ON PLANTS FROM SOUTH ANNAM

BY
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AND H. F. WERNHAM.
With an introduction by the collector,
MR. C. BODEN KLOSS.

PREFACE
BY
DR. A. B. RENDLE, F. R. S.

The collection of plants made by Mr. C. Boden Kloss, in the South-east corner of Annam, in March, April and May, 1918, has been determined by members of the Department of Botany, British Museum (where the specimens are preserved), and Mr. Ridley. Mr. Kloss has supplied an account of the localities in which the plants were collected, mainly the highlands of the Langbian province; and also records of colour 1, which are printed between inverted commas. The collection presented by Mr. Boden Kloss to the Natural History Museum comprises 191 species of flowering plants, including one Gymnosperm, Dacrydium elatum, and 4 Cryptogams. There are 60 Monocotyledons, 33 of which are Orchids, and among these are a new genus, Zetagyne, near Pholidota; six new species and a new variety. Three of the six members sent, in the family Zingiberaceae, are also new species; and there is a new Smilax. Of the 131 Dicotyledons the best represented families are Rubiaceae, 13 species, and Compositae, 20 species, with six new species in each. Altogether there are 39 new species, including two new genera and 4 new varieties. The majority of the novelties come from the

1 Omitted by Mr. Moore,
Langbian Plateau, at altitudes of from 5,000 ft. (at Dalat) to 7,500 ft. (Langbian Peaks); a few were collected on the Dran Plateau at 3–4,000 ft. Cyclacanthus, a new genus of Acanthaceae comes from the coastal plain at Tour Cham, where also was collected a new Asclepiad, Toxocarpus Klossii.

Including the 43 novelties the endemic forms number 54, or thirty per cent of the whole; several are Orchids previously collected in the same locality by Micholitz. Sixteen species were previously known from Cambodia, Siam, or some other part of the Burmese Peninsula; the Zingiberaceous genus Geostachys, hitherto known only from the Malay Peninsula, is extended in distribution by the new species G. annamensis. Twelve species are Himalayan, and a similar number Indian, extending in a few cases to further India and the Malay Peninsula. Thirty-two species, or about one-sixth of the whole, are Indo-Malayan, and 4 are Malayan. Eriocaulon Hookeriunum has hitherto been found only in Borneo and the Malay Peninsula. Twenty-four per cent of the whole are more widely distributed tropical or sub-tropical species, including, as for instance among the Composite, a number of common tropical weeds. The Cryptogams include a new species of fern, Adiantum Klossii.

INTRODUCTION

BY

C. Boden Kloss, F.R.G.S., F.Z.S.

During the spring of 1918 I spent some time in South Annam, French Indo-China, and though not primarily concerning myself with plants, succeeded, in the intervals of other collecting pursuits, in bringing together the material dealt with below. My visit, in company with Dr. Malcolm Smith, was made during the second half of the dry season which is not the best time for gathering botanical specimens, as in some of the districts where our camps were made vegetation was much dried up. When I came away towards the end of May the rains had just started; the country was beginning to look greener and many plants were showing signs of budding: this time would apparently be the best for a botanist's visit to commence; he would not experience the pleasantest
weather, which is during the cool season, but would probably enjoy
the most favourable conditions for furthering his objects.

The collection secured contains practically all the species in
flower that I met with round our camps, and was made between
Phanrang, on the coast of South Annam in Lat. 11° 35' N., and the
Langbian Peaks, 7,500 ft. (in the hill province of Langbian which
contains almost all the southern extremity of the Annamite moun-
tain chain), distant from Phanrang about fifty miles in a NW 1/2 N
direction.

The places from which specimens came are:—

1. Tour Cham, Phanrang Province: on the coastal plain
four miles from Phanrang. The country in the neighbourhood is
covered with short grass and scattered thorny bushes, many with
succulent leaves: it has a superficial resemblance to much South
African scenery and is very sterile except where irrigated for rice.
(Specimens collected in March and May).

2. Dahan, Phanrang Province: about thirty miles NW 1/2 N
from Tour Cham. Situated within the lower spurs of the mountain
range at a height of 650 ft. The locality is mainly clothed with
forest, tropical, but very different from dense equatorial jungle owing
to the scantiness of undergrowth and the absence of parasitic plants
and lianas: very dry except along the banks of the Kronfa river
and largely very rocky. In March while I was sojourning there
the prevailing tints of the foliage were yellow and pink and the
ground was covered with dry leaves; but in May, when I passed by
again, all the vegetation had become a beautiful fresh green.
(Specimens collected in March).

