobed, lobes rounded, .5 in. wide, red.

Penang Hill at 2,200 ft. (Curtis 3648).

I conclude this to be Sapindaceous from its ovary and fruit and can find nothing at all resembling it in that Order. It has somewhat the appearance of *Dacryodes* (*Burseraceae*) except in the fruit and ovary.

**Nephelium Herveyi**, Ridl. n. sp.

Tree. Leaves coriaceous, narrow, lanceolate, blunt acuminate base shortly acute, glabrous; nerves about 18 pairs, shining above subglaucous beneath 3-3.5 in. long 1.5 in. wide, petiole .18 in. Panicle 4-6 in. long tomentose. Sepals ap-



pressed, tomentose, acute ovate. Petals 5, very small linear, glabrous. Stamens glabrous. Fruit 1.25 in. long, red, covered with flat blunt spines .12 in. long, wide triangular at base.

Malacca, Alor Gajah (Griffith) (Hervey, Maingay 3311 and 1630). Dindings, Pangkor, Boundary of the Dindings (Curtis 1389).

This plant at first closely resembles *N. rubescens*, Hiern, and indeed Hiern included these specimens under it. It differs however, entirely from that plant in the fruit, which instead of having very short scattered processes, is thickly covered with flat triangular based blunt spines after the manner of a Pulassan but broad at the base. The leaves are narrower and more coriaceous.

**Tristira penangensis**, Ridl. n. sp.

Large tree. Leaves equipinnate 7 in. long. Leaflets 2-3 pairs, opposite oblong, blunt; base cuneate shortly chartaceous, pale glabrous, nerves 7 pairs, ascending elevate beneath, mid-rib prominent beneath, channelled above 3-5 in. long, 2-2.5 in. wide; petiolules .25 in., petiole 3 in. Panicle terminal, lax 8 in. long. Branches distant lower ones 2 in. long, spreading; upper part of panicles and branch tips pubescent. Flowers numerous fascicled on branches of panicle. Pedicels .1 in. dense, pubescent. Bracts lanceolate, minute, pubescent. Sepals 4, ovate, very woolly, pubescent outside .06 in. long. Petals 0. Stamens short, not exsert 5-7, anthers long, blunt, filaments short, filiform glabrous. Disc irregularly lobed and wrinkled, large, not oblique nor unilateral. Pistil conic 3-angled densely hairy. Stigmas 3, sessile on the narrowed tip, ovules solitary in cells.

Penang, Government Hill 1,200 ft. (Curtis 1086).

I am dubious as to the genus of this plant. It has the general appearance of *Erioglossum*, but it is more closely allied to *Lepisanthes* from which the terminal paniced inflorescence separates it. It seems to be quite apetalous and the fruit is probably triangular and hairy, but ripe fruit has not been seen. It is to be hoped that additional specimens may be obtained from Penang Hill.

**LEGUMINOSAE.**

**Vigna parviflora**, Ridl. n. sp.

Stems slender; leaflets lanceolate to ovate, tip narrowed, bases of lateral ones oblique membranous, glabrous, 2 in. long, .5-1 in. wide, petiolules .1 in. or less; hairy, petiole slender 1.5-2 in. long. Peduncles 1 in. long, slender. Flowers few, crowded at tips, yellow, .25 in. long, keel beaked. Pod sword-shaped, acuminate 2.25 in. long, .26 in. wide. Seed oblong, black, truncate at both ends .2 in. long, hilum long.



Sandy places. Negri Sembilan at Seremban; Perak, Tanjong Malim, Kuala Kangsar, Kuala Temengoh.

I cannot identify this plant with any other species. Prain named it *V. vexillata*, Benth., but that has large purple flowers, this very small yellow ones.

***Bauhinia flammifera*, Ridl. n. sp.**

The common *Bauhinia* which forms such a conspicuous mass of colour in the woods of the low country in Selangor and Perak, has been identified by Baker, Prain and others as *Bauhinia integrifolia*, Roxb. In an expedition to Temengoh in Perak I found a very beautiful and distinct species of this group which I later named *B. holosericea*, but on critically examining the plants described as *B. integrifolia* in the Kew herbarium, I find that the original *integrifolia* of Roxburgh (of which there are specimens at Kew with his writing attached) is *holosericea* from Penang Hill, nor can I find any name for the common lowland plant to which I therefore give the name of *flammifera*.

*Bauhinia flammifera*, Ridl. is a very lofty climber with obscurely angled twigs, scurfy red, pubescent when young. The leaves are thin in texture, ovate cordate, very rarely entire and usually shortly bifid or retuse at the tip, about 4-nerved and 3 in. long and up to 5 in. wide; petiole slender, 2 in. long and pubescent, the red pubescence running on to the nerves in old leaves. The terminal panicles are as much as 8 in. long and as wide; red, pubescent pedicels .6 in. long. Calyx-tube distinctly shorter than the sepals which are nearly glabrous. The petals are oblong crisped narrowing into the claw .3 in. long, hairy outside; rich yellow turning bright red. The ovary is hairy.

Occurs in the southern half of the Malay Peninsula.

Distrib. Malacca (Griffith); Selangor, common; Perak, Kinta River (814) and Sungei Raya (Kunstler 964), Taiping Hills.

***Bauhinia integrifolia*, Roxburgh.**

Has much smaller leaves especially the ones in the flowering sprays and they are never bifid at the top. Branches and leaves beneath hairy, but sometimes nearly glabrous. The flowers are considerably smaller and the pedicels .8 in.; the rachis is black, hairy with shorter red hairs and the flowers fall off after flowering so as to leave a long bare rachis, very unlike the corymbose-like inflorescence of *flammifera*. The calyx is more hairy, the petals almost bristly. Roxburgh's drawing and description give them as light yellow, but I have seen them turning bright red.



This plant occurs chiefly in the north of the Peninsula: Pahang, Sungei Jelai (Machado); Perak, Kinta (Morton) Temengoh (Ridley 4674); Prov. Wellesley (Kunstler) and Penang (Roxburgh, Wallich, etc.) and Patalung in South Siam.

The whole of this group of *Bauhinias* seems to be almost confined to the Malay Peninsula with one or two outliers in the Malay islands, and it is a very critical group.

***Crudia brevipes*, Ridl. n. sp.**

Tree 16 feet tall. Bark of branchlets white. Leaves rather thin; leaflets three, elliptic lanceolate, cuspidate, base shortly narrowed, glaucous beneath; nerves 5-6 pairs, anastomosing within edge, reticulations netted, conspicuous, fine 2.5-5 in. long, 1-1.75 in. wide, petiolule .25 in. or less. Raceme slender, 5 in. long, base shortly nude .5 in. Flowers numerous, dense; pedicels very short, under .05 in. Sepals 4, oblong, blunt .08 in. long. Petals 0. Stamens 6, filaments much longer than the sepals, filiform, anther cordate. Ovary woolly. Style glabrous, filiform. Stigma small, cup-shaped.

Province Wellesley, Tasek Gelugur (Ridley 12653).

Native name, Poko Bebaru.

The pedicels of the flowers are very short for this genus, and the flowers themselves very small. I find no more than 6 stamens in the flower and in one bud only 5. This is fewer than usual in the genus.

**ROSACEAE.**

***Coccomelia*, Ridl. n. gen.**

The small tree *Parinarium? nitidum*, Hook. f., common in the South of the Peninsula and in Sarawak, was referred tentatively to *Parinarium* by Hooker and by King from insufficient specimens, though they pointed out it was not typically *Parinarium* differing in having a cushion-like process at the base of the calyx-tube which in other parts is lined by the swollen bases of the stamens. This hairy process or lining is apparently the disc, and lies on the front part of the tube. The fruit is a small, red pulpy drupe, with a one-celled stone. The stamens are 8-10 in number. This is very different from the typical *Parinarium* in which the carpels are usually 2, the stamens more numerous and the hairy disc seems to be absent, while in no species is the drupe really pulpy or red. In most *Parinariums* the "drupe" consists of a hard brown woody stone without any pulpy pericarp at all. Only *P. Griffithianum* of our species has a thinly fleshy pericarp.