3. Dran, Langbian Province; about twelve miles from
Daban and up in the mountains at 3,000 ft. on a broad shelf or
plateau through which the Da Nhim (river) runs to join the Donai.
The first pines were seen at 2,700 ft., and at 3,000 ft. and higher
they predominate in grass-land, though green and denser non-
coniferous forest also occurs. The pine-woods consist principally of
Pinus Khasya with a small proportion of Pinus Merkusii and a
few solitary trees of Thuya sp.; corky-barked oaks grow also among

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the pines on the ridges and afford support to the common scarlet and white orchid, (*Dendrobium draconis*), at 4,000 ft. and higher. Some of the plants obtained round Dran came from swampy spots: some others were collected along the road-side, and of these part have probably been brought up through the construction of the road which is now being made from Daban. (Specimens collected in March and May).

4. *Arbre Broyé*, 5,400 ft., and *Le Bosquet*, 5,200 ft., Langbian Province, are on the way from Dran to Dalat; the route is mainly through pine-forest and grass-land though there are some stretches of leafy jungle also. A few plants were obtained during the journey out and back in March and May. At the latter time a good many things not noticed on the way up were in flower between these two places, no doubt the result of recent rain; at Arbre Broyé I saw on a tree a charming white clematis with a brown and yellow centre. No collecting could be done as my supply of paper had come to an end.

5. *Lian Khanh*, *Gou Gah*, *Tambor*, and *Tambou* are all between Dalat and Djiring, 3,000 ft., about thirty five miles to the south-west of the former. A flying visit was paid to Djiring in April: the route runs over slightly undulating country, between 2,700 and 3,200 ft. in height, through various kinds of forest, scrub and grass-land.

6. *Dalat*, 5,000 ft., in Langbian Province, is about twenty-one miles N. W. of Dran. It is situated near the south-western edge of the Langbian Plateau, the centre of which is an undulating area of treeless grass-land surrounded by pine and oak forest with undergrowth of grass and bracken: there are also some patches of mixed forest. The open country is about eight miles by five in extent and at the New Year the grass, then three or four feet high, is regularly burnt by the Moi (as the Indonesian inhabitants of the hills are called by the Chinese Annamites). This burning, which spreads to the forests also, destroys all seedling trees and is probably the cause of the open area, though now the indigenous population in the immediate neighbourhood is very small. (Specimens collected in April and May).

7. **Langbian Peaks.** 7,500 ft., situated at the north-eastern extremity of the Plateau. The massif is roughly crescentic in form, and the hollow side, facing Dalat, is clothed below the central and higher summits with mixed forest, very open beneath, which becomes small and dense near the ridges and on the two highest peaks, which are adjacent to each other. The eastern ridges are covered with oaks, while pines and grass-land predominate on the outer slopes and on the western arm of the range. I met in this locality only one species of Rhododendron and one very unornamental Begonia (*B. langbianensis* Bak. fil., sp. nov.); but, unfortunately neither was in flower. (Specimens collected in April).

The flora was largely new to me, and as I am no botanist but took practically everything I saw in blossom at each place during the periods of my visits, I shall not attempt to record the occurrence at the various collecting stations of species not in flower. Ferns were very scarce.

The temperatures experienced varied from 65° F. in the early mornings and over 90° in the shade in the afternoons at Tour Cham and Daban to about 52° at sunrise and 65° on dull afternoons in our camp at 6,000 ft. on the Langbian Peaks. The weather was very dry until the third week in April, but subsequently a good deal of rain fell in the hills after midday.

The rainy season at Dalat is from April to October and this is also the period of most equable temperature. The dry season lasts from mid-November to mid-April, and though the nights are considerably colder than in summer, the days, on the other hand, are hotter. In February three or four degrees of frost sometimes occur, and in that month and March the diurnal range of temperature may be between 30° and 90° F., whereas in August and September it is between 50° and 80°. The winter season is much the pleasanter time for a visit.*

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*For another account of my visit, with a sketch map showing route and localities, and plates of scenery and vegetation, see "Ibis", July 1919, pp. 392-402, text-figure 3, pls. VII-IX. Note that the upper illustrations on pls. VII and VIII have been misplaced: the upper picture on pl. VIII goes with the upper legend on pl. VII, while the upper picture on pl. VII is a photograph of the Langbian Peaks and Plateau.
The general aspect of the Langbian hill region is probably very like that of the Shan States. The pine woods which extend to fifteen or twenty miles south of Djiring belong to the most southerly forests of this kind in continental Asia.