While this plant somewhat resembles *Parastemon* in appearance it is distinguished from that by its possessing 8-10



stamens instead of only 2. It is therefore necessary to found a genus for it and I name it *Coccomelia* (the Greek for a Plum tree), the species thus being *Coccomelia nitida*, Ridl. The southern form from Singapore, Malacca, etc. and from Santubong in Sarawak, has rather narrow lanceolate leaves, the northern form from Penang Hill and Setul heaths has broader leaves, more rounded and larger fruit. Perak specimens seem to be intermediate. I call the northern one *Coccomelia nitida* var. *latifolia*.

### LEGNOTIDAE.

#### **Carallia spinulosa**, Ridl. n. sp.

Tree or shrub. Leaves thin, elliptic abruptly acuminate, base cuneate edge spinulose, nerves fine and faint 14 pairs, secondaries as prominent reticulations, conspicuous, 4-5 in. long, 1.75-2 in. wide, petiole .2 in. Cymes .4 in. long on a peduncle .2 in., with 2 ovate acute bracts at base of the two branches, cyme branches short with numerous imbricating, round bracts at the top. Flowers sessile .2 in. long. Sepals 6 or 7, triangular, acute. Petals shorter, obovate reniform edges undulate, slightly toothed, with a very short claw, white, as broad as long. Stamens in two rows shorter than petals, one row adnate to the sepals, one from the disc enclosed in the petals. Style columnar, stigma capitate. Disc a thick fleshy ring obscurely lobed. Fruit ellipsoid with persistent sepals .2 in. long (dry) 2-seeded.

Perak, Tanjong Malim (Ridley 11858) Cambodia, Tonkin Dong-Dong (Balansa 1506).

This has been referred to *C. lucida*, Roxb., a plant of south India, collected by himself and never apparently seen again by anyone (King erroneously makes it a form of *C. integerrimum*). This species is very distinct in its thin spinulose leaves, in which one row of the short stamens is adnate to the sepals and the 2-seeded fruit. The foliage resembles that of *C. suffruticosa*, Ridl., but the inflorescence is totally different. Balansa describes it as "*Arbrissea*" but as far as I remember the Tanjong Malim plant which grew near the railway station, was a low, bushy tree.

### MYRTACEAE.

#### **Tristania spathulata**, Ridl. n. sp.

Shrub 12 feet tall. Leaves crowded at tips of branches, oblanceolate spathulate rounded at tip or shortly blunt, acuminate base long acuminate, very narrowly decurrent on petiole, coriaceous nerves 13 pairs, faint midrib elevate beneath, 2.5 to 2.75 in. long, .75-1 in. wide, petiole slender .25 in.



Flowers not seen. Cymes in fruit 1.5 in. long, peduncle slender. Fruit calyx cupular with short points, .1 in.; valves of capsule broad oblong .25 in. long, tips broad, rounded.

Pulau Battam island (Ridley 5886).

This plant was recorded in King's Materials as *T. ovata*, Bennett, a Bornean plant, a big tree with much thinner and larger leaves and much smaller fruit, the leaves quite a different shape. The only plant I have seen at all resembling *T. spathulata* is a Borneo plant collected by Motley and Haviland with small flowers, but as I have not seen fruit of these specimens and the leaves are thinner, more lanceolate and with more nerves, I refrain from considering it as the same thing.

***Eugenia clypeolata*, Ridl. n. sp.**

A bush. Branchlets angled. Leaves ovate-cordate, blunt imbricating, stiffly coriaceous, nerves very faint about 8 pairs 1 in. long .6 in. wide, petiole .05 in. Flowers in a dense terminal head, hardly appearing above the leaves, about 20. Calyx-tube .18 in. gradually dilating from base, ribbed, lobes rounded 5, persistent. Petals small, calyptrate white. Stamens numerous, short. Style rather long and stout.

Pahang, Gunong Tahan on the slopes beyond the Teku river (Ridley 16022).

I took this for a form of *E. Stapfiana*, but it has larger leaves quite round and cordate at the base and the flowers smaller and the calyx ribbed not pustular.

**RUBIACEAE.**

***Canthium congestiflorum*, Ridl. n. sp.**

Small tree. Glabrous. Leaves elliptic lanceolate, rather long, acuminate, base shortly cuneate; nerves elevate beneath 5 pairs, slightly sunk above, 5 in. long, 2 in. wide, petiole .25 in. Stipules triangular, cuspidate. Flowers numerous in dense umbels .4 in. through, peduncle .1 in., pedicels as long; bracts ovate lanceolate. Calyx saucer-shaped, hardly lobed, small. Corolla coriaceous, urceolate dilate at base .12 in. long; lobes 5, thick edged valvate triangular, ovate, tube woolly, hairy below stamens. Stamens 5 in the mouth, anthers large, oblong. Style cylindric, rather stout, as long as the tube. Stigma subglobose, grooved, large. Disc low but rather thick, ovary very short.

Johor, Sedenah (Ridley 13468).

The buds of this plant are resinous and the stipules very caducous. The flowers are practically umbellate with two or three ovate, lanceolate bracts, about half as long as the pedicel. It does not at all closely resemble any species known to me.



## SAPOTACEAE.

**Chrysophyllum Curtisii**, King and Gamble.

The flowers of this plant collected on Penang Hill both by Wallich and Curtis have never been described; I find, however, a specimen in flower collected by Curtis just above Grace-Dieu Bungalow on Penang Hill at 2,000 ft. altitude, "a small tree" in Herb. Kew. The flowers are in axillary fascicles of 3-5 on pedicels .2 in. long entirely covered, as are the sepals, with coppery hairs. Two outer sepals ovate, blunt, .1 in. long, hairy, 3 inner sepals much smaller, oblong. Corolla very short, white, lobes rounded 5, with brown streaks in centre, tube very short. Stamens minute, filaments much shorter than the ovate anthers. Ovary red, hairy. Style thick, as long as petals.

The tree seems to be peculiar to the top of Penang Hill.

## GESNERACEAE.

**Didymocarpus modesta**, Ridl. n. sp.

Creeping and ascending, a foot tall, pubescent, hairy all over. Leaves in subdistant pairs, oblong, shortly narrowed at both ends, blunt, .3 in. long, 1 in. wide, petiole .25 in. Flowers in the uppermost axils on slender peduncles .25 in. long or less. Calyx lobes narrow, acuminate, hairy, free nearly to base. Corolla .25 in. long, pubescent, tube cylindric, limb hardly 2-lipped; lobes short, rounded ciliate and almost minutely denticulate on the edge, white. Pistil hairy.

Selangor, Ulu Gombak (Ridley) and Rantau Panjang.

This is near *D. reptans* var. *violascens* but has leaves hairy all over. *Violascens* too has the flowers as large as and with the projecting lower lip of *D. reptans* of Penang Hill, the true form, and the pedicels though not as long are longer than in *D. modesta*. The corolla of *D. modesta* however, is quite small only half as long as that of true *reptans* and nearly regular, the lower three lobes are indeed longer than the upper ones, but are quite similar to them, short and round. The true *D. reptans* of Jack, seems to be confined to Penang. The plants on the main land are the varieties *monticola* and *violascens*, which more or less run into the type of plant.

## ACANTHACEAE.

**Justicia vegeta**, var.

The original type of this from Gunong Mengkuang (Robinson) had large leaves and all the inflorescences axillary and .5 in. long. The plants collected by Kloss on Menuang Gasing had a terminal spike 2-2.5 in. long. This class of *Justicia* usually has terminal spikes and probably this latter is more normal.



**Justicia odontites**, Ridl. n. sp.

Slender, erect simple herb, 2 feet tall, puberulous. Leaves in pairs 2 in. apart, lanceolate acuminate, base narrowed, nerves slender elevate beneath, 7 pairs pubescent beneath, raphides very abundant on both sides, 31.25 in. long, 1-1.25 in. wide, petiole .75 in. long, pubescent. Spike 2.25 in. long, hairy. Bracts lanceolate acute, narrowed to base, upper ones ovate or nearly rhomboid, green, hairy, .25 in. long. Flowers solitary in axils of bracts, secund. Sepals lanceolate long, acuminate, narrow, green, hairy, longer than the corolla tube. Corolla .5 in. long, hairy outside, lower limb 3-lobed, lobes rounded, apparently pink; anther cells narrow, linear, oblong one half way below the other, tailed. Pistil glabrous.

Johor, Kota Tinggi (Ridley 15423). Allied to *J. secundiflora*, Ridl. but taller, laxer and hairy.

**Rungia laxiflora**, Clarke in the Materials, does not seem to bear any relationship to *R. minutiflora* or *R. pectinata*, Nees, but is a *Justicia* closely allied to the preceding.

**Justicia flaccida**, Ridl. Journ. Roy. As. Soc. Str. Br. 57, p. 82.

The name *flaccida* has been anticipated by Kurz. The name is therefore altered to *breviflos* under which name it was distributed.

**Eranthemum crenulatum**, Nees.

It is quite obvious from Nees' description in *Plantae Asiaticae Rariores* and Wallich's specimens that the plant intended by him under this name was what Clark named later as *E. porphyranthos*, and there is a good picture of the Penang Hill plant under the name *crenulatum* in the Botanical Register t. 279. Nees added some Indian plants to his species as varieties, and indeed they appear to be very nearly allied. Wallich's types were the fully grown form, called by Clarke var. *evolutior*.

**Eranthemum graciliflorum**, Nees Wall. Pl. As. Rar. 107.

This plant has been passed over by Clarke and others as unidentifiable. The specimen in Wallich's Herbarium No. 2427 was collected by George Porter by the Kosea River in Penang (I do not know where this is), but the plant though in bad condition is I think undoubtedly *E. malaccensis*, Clarke, with rather broader leaves than usual.

**Eranthemum album**, Nees.

Given by Clarke as from Malacca (Griffith) may be excluded from our flora. The specimens are certainly not the Indian *E. album*, but apparently bad specimens of *E. crenulatum* (*porphyranthos*, Clarke).



**Leda chrysea**, Ridl. n. sp.

Stem unbranched, woody, creeping and ascending, a foot tall, erect part 6 in. long. Leaves rather fleshy, lanceolate or elliptic lanceolate acuminate, base shortly narrowed, glabrous, raphides very numerous and small, drying black, midrib grooved above, 5 in. long, 1.75-2.75 in. wide, petiole .3 in.-.4 in. long. Spikes 2, terminal, little branched, many flowered 2.5 in. long. Bracts minute, persistent. Calyx dilate at base, lobes lanceolate acuminate .1 in. long. Corolla yellow .25 in. long, tube straight, cylindric, lips .1 in. long; anther cells parallel, oblong on the same level.

Selangor, Ulu Gombak (Ridl.).

Near *L. flava*, Ridl. and *L. lancifolia*, Ridl. but the flowers much smaller and lower lip shorter.

**PIPERACEAE.****Piper oreophilum**, Ridl. n. sp.

Erect, shrubby, slender, closely brown hairy on branches. Leaves ovate acuminate rather abruptly, base cordate equally lobes short round, upper ones oblong-lanceolate acuminate, base entire, rounded, 4 in. long 1.75-3 in. across, sparsely hairy above; nerves above and beneath with conspicuous nervules and reticulations hairy, main nerves from base 5, above and ascending pair, nervules numerous conspicuous transverse, petiole hairy 1 in. long, sheathing about a third of its length. Male spikes slender .5 in. long on a very slender hairy peduncle as long. Bracts suborbicular with undulate edge. Female spike 1.2 in. long, thick, cylindric. Ovary sunk in rachis, style rather long, distinct. Stigmas short, broad recurved 3. Drupe pulpy .15 in. sunk for one third of its depth, broadly globose, shortly distinctly beaked.

Pahang, Gunong Tahan, in the gulley on the way to the plateau about 4,000 ft. (Ridley 16106).

Allied to *P. stylosum*. This is possibly the imperfectly described *subrubripicum*, De Candolle, which I have not seen.

**Piper Kurzii**, Ridl. n. sp.

Erect, shrubby, branched. Leaves coriaceous, glabrous elliptic lanceolate acuminate, base cuneate, nearly equilateral nerves fine, elevate both sides, 2 slender ones from base, 2 pairs stouter above the lowest a little above the base of the midrib; nervules nearly horizontal, numerous fine 4-7 in. long, 2-3 in. wide, petiole .1 in. Male spike slender 1.75 in., peduncle .75 in. Bracts oblong, round. Female spike 1.75 in. long, peduncle .1 in. Flowers rather scattered, short sunk, rachis hairy. Stigmas small, thick, round 3. Drupes small .13 in. ellipsoid with a short point.



Perak, Temengoh (Ridley 14575) Female. Selangor, Batu Caves. Burma, Pegu (Kunstler 2220 herb. Kew) Male.

I believe all these three plants are the same. The species belongs to the section *Pseudo-chavica*, as Hooker has noted on the specimen.

**Piper Burkillii**, Ridl. n. sp.

Slender climber, internodes jointed, joints slightly enlarged. Leaves membranous, glabrous, lanceolate, slightly unequal at the base, nerves 1 pair very fine close to the edge, then 2 pairs from near the base of the midrib, ascending; then 4 or 5 pairs from the midrib above, all very fine, 3-4 in. long, 1.25-1.35 in. wide, petiole .5 in. long or less. Female spike peduncle .15 in. long, spike 1.5-2 in. long, hairy. Bracts very short, rounded. Ovary sunk in a pit. Stigmas short, recurved, subovate 3-4. Fruit unripe, shorter than the stalk .1 in. long.

Negri Sembilan, Tampin Hill (Burkill 1177).

*A. cubeba* allied to *P. caninum*. The nervation is quite different, the rachis much more slender and not woolly hairy.

**Piper Klossii**, Ridl. n. sp.

Scandent, branches smooth rather soft, nodes not dilate glabrous. Leaves rigidly membranous, nearly chartaceous, elliptic, gradually blunt, acuminate, base round or nearly very slightly inaequilateral on one side, a little longer than the other, nerves 1 pair from base with 7 pairs from the midrib horizontal and inarching with the inside pair, glabrous above, sparsely hairy on the back, midrib elevate, thickly pubescent 5 in. long and 2.25 in. wide, petiole .25 in. long, grooved. Peduncle 1.5 in. long. Female spike in fruit 4 in. long, rather thick, puberulous. Bract cup-shaped. Drupe globose with a short point .2 in. long when dry, stalk much shorter than drupe, thick cylindric and sunk in rachis.

Selangor, Gunong Menuang Gasing, Ulu Langat (Kloss).

Certainly a *Cubeba*, as the fruit is distinctly though shortly stalked.