It is sometimes stated, even as recently as 1913 (cf., Groom and Rushton in Journ. Linn. Soc., Bot., XLI, pp. 458, 484), that *Pinus* occurs in the Malay Peninsula. This is not known to be the case even if we consider this peninsula to commence, as we must if we want to be accurate, at the head of the Gulf of Siam, i.e., in lat. N. 13° 30'.

Pines are not recorded from Mt. Nwalaboo near Tavoy in Southern Tenasserim and are therefore unlikely to occur on Mt. Myengmolekhat, 6,800 ft., a little further south and just within the peninsular area.

The species of *Pinus* and their distribution in Southern Indo-China and the adjacent archipelago are:

*Pinus Khasya* North Tenasserim (Martaban); North Siam (Chiengmai District); Annam.

*Pinus Merkusii* North Tenasserim (Martaban; Salwin and Thongyin rivers); North Siam (Chiengmai district); Annam; Cochin China;* Philippines (Luzon and Mindoro); South-eastern Borneo; North Sumatra.

*Pinus insularis* Philippines (Luzon); Timor.

Under the circumstances the absence of *Pinus* from Java is remarkable.

**MONOCOTYLEDONS.**

**ORCHIDACEAE**

**BY**

H. N. RIDLEY, C. M. G.; F. R. S.

1. **DENDROBIUM SECUNDUM** Wall.

Dran, 3-4,000 ft. "Crimson with orange lip, no leaves."

*Distrih.* Cochin China, Martaban, Malay Peninsula, Sumatra, Java.

*Not indigenous; but introduced from Annam.*

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2. Dendrobium Williamsoni Day & Rehb. fil.

Langbian Peaks, 6000 ft. "Whitish to pale yellow, lip streaked scarlet, top of throat carmine." Dalat, 5000 ft. "Flowers yellow, hairy part of lip and base of hood blood-red, 2 to 4 flowers in a cluster."

Distrib. Assam, Khasiya.

3. Dendrobium Draconis Rehb. fil.

Dran, 3–4,000 ft. "Flowers white, lips striped vermilion becoming yellowish in front." Flowers in clusters of 2–6.

Distrib. Tenasserim, Siam, Cochin China.

4. Dendrobium Pierardii Roxb.

Dran, 3–4,000 ft. "Sepals white faintly tinged green and tipped faint crimson. Petals white faintly tinged green. Lip pale yellowish green, throat streaked with purple."

Distrib. Himalayas, Bengal south to Tenasserim and Malay Peninsula.

5. Cirrhopetalum Maculosum Lindl.

Langbian Peaks at 6,000 and 6,500 ft. "Dull greenish yellow spotted brown to dull pale crimson, greenish slightly marked with reddish brown."


6. Ione Annamensis Ridl., sp. nov.

Rhizoma validulum, pseudobulbis remotis curvis conicis flavis rugulosis (in sicca) 2.5 cm. longis 1 cm. latis ad bases. Folium lineari-lanceolatae coriaceum obtusum minute bilobum, basi in petiolo 1 cm. longo attenuatum, 12 cm. longum, 1–5 cm. latum. Sepalum gracilis 30 cm. longus, vaginis ad 6, remotis 3 cm. longis. Racemosus 6 cm. longus floribus nutantibus 6. Bractae lanceolatae subscariosae 1 cm. longae appressae. Pedicelli graciles 1.5 cm. longi. Sepalum pascicum ovatum obtusum 1.2 cm. longum 7 mm. latum, lateralia angustiora sublanceolata aequilongia basi connata. Petala ovata obtusa minute denticulata 3-nervia multo breviora. Labellum carnosum basi cymbiforme, apice ereso minute papilloso, 8 mm. longum, kermesinum marginibus ad basinsvidetur viridulum; callo ad basin transverso cornubus 2 minutis. Columna
flava sepalo postico adnata, stelidiis parvis angustis recurvis. Pollinia globosa. Capsula obconica 1 cm. longa.

Langbian Peaks, 6,000–7,500 ft. "Dull pale green to dull pale crimson streaked dark crimson."

Allied to I. paleacea Lindl., of the Himalayas, but with shorter sepals and petals, and shorter lip with upcurved sides and a very different callus at the base.