**Piper cyrtostachys**, Ridl. n. sp.

A glabrous herb; erect, little or not branched about 2 ft. tall, stem herbaceous zigzag, jointed, nodes not swollen, internodes 2 in. long. Leaves membranous, broad, lanceolate acuminate acute, base very unequally cordate; one lobe about .15 in. longer than the other, quite round, edge undulate, penninerved, 2 main nerves on one side rising from close to base of midrib, side nerves above, another ascending and several sub-horizontal from both sides 4.5 in. long, 1.75 in. wide, petiole



1.1 in. Male spike slender, cylindric, blunt 1 in. long, peduncle 1.5 in. slender. Bracts round, glabrous, stamens 2, filaments long as bracts, anther oblong, globose. In fruit, peduncle 1.5 in., spike of fruit about 1 in. long, curved into a circle or horse-shoe, with numerous crowded drupes sessile in cup-shaped pits, subglobose with a short round stigmatic base, orange yellow.

Perak, Gunong Berumbun near Telom (Ridley 14013).

This is a very curious and striking pepper, erect and herbaceous with leaves like a *Begonia* and bright yellow drupes on a rachis curved into a circle. I cannot identify it with any of De Candolle's incompletely described species.

### LAURINEAE.

#### **Cryptocarya tenuifolia**, Ridl. n. sp.

Tree. Branchlets rather slender, velvety-brown. Leaves thin, nearly membranous, oblong cuspidate, base shortly narrowed beneath glabrous, nerves 9 pairs, slender, elevate beneath and pubescent, above nerves slightly elevate and midrib channelled, nervules slender, irregular, inconspicuous, reticulations lax, 7 in. long, 2.5 in. wide, petiole .2 in. long, velvety. Panicles very slender, axillary 1-4 in. long, pubescent. Bracts small, linear, oblong. Flowers sessile, pink, .05 in. Perianth tube obconic, lobes 6 ovate, blunt all appressed, hairy outside, lobes pubescent within. Stamens in rows 1 and 2 with ovate anthers and sparsely hairy slender filaments, anthers 2-celled, glands large, fleshy, blunt. Ovary narrow, conic, style slender, stigma very small.

Selangor, Ulu Gombak (Ridley) March 9, 1915.

Distinct in its thin leaves and very slender branched panicle of small flowers.

#### **Beilschimedia tonkinensis**, Ridl. n. sp. *B. glomerata* var. *tonkinensis*, Lecomte, Fl. Indo-china v. 149.

Moderately large tree. Leaves membranous, obovate to oblanceolate, glabrous, blunt or subacute. Cymes axillary pubescent .75 in. long. Bracts orbicular silky, falling off very early. Perianth campanulate, hairy inside and out, lobes oblong, blunt 6.2 in. long. Stamens 1st row, filament long hairy, slender, anther 2-celled, with a short terminal apiculus, row 2 apparently abortive, eglandular or with minute glands at base, row 3, absent. Staminodes small, ovoid.

Setul (Ridley 15465).

#### **Cinnamomum velutinum**, Ridl. n. sp.

Small tree. Branches closely softly yellowish woolly tomentose. Leaves opposite above, ovate to elliptic acuminate base round, slightly unequal or slightly narrowed, coriaceous,



soft tomentose on both sides at first, later glabrescent above and beneath except the nerves, areolation very inconspicuous, nerves from leaf-base 3, stout elevate beneath, finer above, nervules from outer pair inarching .05 in. from the edge conspicuously, from central to outer pair undulate horizontal, numerous elevated, all invisible on upper surface .5 in. long, 1.75-2.5 in. wide, petiole thick, woolly .25 in. Panicles axillary and terminal, woolly-tomentose 2.5-4 in. long, branches 1 in. or less moderate stout. Flowers .15 in. long on thick short pedicels, woolly. Perianth tube funnel-shaped short, lobes rounded elliptic silky inside and out. Stamens rows 1 and 2, broad, anthers oblong silky, 3rd row oblong, hairy, glands blunt, cordate. Staminodes fleshy sagittate. Style thick. Stigma peltate.

Pahang, Gunong Tahan, Teku Woods (Ridley 16110).

Near *C. mollissimum* of Penang and Perak, but the soft felted tomentum is very different, the leaves more ovate, glaucous with strongly elevate nerves and nervules, inflorescence stouter and flowers larger.

**Cinnamomum Kunstleri**, Ridl. n. sp.

Tree with spreading branches 30-40 feet tall, stem 8-12 in. through. Leaves coriaceous, very glossy green, purplish when young, elliptic, blunt, glabrous with nerves sunk above, the three main nerves rising .2 in. from base, beneath pubescent hairy, transverse nervules not parallel and horizontal but forked 6-7 in. long, 3 in. wide, petiole thick .25 in. long. Panicle slender, hairy 1-3 in axils, 3-6 in. long (including peduncle 1.5-3 in. long). Branches distant in subopposite pairs 1 in. long, pedicels as long as flowers .08 in., perianth tube very short, silky, lobes ovate, blunt. Stamens filaments rather long, hairy, broad, anthers broad opening with large lower cells, of 3rd row anthers narrower, cells opening laterally, glands cordate, blunt. Staminodes cordate villous.

Perak, Larut, dense jungle, low wet ground, within a 100 ft. (Kunstler 5568).

This has been referred by Gamble to *C. mollissimum*, Hook. f., but it really has much more of the habit of *C. javanicum* from which it is distinct in the venation which is not parallel horizontal but broken up, and the inflorescence which is more slender with few short branches and smaller flowers. *C. mollissimum* is a woolly shrub with much smaller ovate acute leaves.

**Nothophoebe condensa**, Ridl. n. sp.

Tree. Young parts puberulous, branches black. Leaves chartaceous obovate oblanceolate, subacute, base long narrow, nerves 5 pairs, elevate beneath inarching, transverse nervules



slender, few, glabrous 5.5 in. long, 2.5 in. wide, petiole .25 in. long. Panicles small 1.5-2.5 in. rusty-tomentose, branches very short, flowers small, subumbelled on short .1 in. long pedicels, outer lobes much shorter than inner ones rounded. Stamens very short, oblong, anthers nearly sessile, base hairy. Staminalodes clubbed, hairy at base. Pistil ovoid, style slender.

Lankawi, Kerap (Aniff) 15473.

Resembles *N. Kingiana* but the leaves are thinner, the panicles much smaller, the anthers broad subquadrate almost sessile glabrous except the hairs at the base, the staminalodes clubbed, glabrous except the base and pistil ovoid, not flask-shaped.

***Lindera concinna*, Ridl. n. sp.**

Shrub glabrous except the young parts, coppery silky. Leaves oblong, ovate tip rounded or shortly blunt, acuminate base round or very shortly narrowed, stiff coriaceous glaucous beneath, triplinerved with one or two pairs of nerves ascending from upper part of midrib, transverse horizontal nervules very numerous, close and fine, with fine raised reticulations, 1.75-2.5 in. long, 1-1.25 in. wide, petiole wrinkled .12 in.-.15 in. Umbellules few on short .1 in. thick hairy peduncles, 2-flowered. Flowers sessile. Perianth tube very short, lobes 6, narrow, oblong blunt, inner ones broader and longer, glabrous. Stamens 9, filaments long narrow, hairy, anthers 2-celled glabrous, subovate. Drupe not seen, pedicel obconic, hairy with persistent perianth lobes.

Pahang, Gunong Tahan (Robinson 5455) at 5000 ft. (Ridley 16108).

Allied to *L. rufa*, Gamble, but the leaves more coriaceous oblong, ovate and not acutely acuminate, much less hairy; umbellules peduncled, filaments much longer and hairy.