7. Eria paniculata Lindl.

Langbian Peaks, 6,500 ft. "Greenish and yellowish white blotched with crimson." This form differs from typical E. paniculata in its long narrow lanceolate subulate bracts 7 mm. long.

Distrib. Sikkim, Assam.

var. angustifolia Ridl. var. nov.

Caulis. 11 cm. longus, foliis carnosioribus angustioribus 14 cm. longis 3 mm. latis. Racemus ut in typo sed callis in labello multo longioribus. Dalat 5,000 ft. "Flowers pinkish crimson white." A somewhat similar form but more intermediate between this and the last was collected in Laos by Micholitz; the very narrow stiff leaves, and the stronger developed calli on the lip, which is purple in the centre of the terminal lobe, are distinguishing marks.

8. Eria globifera Rolfe.

Langbian Peaks, 6,000 ft. "Lip yellow streaked brownish, throat much streaked with crimson." This specimen has remarkably large flowers, the sepals 3–5 cm. long., .5 mm. across. The type plant, however, with smaller flowers, came from the same locality.

9. Eria nivosa Ridl., sp. nov.

Caulis lignosi 3–5 cm. longi. Folia carnosa linearia 10 cm. longa 3 mm. lata, canaliculata. Racemus terminalis 8 cm. longus omnino albo-lanatus, floribus ad 6, pedicellis 3–4 mm. longis, bracteis ovatis subaequilongis. Sepalum posticum oblongum obtusum .5 mm. longum; lateralia triangularia aequilonga, .4 mm. lata, ad basin extus lanata intus glabra vel parce lanata. Petala linearia breviora obtusa sparse lanata; Labellum carnosum oblanceolatum obtusum apice incassata, in medio depresso, carina brevi in ungue, callo oblongo papilloso in medio, marginibus minute ciliatis; Columna
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brevis; Anthera ovoides breviter apiculata.

Dalat, 5,000 ft. "Yellow; Lip crimson-brown, stem and
buds and back of flower silvery to greenish." Allied to Eria
pannea Lindl, but with a longer stem, narrower leaves, more and
smaller flowers and a quite different lip.

10. ERIA TOMENTOSA Hook. fil.

Dran, 3-4,000 ft. "Brown; bracts ochraceous." A spike of
flowers in bud appears to be this species.

Distrib. Silhet, Chittagong, Tenasserim.

11. ERIA AMICA Rehb. fil.

Langbian Peaks, 6,500-7,500 ft. "Flowers pinkish white
spotted purple; lip yellow; white blotched with yellowish and
crimson in centre.

Distrib. Himalayas, Assam.


Langbian Peaks. "White tinged yellowish faintly streaked
with crimson, lip spotted with deep crimson."

Distrib. Sikkim, Nepal.

13. Phaius Wallichii Lindl.

Dalat, 5,000 ft. "Flowers crimson brown and white. 5 to 6
ft. tall."

Distrib. Sikkim through Burmah to Malay Peninsula.

14. CCELOGYNE LAWRENCIANA Rolfe.

Dalat, 5,000 ft. "Flower cream, upper side of mouth orange."

Originally collected by Micholitz in this district.

15. CCELOGYNE MOOREANA Rolfe.

Langbian Peaks, 6,500-7,500 ft. "White lip blotched
orange; Corolla pale yellow." Originally collected at this spot by
Micholitz.

16. CCELOGYNE ANNAMENSIS Ridl., sp. nov.

Rhizoma erassum, vaginis coriaceis tectum, pseudobulbis
oblongo-conicis 5 cm. longis. Folia lanceolata acuta, basi in petiolo
alato angustata, 20 cm. longa 4.5 cm. lata; petiolo 7 cm. longo.
Scapus in apice pseudo-bulbi 30 cm. longus. Racemus flexuosus
14 cm. longus parte leasali bracteata, 7 cm. Pedicelli cum ovarii

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1 cm. longi. Sepala oblonga lanceolata acuta 2 cm. longa 5 mm. lata. Petala angustiora lanceolata acuminata .2 mm. lata. Labellum 2 cm. longum, lobis lateralis oblongis obtusis; epichilo 1.5 cm. longo obtuso, marginibus denticulatis. Labellum 2.2 cm. longum, lobis lateralis latis rotundatis denticulatis, epichilo oblongo-ovoides obtuso margine denticulato, nervis elevatis 3 a basi usque ad epichilium currentibus processubus conicus elevatis in seriebus 2 vel pluribus. Columna arcuata, clinandrium margine brevi bilobo rotundato. Anthora conica.