***Lindera caudifolia*, Ridl. n. sp.**

Small tree with slender branches, quite glabrous except the young leaves and raceme. Leaves alternate, thin, chartaceous, coriaceous, elliptic, lanceolate, base rounded or blunt, bluntly caudate, glaucous beneath, bright green above, nerves 6 pairs, very fine and inconspicuous inarching within the edge minutely areolate reticulate beneath, young leaves finely silky beneath, older with the midrib above channelled pubescent, adults quite glabrous 2.25-3 in. long .75-1 in. wide, petiole .1 in. Racemes axillary pubescent .1 in. long with about 5 peduncles. Bracts oblong, small, silky. Umbellule .05 across containing one flower, peduncle slender .1 in. Bracts 4, orbicular glabrous. Perianth lobes 6, white. Stamens 9, anthers 2-celled ovate, filaments slender, glands small. Pistillode



minute conic. Females as in male but stamens reduced to club-shaped staminodes. Ovary ovoid, glabrous narrowed to a short style. Fruit "the size of a pea, black, round, shining."

Penang Hill, 2000 ft. Tiger Hill (Ridley) male. Road to Penara Bukit (female) (Curtis 2447).

A very distinct little tree in its small caudate leaves with very inconspicuous nerves. The lowest pair rises from near the base showing a tendency to be triplinerved. I cannot find any species at all closely allied to it.

### LORANTHACEAE.

#### **Elytranthe rubra**, Ridl. n. sp.

Branches rather slender, with reddish grey bark and numerous lenticels. Leaves subopposite, rather thin, chartaceous, elliptic lanceolate, blunt acuminate, base cuneate, nerves 3 pairs very fine as are the reticulations, both visible when dry, 3.5 in. long, 1.5 in. wide, petiole .4 in. Cymes .75 in. long, branches rather thick, flowers about 10 or fewer, sessile. Bract ovate acute. Calyx tube cylindric .1 in. Corolla tube dilate upwards from base 1.75 in. long, lobes 6 linear spathulate .4 in. long narrow red. Stamens 6.

Setul (Ridley 15238).

Near *E. avenis*, Don, but the leaves are much thinner, and conspicuously nerved when dry, the cyme-branches thicker and the corolla much larger.

#### **Phacellaria malayana**, Ridl. n. sp.

Stems crowded in a tuft, seldom and little branched .3-4 in. long, .1 in. through, red, scurfy when young. Flowers solitary or several together, usually two male to one female. Males cushion-shaped with 4 small valvate acute lobes. Stamens very small, disc large. Female tubular .1 in. long, lobes 4, acute triangular, stigma capitate. Fruit oblong .22 in. long, flattened crowned with the perianth lobes. Seed 1, flat with 5 grooves and plates protruding into fissures.

Selangor, Gunong Mengkuang (Robinson) at 5,000 ft. alt. on a *Loranthus*.

This genus is new to the Peninsula. The other three species known are from Manipur and Tenasserim. This is nearest allied to *P. compressa*, Benth., from Moulmein, differing in the less pubescent bigger branches and much bigger flowers. The specimens collected by Parish, however, are young and in poor condition. The fruit of no species has been hitherto described. It resembles that of *Henslowia* in its having the seed grooved with 5 grooves which correspond to as many shortly intruded plates, but the seed is flat and rather thin, and the spaces between the grooves are rounded and not much elevated.



## MYRICACEAE.

**Myrica aesculenta**, Buch. Ham. Gamble in the Materials for the Flora of the Malay Peninsula identifies our common *Myrica* with this Nepalese species, but *aesculenta* is described as having a fruit as big as a cherry, whereas our species has a fruit no larger than a small pea. Wallich long ago, in the Tentamen Flor. Nepal, notices the differences between the two species and describes the Singapore plant under the name of *Myrica Farquhariana* which is the oldest name for it. It occurs also in Banca and some plants from Sarawak seem to be identical. Gamble also makes a species from Gunong Tahan a variety under the name of var. *auriculata*. This is a bush with oblanceolate blunt shortly acuminate leaves, truncate and auricled at the base with strongly elevated nerves beneath, 3 in. long and 1.15 in. wide. The inflorescence and young parts are quite glabrous instead of being closely pubescent as they are in the lowland *Farquhariana*, and the catkins of the male flowers are on the rachis of a simple spike while the bracts are acute and longer than in that species. It seems obviously specifically distinct and I can find nothing quite like it in the herbarium at Kew. I propose to call it *M. auriculata*, Ridl.

## URTICACEAE.

**Gironniera hirta**, Ridl. n. sp.

Tree. Branches, under-side of leaves (especially the nerves and midrib) and inflorescence densely covered with long yellowish hairs. Buds very hairy. Leaves subchartaceous, broad, elliptic abruptly acute acuminate, base round, smooth above, edge obscurely serrulate, midrib and nerves about 10 pairs elevate beneath very hairy .4-6 in. long, 2-3 in. wide, petiole .15 in. hairy. Flowers not seen. Fruit 1-3 on a peduncle 1.25 in. long, hairy. Drupe ovoid, flattened .25 in. long, densely hairy. Styles hairy, filiform .75 in. long.

Johor, Simpai (Kelsall 4018), Tebing Tinggi (Ridley 11033).

**Laportea pustulosa**, Ridl. n. sp.

Tree 30-40 ft. tall. Leaves oblong obovate acuminate, base rounded glabrous pale beneath, nerves fine about 12 pairs, midrib with a few hairs beneath, many at the base 4.5-5.5 in. long, strongly armed with stinging hairs. Cymes including the 2 in. peduncle 4-5 in. long armed with stinging hairs. Flowers not seen. Sepals in fruit, ovate acute .05 in. Fruit ovoid with a distinct ridge all round, disc papillose, flat .15 in. long. Style short hooked .05 in. long.

Perak (no locality given) Scortechini. "This is the dreaded Pulutus of the Malays."



The common *Laportea* in the Malay Peninsula is *L. stimulans*. This plant is peculiar in its achenes which possess a strong smooth ridge running round them, the rest of the flat achene being covered with conspicuous papillae.

***Ficus polysyce*, Ridl. n. sp.**

A medium-sized or rather big tree about 60-80 feet tall and over a foot through with smooth grey bark. Leaves elliptic or lanceolate membranous, dark green glabrous except for a few sparse hairs on the midrib on the back, short acuminate or cuspidate, the nerves elevate beneath, 6 in. long, 1.75-2.5 in. wide or larger, petiole 1.25 in. long. Figs in clusters on tubercles on the stem and larger branches often entirely covering the surface, obovoid with a flat top green occasionally turning dull red .75 in. long and as thick, with a large umbo of very many bracts within the mouth, peduncles .2 in. long. Male flowers near the ostiole shortly pedicelled, the perianth lobes 3, oblong rounded at tip. Stamen 1, anther oblong, filament very short, male flowers stalked without perianth obliquely pyriform with rather long style. Females pedicelled, no perianth, achene globose.

Very common in secondary growth and lowland forests, Singapore Garden jungle; Bukit Timah, etc., very abundant. Johor, Gunong Pulai; Batu Pahat (Ridley 11035); Pahang, Pekan (Ridley 1175); Negri Sembilan, Tampin Hill (Goodenough), Bukit Klana and Bukit Sulu (Cantley); Selangor, Bukit Kutu (Ridley 7627); Dindings, Lumut (Ridley 7207); Perak, Ulu Bubong (Kunstler 10196), Taiping Waterfall (Wray 2668); Penang Gardens (Curtis 1889); Lankawi (Curtis).

*Distrib.* Bangtaphan (Keith), St. Barbe Isle, south of Singapore (Langlasse).

Native names, Ara Batu, Kelumpang, Kedumpang.

This very common and conspicuous tree belongs to the section *Covellia* and has been confused by King with *F. Miquelii*, as he has named specimens of it with that name, but *Miquelii* is a much smaller tree with the figs smaller and in long racemes from the lower part of the trunk. In this species the figs are borne in tubercles on the branches and on the stem and when at times completely covering and concealing the bark it forms a most striking specimen of a cauliflorous fig. The figs are largely eaten by fruit bats, chiefly *Cynopterus*, which disperse the seeds so that the plant which is never epiphytic comes up commonly in hedges, culverts, etc. It appears to be absent from Sumatra and Java.



**Ficus oreophilus**, Ridl. n. sp.

Young parts, petioles, midrib and nerves beneath, peduncle and figs hairy with short white hairs. Leaves lanceolate acuminate or acute, base blunt rounded, edge undulate, glabrous above, nerves 2, basal distinct above 4 pairs inarching, reticulations wide 3.5-6 in. long, 1.75 in. wide, petiole .4 in. Stipules lanceolate acuminate. Figs globose .25 in. long, solitary axillary on curved peduncles .25 in. long. Bracts small below a short pseudo-stalk. Bracts of mouth numerous rounded blunt glabrous. Male flowers with 2 thin red oblong perianth lobes free. Stamens 2, anthers oblong, filaments very short. Female flower tube moderate, lobes 2 oblong blunt red. Achene rather large smooth slightly compressed round, style short.

Pahang, Kluang Terbang (Barnes 10903). Teku Woods Tahan (Ridley 16310).

Allied to *F. fulva*, Reinw., but differing in the narrow lanceolate leaves and stalked figs, the peduncle is decurved and the bracts are not at the base of the fig, but below a short stalk on which the fig is borne. The bracts of the mouth are much larger and more distinct than in *fulva* and glabrous.

**Pilea calcarea**, Ridl. n. sp.

A slender fleshy herb branched, glabrous about 12 inches tall. Leaves fleshy thin when dry, elliptic ovate blunt, acuminate base narrowed often inaequilateral slightly serrate crenate 3-nerved, 1.5 in. long, .75 in. wide, petiole 1.75 to 1 in. long, slender. Male cymes .4 in. long or less, peduncle very slender, flowers crowded sessile in very small heads. Sepals oblong. Achene oblong ovoid flattened, very short-leaked .05 in. long.

On limestone rocks, Batu Caves, Selangor (Ridley 13369, 8526).

**Pellionia Curtisii**, Ridl. n. sp.

Half-shrubby branched plant about a foot tall, glabrous. Leaves alternate oblique elliptic acuminate base narrowed inaequilateral edge at the apex obscurely sparsely serrate above, densely covered with raphides-bundles beneath, minutely scabrid, nerves slender inconspicuous 3.5 in. long, 1.5 in. wide, petiole 0 to .2 in. Male flowers in a cluster at the base of stem about .75 in. through, numerous pedicels slender .2 in. long. Sepals 5, oblong .1 in. long, blunt. Stamens 5, anther oblong, filaments hardly any. Female flowers in a sessile head .25 in. through in the uppermost axil, sessile .1 in. long. Sepals 4-5, lanceolate acuminate, keeled, the keel prolonged into a long subulate point. Stigma penicillate. Achene ovoid flat, pustular (not quite ripe).

Perak, Bujong Malacca (Curtis Aug. 1898).



## ORCHIDEAE.

**Bulbophyllum (Monantha-parva) nematocaulon**, Ridl. n. sp.

Rhizomes long, filiform with oblong erect curved pseudo-bulbs .15 in. long and .25 in. apart. Leaf elliptic lanceolate acute .24 in. long, .08 in. wide. Peduncles slender .5 in. long with a funnel-shaped bract with a subacute limb below the pedicel. Flower hardly .25 in. wide. Sepals lanceolate acute subequal. Petals half as long lanceolate acute base narrowed. Lip shorter than the sepals, entire lanceolate with a very short claw. Column broad, arms short, bifid blunt erect, foot as long as column.

Perak (Scortechini 614).

The specimen which forms a large mass of slender rhizomes on a tree branch has no flowers but there is a good sketch by Father Scortechini of the flower and its structure.

**Bulbophyllum (Corrhopetalum) Annandalei**, Ridl. n. sp.

Rhizome moderately thick, pseudo-bulbs approximate, truncate conoid .5 in. long. Leaf coriaceous lanceolate blunt narrowed into the petiole 4 in. long, .6 in. wide, petiole .25 in. Scape 3 in. tall with 2 distant sheaths. Flowers 2. Upper sepals ovate .5 in. long, .24 in. wide, subacute deep cream, faintly striped pale brown, edge ciliate, laterals free to near base, 1 in. long, base dilate then slightly narrowed and lanceolate .25 in. wide. Petals ovate .25 in. edge strongly fimbriate. Lip, tongue-shaped, thick, curved, fleshy.

Naunchik. Bukit Besar, at 2,000 ft. on a log across jungle stream (Annandale and Robinson).

**Bulbophyllum xanthum**, Ridl. n. sp.

Rhizome long .08 in. through with distant conic pseudo-bulbs .75 in. long with thick mass of cylindric roots beneath each. Leaf stiff coriaceous midrib only visible at base, lanceolate oblong 7 in. long, 1 in. wide, narrowed to base. Raceme 4 in. long, many flowered rather lax. Bracts .1 in. long, lanceolate, pedicel and ovary .1 in. Flowers .25 in. across, orange and yellow. Upper sepals lanceolate, laterals broad and gibbous at base, all acuminate subequal. Petals half as long, lip as long as sepals, entire shortly clawed sides at base elevate, limb curved linear blunt fleshy. Column moderate, foot long, arms simple erect acute.

On rocks at 800 feet alt. Flowers orange and yellow. Lankawi Islands, Dayang Bunting (Robinson 6238).

This has the habit of *B. lilacinum*, but the sepals are subequal and gibbous at base, and the lip has no side lobes.



**Eria Larutensis**, Ridl. n. sp.

Stem tall, stout compressed .4 in. wide. Leaves rather thin, oblong, lanceolate acuminate, base shortly attenuate, slightly oblique, nerves 6 or 7, elevate 6 in. long, 1.25 in. wide. Racemes subterminal 4 over 12 in. long white, mealy with short white hairs in tufts. Flowers very numerous. Bracts lanceolate acuminate deflexed .05 in. long. Pedicel and ovary .25 in. long, white hairy; upper sepal oblong, blunt, laterals very broad nearly .5 in. long and .25 in. wide at base; oblong lanceolate. Mentum as long as sepal, all sprinkled with stellate hairs. Petals linear oblong, blunt, thin smaller than the small upper sepal. Lip .5 in. long, side lobes oblong, blunt; midlobe clawed terminal, part fan-shaped small with a large blunt hairy callus on top, disc mealy from base to tip of midlobe, a conic callus at the base of the lip woolly. Column very short, foot long, narrow.

Perak, Taiping Hills (Curtis and Derry 3712).

Distinguished from all others of this group by its broad strong nerved leaves and large flowers.

**Cymbidium rectum**, Ridl. n. sp.

A plant with the habit of *C. pubescens* but the leaves erect, very stiff semiterete and deeply grooved, coriaceous 18 in. long, .25 in. wide, bluntly unequally bilobed. Scapes erect, 12 in. long; flowers few, distant. Bracts short ovate acute. Ovary and pedicel 1 in. long. Sepals lanceolate .75 in. long. Petals narrower, yellowish with a purple central bar. Lip hardly lobed, side lobes obscure, rounded, midlobe ovate, blunt with central yellow bar, and a crimson spot near the tip, side-lobes spotted, crimson inside and on outside edge. Column straight rather broad white densely red spotted in front; back purple pink. Anther broad, blunt, yellow. Pollinia 2, connate at top, broad semiorbicular, disc semilinear.

Negri Sembilan, Siliau near Seremban (Genyns-Williams).

I had this plant many years ago, believed to have been found in the Taiping Hills and brought down to Singapore where it flourished and spread in the Botanic Gardens, and was known under the name of *C. erectum*, but Wight had utilised this name for a South Indian species or form of *C. aloifolium*. I appear however, to have never described it being doubtful as to its locality. Mr. Williams found it near Seremban and there was a good drawing of it among his collections of Orchid drawings. It is very distinct in its erect spike and very narrow erect leaves.