Langbian Peaks, 6,500 to 7,500 ft. “White, lip blotched orange and yellow.”

17. SIGMATOGYNE PANTLINGII Pfitzer.

Langbian Peaks, 6,500 ft. “Flowers pinkish yellow. Leaves bronze green, bulbs yellowish. Leaves and bulbs green.”

Distrib. Assam. Also collected by Micholitz on Langbian.

In the original drawings of this plant 3 small calli are shown on the lip, the middle one very small and nearer the base. This middle one does not occur in Kloss’s specimens which otherwise exactly resemble the type.

18. PHOLIDOTA CONVALLARIAE Hook. fil.

Langbian Peaks, 7,000 ft. “White.”

Distrib. Khasiya, Tenasserim.

ZETAGYNE Ridl. gen. nov.


19. ZETAGYNE ALBIFLORA Ridl., sp. nov.

Pseudobulbus 2 cm. longus, caules foliacei 1.5 cm. bracteis ovatis nervosis. Folia 3 cm. longa .5 cm. lata subobtusa, basi in

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Langbian Peaks, 6,500–7,500 ft. “Flowers white.”

This little plant has exactly the habit of *Panisea parviflora* Lindl., but differs entirely in the form of the column which suggests that of some species of *Platyclinis* or *Pholidota*. It is short and sigmoid, with a tall oblong truncate hood to the clinandrium nearly as long as the rest of the column and much overtopping the anther. The rostellum is very prominent and thick, and the stigma cup-shaped with a thick edge. The sepals have a strong thin wing or keel running along the back.

20. **Otochilus forrecta** Lindl.

Langbian Peaks, 6,000–7,000 ft. “White blotched brown lip; *Columna* greenish brown.”

*Distriňb.* Himalayas to Tenasserim.

21. **Calanthe velutina** Ridl., sp. nov.

*Rhizoma* validulum. *Folia* ovata, apice subacuminato, superne glabra subtus hirtula, nervis prominulis ad 7, 18 cm. longa, 9 cm. lata; petiolo 30 cm. longo. *Scapus* 26 cm. longus hirtulus; flores ad 8. *Bracteae* lineares acuminatae .7 mm. longae; pedicelli 1 cm. longi omnes hirtuli. *Sepala* ovata acuminata cuspidata .2 cm. longa. *Petalae* ovata subobtusa glabra breviora aequilata. *Labellum* sepalis aequilongum, puberulum obovatum integrum, basi angusto, callis 2–4 brevibus semiellipticis ad basin calcar brevi crassiusculo unecato .5 mm. longo.

Langbian Peaks, 6,500 ft. “Flowers white. Lip streaked ochreous.”

This has the habit of *C. alismaefolia* Lindl., but with an entire lip. The underside of the leaf and inflorescence is covered with very short hairs.

22. **Arundina speciosa** Bl.

Dran, 3,000–4,000 ft., Lian Khanh Falls, 3,000 ft. “White,
throat spotted purple; bottom of lip yellow, edges yellowish." The
tip of the lip is however distinctly pink.

**Distrib.** India, Malay Peninsula, Java, China.

23. **Cymbidium lancifolium** Hook.

Dalat, 5,000 ft. "Flowers white or pinkish white. Striped
depth crimson, hood tipped yellow. Ground orchid with coarse roots,
no bulb."  

**Distrib.** Himalayas, Malay Peninsula, Java, China, Japan.

24. **Vanda micholitzii** Rolfe.

Gou Gah Falls, 2,900 ft. "White becoming pale green at
extremities of petals. Leaves alternate and opposite." First obtained
at Langbian by Micholitz.

25. **Vanda watsonii** Rolfe.

Langbian Peaks, 6,000–7,000 ft. "White slightly tinged with
pink, base of lip orange and yellow. Leaves green spotted crimson." Also previously collected by Micholitz.


Dran, 3,000–4,000 ft. "Upper sepal and petals dull reddish
yellow spotted crimson, throat white. Column white; lower sepals
crimson, reverse salmon red. Stems red."

**Distrib.** Assam and Burma.

27. **Saccolabium calceolare** Lindl.

Langbian peaks, 6,000–7,000 ft. "Yellow blotched with red,
fringe of lip white."

**Distrib.** Himalayas, Assam.

28. **Saccolabium klossii** Ridl., sp. nov.

Caulis erecti 14–18 cm. longi; vaginis valde rugosis 1 cm.
longis. Folia linearia carnosa inaequaliter biloba obtusa 8 cm.
longa .7 mm. lata. Racemi plures multiflori densi 4 cm. longi.
Bractae persistentes 3 mm. longae. Flores rosei .5 mm. longi,
pedicellis .5 mm. Sepala ovata obtusa lateralia carinata. Petala late
ovata rotundata. Labellum lateribus ad basin involutis, epichilico
brevi acuto ovato cymbiformi callo v-formi ad basin. Calcare erasso
in medio attenuato apice subgloboso dilatato. Pollinia oblongo–
rotundata, pedicello brevissimo lata, disco oblongo quadrato quam
pedicellus multo majore. Capsula ellipsoidea ad basin angustata .5 mm longa.

Langbian Peaks, 6,000–7,500 ft. “Pale crimson, spur white.”

Allied to S. rubesens Rolfe, of the same district, but the flowers are much smaller, and the spur is pinched in before the globosely dilated tip.

29. Saccolabium Eberhardtii Finet.

Langbian Peaks, 6,000 ft. “Pale crimson.” This was the original locality of the species.

30. Saccolabium Gemmatum Lindl.

Dalat, 5,000 ft. “Deep crimson, lip white.”

Distrib. Himalayas.

31. Thrixspermum Fragrans Ridl., sp. nov.

Folia lorata biloba 16 cm. longa 1.5 cm. lata. Racemus 2 cm. longus, bracteis cymbiformibus remotis 4 mm. longis. Flores ad 4; pedicellis gracilibus .5 mm. longis. Sepala et petala lanceolata candata augusta 1.5 cm. longa. Labellum saccatum, lateribus elevatis apice subulato, 1 cm. longum, calcare oblongo linguiforme truncate in ore. Columna pede sepalis unita, marginibus elevatis involutis.

Dran, 3,000–4,000 ft. “Flowers white tinged yellowish with strong scent of tuberose. Leaves alternate. Roots greyish green.”

Allied to Th. notabile Ridl., but the leaves much larger and a callus in the mouth of the spur.

32. Spiranthes Australis Lindl.

Dalat, 3,000 ft. “Flowers pink.”

Distrib. Tropical and subtropical Asia except Malay Peninsula, Australia, New Zealand.

33. Cypripedium Villosum Lindl.

Langbian Peaks, 7,000 ft. “Dull waxy yellow, washed and veined with reddish brown. Lip green veined darker, its centre chocolate and edges whitish.”

Distrib. Tenasserim.
ZINGIBERACEÆ.

BY

H. N. RIDDLE.

34. KÆMPFFERIA ALBÆ-VIOLACEA Ridd., sp. nov.

_Folia_ 2 ovata sessilia 5-9 cm. longa, 4 cm. lata glabra. _Flores_ congesti inter _folia_ circiter 8. _Calyx_ tubulosa uno latere fissa, lamina lanceolata acuminata 1.5 cm. longa. _Corolla_ tubus gracilis 4 cm. longus. _Petala_ oblonga obtusa sepalis latiora. _Labellum_ obovatum, ungue longo breviter bilobum, lobis rotundis.

Dran, 3,000-4,000 ft. “White faintly tinged with violet. Lip darker and blotched with violet.”

“This belongs to the affinity of _K. galanga_ L., but the flowers are much larger than in any species known to me and the lip but shortly lobed at the tip.

35. AMOENUM LACTEUM Ridd., sp. nov.

_Folia_ glabra angusta linearia acuminata 24 cm. longa 5 mm. lata, vaginis angustis longis, ligula brevi truncata. _Capitulum_ 2 cm. longum, scapo 11 cm. bracteis inferioribus ovatis, superioribus oblongis 2 cm. longis, cuspidatis, rachide velutino; bracteis capituli truncatis oblongis margine hirto. _Calyx_ 2 cm. longus tridentatus, marginibus et dentibus hirtis. _Corolla_ tubus 2 cm.; lobi lineares oblongi 5 mm. longi. _Labellum_ integrum obovatum 7 mm. longum 6 mm. latum. _Anthera_ oblonga, crista biloba in angulis supremis.

Dran, 3,000-4,000 ft. “Flowers yellowish white, bracts reddish.”