## ARUNDINAS.

The genus *Arundina* is a very troublesome one as regards species as the forms seem to run into each other and though easy to distinguish in the wild state, herbarium specimens on which much has been based are very unsatisfactory as a rule, and even Lindley got the species very much mixed up.

***Arundina bambusifolia***, Lindl. Bot. Reg. xxvii. Misc. 2, based on the *Cymbidium bambusifolium* of Roxburgh., is the common Indian species of which I have seen numerous specimens and Roxburgh's drawings. It is a very tall and stout species about 5-7 feet tall with large pink flowers 2-3 in. across, with the sepals and petals rather narrow, the latter not much wider than the sepals. This plant is well figured in Bot. Mag. t. 7284 and William's Orchid Album t. 139.

***Arundina densa***, Lindl. Bot. Reg. xxviii. t. 38, was based on a plant sent to Loddiges by Cuming and has been accredited to Singapore as its place of origin. The specimens in Herb. Kew in Cuming's herbarium are numbered 2058, Island of Bohol in the Philippines. I have seen nothing like it from the Philippines at all and it is exactly like the superb plant from Mt. Ophir where Cuming also collected. The Mt. Ophir plant which also grows on Gunong Kerbau and other Perak hills is remarkable for the large size of the flowers, very broad ovate petals, large lip and very rich colour. It is the finest cultural species of the genus, the flowers resembling those of a *Laelia*.

It used to be much persecuted on Mt. Ophir, every one who ascended that mountain brought down bundles of it and all the best of the *Spathoglottis aurea* too till there was but little left. Besides this very fine form, we also get a smaller paler but very attractive plant on all our higher hills in the Peninsula. It specially thrives on gravelly islets in the mountain streams where it is often very plentiful. In this form the petals are much narrower than in the Ophir plant and colouring paler and the plant usually only about 3 feet tall with narrower leaves. This more resembles the Indian *bambusifolia*. It is impossible however, to separate it specifically from the Ophir form which I take to be the plant intended by Lindley as *densa*, though the figure in the Botanical Register does not do it justice. Both forms of this plant were in common cultivation in Singapore, but were not as easy to propagate as the next species, and were apt to die out after a time.

***Arundina speciosa***, Bl. Bijdr. p. 401, t. 73.

I was misled at one time into thinking that this was the same plant as *bambusifolia* and as I knew that a small flowered *Arundina* was very common and conspicuous in Java, and



was not the *A. chinensis*, Bl., I was puzzled to know how it was that Blume had not noticed this common species, but rather to my surprise I found that the big pink *bambusifolia* is entirely absent from the Malay islands, and that the common plant in Java and Borneo is the *A. speciosa* of Bl. Blume's descriptions of his two species *A. speciosa* and *A. chinensis* are too incomplete to be of much use in identification. *A. speciosa*, Bl. is a short plant usually about 2 feet tall sometimes more, with white sepals and petals and a white lip with a distinct yellow centre patch and a pink tip to the lip. The flowers are much smaller than in *A. bambusifolia*. The colouring varies a little, in the plants in Java the tip of the lip is very pale mauve, and the plants I had from Setul in the north of the Malay Peninsula, and from Sarawak are identical. The plant which grows on precipices of Kedah Peak differed in having the side lobes streaked with brown, the 2 keels on the disc were sometimes connate and the tip of the lip crimson. Very closely allied are *A. philippii* and *Megeniana* of Rchb. f. and I suppose these are the *A. chinensis*, Bl. which has puzzled everyone by Blume's statement that it has 5 keels on the lip, a thing I have seen in no *Arundina* flower. In dried specimens however, it is quite possible to mistake the outer nerves which are then visible for real keels. Blume's plant *chinensis* was, he thought, introduced from China. The Hong-Kong plant has a remarkably deep crimson broad tip to the lip, and the petals and sepals a purer white, and another difference between it and *speciosa*, Bl. is that it, like *bambusifolia*, does not produce bulbils. In *A. speciosa*, bulbils are borne on the sides of the stem especially after the flowers have been cut; these lateral buds have a swollen base about .25 in. through and a stem with leaves like the main stem. They are easily detached and pushed into the ground soon become good sized plants; so easy is the propagation of this plant that it is much the commonest in gardens in the Straits. The plants also often bear more than one raceme at the top.

*A. speciosa* is not common in the Malay Peninsula. It has been obtained at Setul, and used to be abundant as a garden escape or planted on the railway banks near Kuala Lumpur. On Kedah Peak, it grows on the northern precipices, and I shall never forget my collecting it there. Just between me and it was a large patch of grassy turf, on which I was just about to step when an old Sakai or half-bred wild tribe man who accompanied me pulled me back and gave a kick to the turf which immediately slid off completely and fell about 3,000 ft. into the forest at the foot of the mountain. Had I stepped on it I should certainly have gone with it.



**Arundina affinis**, Griff. of the Himalayas is a small form with narrow leaves and a deep coloured lip edge, very like the Hong-Kong plant. It runs very near *speciosa*, Bl., and may be made a variety of that. Quite distinct and good species are *A. minor*, Lindl., of Ceylon, with narrow stiff erect leaves quite coriaceous and small flowers, *A. revoluta*, with very narrow grassy leaves and very small pink flowers, which grows by the Taiping Waterfall, and *A. subsessilis*, Rolfe, with small flowers in a compact head.

### SCITAMINEAE.

**Geostachys densiflora**, Ridl. n. sp.

Rhizome stout, woody with strong woody roots; stem over 12 inches tall. Leaves narrow linear lanceolate acuminate long narrowed to the base 16-18 in. long, 1.5 in. wide, petiole .5-1 in. long, slender, ligule narrow lanceolate blunt .5 in. Scape 4 in. long, rachis and pedicels sparsely hairy. Spikes numerous crowded .75 in. long two-flowered, peduncles .4 in. long. Bracts oblong, cuspidate. Calyx spathaceous, long cuspidate pink. Corolla lobes linear oblong, pink. Lip oblong, obovate .75 in. long, buff. Anther linear oblong crest rounded, large. Capsule (young) subglobose crowned with the calyx, ribbed red.

Perak, Gunong Kerbau, 4,000 ft. (H. C. Robinson).

The dense short panicle of spikes resembles that of *G. secunda* but the narrow leaves, hairy rachis, and conspicuous anther crest separate it clearly.

**Geostachys primulina**, Ridl. n. sp.

Leaf stems tall. Leaves oblong lanceolate, abruptly long cuspidate, base narrowed, 12-13 in. long, 2.5 in. wide, petiole 1.5 in. long, ligule oblong .25 in., sheaths narrow 7 in. long. Scapes 3 in. long, rachis stout densely whitish hairy. Spikes numerous close set, secund 1.5 in. long. Bracts at base ovate ribbed, upper ones larger imbricating. Peduncles very short .1 in. densely hairy. Flowers 2 in a spike, outer bracts oblong cuspidate. Calyx .5 in. long, spathaceous, cuspidate. Corolla .75 in. long, primrose yellow. Anther crestless.

Selangor, Semangkok Pass (Ridley 12029). A much more succulent plant than the other species with broader leaves, and hairy rachis and peduncles.

### PALMAE.

**Licuala Wrayi**, Becc. MS.

Palm 5 feet tall. Leaf 7-lobed, central lobe obcuneate 14 in. long, 4 in. wide at top, teeth short and blunt, .25 in. long, side lobes narrower, the lowest .75 in. wide linear, hard-



ly narrowed to base, petiole rather slender triquetrous 3 ft. 6 in. long thorny half-way, thorns short, hooked. Spadix, peduncle 22 in. long, slender with a long 10 in. papery sheath at base and 2 shorter above with lanceolate acute limb. Inflorescence and free part of peduncle 3 in. long, woolly. Spikes terminal, rachis thick, woolly, the spikes 5, crowded towards top 3 in. long. Flowers white, sessile, on small tubercles, calyx .12 in. long, cylindric, base dilate, slightly dilate upwards, globes irregular pubescent. Petals lanceolate acuminate nearly as long, glabrous. Staminal ring free from corolla, lobes acute.

Perak, Gunong Bubu (Wray) at 4,500 ft. No. 3918.

Beccari named this in Herb. Kew but did not publish it. It is remarkable for the long papery spathes and long peduncled velvety tomentose inflorescence, the spikes crowded at the top. It is closely allied to *L. modesta*.

### **Licuala patens, Ridl. n. sp.**

Stem up to 10 feet tall, 3-5 in. through. Leaves 2-3 feet across; leaflets obcuneate, linear, numerous, 21 in. long, 1.5 in. wide, subequal, teeth 4, broad acuminate .75 in. long, petiole 6-8 feet long, sparsely thorny at base, back rounded, edges sharp .5 in. through. Spadix 3-4 feet long, spathes flattened 12 in. long (the lowest) .75 in. wide, lacerate. Panicles of about 16 spikes, base wide spreading 6-8 in. long, rather slender puberulous with distant flowers. Calyx small, campanulate .05 in. quite entire at first, later with short ovate lobes, all hairy. Corolla very short, glabrous. Fruit "white," oblong globose, peduncled by the persistent calyx and corolla.

Perak, Gunong Bubu (Kunstler 7339) (Wray 3928) 2,500-4,000 ft.

Beccari refers this to *L. paludosa*, and it certainly resembles that species, but the large spreading panicles 18 in. across, and the hairy flowers distinguish it at once. *L. paludosa* is a plant of lowland watery woods, growing in water. This plant is a mountain species.

## **CYPERACEAE.**

### **Carex breviglumis, Ridl. n. sp.**

Leaves long, very slender acuminate ending in a long narrow point, 2 feet long, .25 in. wide, edges scabrid. Culm as long slender, partial panicles narrow, remote 3-4, about 1 in. long on slender peduncles. Male portion narrow short. Female glumes ovate truncate embracing utricle at base, awned, awn scabrid, keeled to base hardly half as long as the utricle, pale greenish. Utricle ellipsoid lanceolate narrow



strong and several less conspicuous ribs on each face, scabrid, and short hairy on edges, .2 in. long. Style short, red trifid nut dark brown, narrow lanceolate triquetrous, narrowed abruptly at both ends.

Pahang, Telom Forests at 4,000 feet (Ridley 12865).

### GRAMINEAE.

#### ***Isachne Kunthiana*, var. *denticulata*, Ridl. n. var.**

Stiff plant with stout woody stems 2-5 in. tall. Leaves crowded coriaceous lanceolate acuminate ribbed 1.10 in. long, .24 in. wide, edges and back when young ciliate, after the fall of the hairs minutely denticulate, sheaths ciliate, culm 4 in. long, glabrous, branches of panicle 5 or 6, the lowest 1 in. long. Spikelets about 9 on the lower ones shortly or not pedicelled. Glumes i. and ii., lanceolate ribbed purple. Glumes iii. and iv. shorter pubescent.

Gunong Kerbau at 6,600 feet (Robinson); also Borneo, Mt. Kinabalu 8,000 feet (Haviland); Ceylon, (Thwaites 2754).

The ordinary form of *I. Kunthiana* here is a weak slender plant with thin stems soft leaves and short slender panicle of very short branches, the lowest half an inch, the outer glumes pubescent. This variety I take to be a mountain form of it. The Kinabalu plant is intermediate in its thin elongate stems.

***Isachne javanica* var. *saxicola*, Ridl., Fed. Mal. States Mus. Journ. vi. p. 196,** must I think be considered a form of *Kunthiana*. It has the stiff leaves of the preceding variety but almost glabrous and not toothed, the panicle is that of *I. Kunthiana*, typical but glabrous.

#### ***Chrysopogon collinum*, Ridl. n. sp.**

3-4 feet tall. Stem fairly stout nodes glabrous, branched. Leaves linear acuminate 9 in. long, .25 in. wide, glabrous minutely thorny on nerves and edge at tip. Panicle shortly protruding from uppermost leaf 3 in. long; rachis slender, minutely hairy. Pedicels hairy in edge. Callus with a short tuft of brownish hairs. Spikelets .25 in. long. Glume i., lanceolate, narrow shortly hairy on nerves and edge, awn slender about as long. Glume ii., similar, awned edges with long white hairs. Glume iii., shorter very thin sparse hairy, acuminate. Awn on glume iv., slender .75 in. long base dark brown above, pale minutely sparsely pubescent.

Setul Bukit Wang (Haniff 649).

Allied to *C. Wightianus*, Nees, but the spikelets smaller and altogether less hairy, the awns are under an inch long and nearly glabrous, while those of *C. Wightianus* are 2 inches long, stout and conspicuously hairy.



**Schizostachyum grande**, Ridl. n. sp.

Culms 60 feet tall, 3 inches through, internodes 2-3 feet long, walls thin. Sheaths over 12 inches long covered with white hairs in fascicles between the nerves; leaves very stiff almost coriaceous, oblong with a somewhat abrupt point; base round, narrowed very shortly to the broad petiole, blades smooth, midrib very prominent edge very minutely serrulate or smooth, nerves 28, petiole .5 in. long, .15 in. wide, sheaths flattened; ligule rather large, not bristly. Panicle 12 inches long. Spikelets crowded in tufts .5—1 in. apart. Bracts short, ovate; spikelets very slender .5 in. long, glumes lanceolate mucronate strongly ribbed, glabrous. Pulea lanceolate acuminate. Lodicules two oblong, lanceolate tip white, ciliate. Stamen anthers shortly apiculate.

Selangor, Semangkok Pass (Ridley 8457, 12043); (Machado 11591); (Curtis 3475) Ginting Bidai (Ridley 7787).

This very fine bamboo forms the greater part of the bamboo forest at the Semangkok Pass. Gamble in Herb. Kew suggested it was his *S. latifolium* based on a plant from Kota Glanggi, a much smaller plant with ciliate glumes. Another plant which he has also written up in Herb. Kew as *S. latifolia* is certainly *S. longispiculata*, Kurz, a Javanese Bamboo with very slender stems and much smaller softer leaves. It occurs at Pahang, Kuala Lipis (Machado 11592 and 11593); Selangor, Ginting Bidai (Ridley 7788); Dindings (Ridley 10322 and 8389).

**Schizostachyum subcordatum**, Ridl. n. sp.

Branches slender. Leaves lanceolate acuminate; base broad subcordate 5-6 in. long, .75 in. wide, midrib slender; petiole very short; ligule very short, no bristles. Panicles simple, numerous in whorls or terminal on leafy branches 3-4 in. long of 7 or 8 clusters of spikelets crowded towards the tip. Bracts ovate mucronate with three ribs from the tip, polished; spikelets very short .15 in. long. Glumes lanceolate smooth. Palea thin, lanceolate acute. Lodicules 0.

Selangor, Semangkok Pass (Ridley 8482). Allied to *S. chilanthum* but differing notably in the narrow lanceolate nearly cordate auricled leaves, and the very small crowded spikelets, which on one spike are crowded into a dense mass 1 in. long. The whole plant appears to be perfectly glabrous.







Ridley, H. N. 1920. "New and Rare Species of Malayan Plants." *Journal of the Straits Branch of the Royal Asiatic Society* 82, 167–204.

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