Allied to _A. uliginosum_ Kœn, var. _lappaceum_ Ridd., but with narrow leaves, hairy bracts and longer scape.

36. GEOSTACHYS ANNAMENSIS Ridd., sp. nov.

_Rhizoma_ crassum lignosum vaginis coriaceis tectum. _Folia_ 6 vel plura linearia-oblonga longe acuminata, subitus pubescentia demum glabrae: 30 cm. longa 4 cm. lata, vaginis 18 cm. longis rubropunctatis. _Scapus_ erectus 14 cm. longus basi 7 cm. vaginis coriaceæ pluribus tecto, panicula 7 cm. longa compactus multiflorus. _Bractæ_ chartaceæ oblongæ 3 cm. longæ. Rami paniculae 2-3 flori. _Pedicelli_ 5 mm. _Calyx_ tubulosus truncatus breviter in uno latere fissus 1.5 cm. longus. _Corolla_ tubus 2 cm. longus cylindricus.
supernedilatatus, lobus posticus lanceolatus cucullatus cuspidatus 1.5 mm., laterales lineari-oblongi breviter cucullati. Labellum late obovatum trilobum, lobis lateralis latissimo rotundatis medio angustior oblongo, 3 cm. longum, 2.5 cm. latum. Anthera 7 mm. longa, crista tenui oblonga reniforme in dorso.

Dalat, 5,000 ft. “White tinged with pink and spotted crimson.”

The genus Geostachys has been hitherto known only from the Malay Peninsula. This species has not seconf flowers or rather branches as most of the species, and has a distinct thin crest.

37. ALPINIA BRAC TEATA Roxb.

Langbian Peaks, 7,000 ft. White lip crimson with yellow extremity.

Distrib. India, Burma, Shan States, Siam.

38. ALPINIA VE LUTINA Ridl., sp. nov.

Folia lanceolata utrinque attenuata glabra 34 cm. longa 6 cm. lata. Panicula densa 11 cm. longa tomentosa. Bractea caduca oblonga obtusa 1 cm. longae molliter hirtae. Calyx tubulosus densa hirtus 2 cm. longus apice breviter trilobus. Corollae tubus aequilongus lobi spathulato cucullati hirti. Labellum carnosum, ungue longo, limbo decurvo obovato apice rotundato trilobo, nervis elevatis. Anthera oblonga dorso hirta appendice nullo filamentum petalo aequilongum. Capsula globosa rubra 1 cm. longa hirta.

Langbian Peaks, 6,500 to 7,000 ft. “Flowers white streaked with crimson, mantle pale green, fruit blood-red.”

This very soft tomentose plant is allied to A. Murdockii Ridl.; A. oxymitra Schum. is also allied to it, but has distinct staminodes and a crested anther.

39. ALPINIA CONCHIGERA Griff.

Dalat, 5,000 ft. “White.”

In young bud but I think it is this species.

Distrib. Burma, Malay Peninsula.
BURMANNIAEAE TO GRAMINEAE.

BY

DR. A. B. RENDLE, F.R.S.

BURMANNIAEAE.

40. BURMANNIA DISTICHA L.

Lian Khanh Falls, 3000 ft. In grassy swamps.
“Flowers violet and yellow.”
Distrib. India, China, Australia.

LILIACEAE.

41. SMILAX ANNAMENSIS Rendle, sp. nov.

Frutex scandens, glaber. Caules subangulosi, laeves, aculeis parvis subrecurvis sparse armati. Folia ovata vel ovato-elliptica; apice acuta, basi rotundata demum subacuta, conspicue 5-nervia, nervi duo centrali proprios cum eo supra basin coaliti; petioli infra medium in vaginam subfoliaceam saepe cirrhiferam expansi. Racemi 3-2-umbellati, 2 in exemplo unico 3-umbellati, inter folium et squamam ovatoacutum nunc fissam nascentes, folio duplo vel triplo breviores. Bracteae late ovato-cordatae, acuminata setaceo. Umbellae multifioreae, globosae; alabastrae oblongae obtusae pedicelli tenues patentes. Fl. mus. Sepala oblonga, ut petala lineari-angustata paullo longiora demum revoluta; stamina 6, antherae obtusae demum excurvatae. Fl. fem. Sepala anguste ovato-oblonga; petala e basi latiore linearia, sepalis subaequalia; stamina sterilia 3, sepalis opposita; stignata pene e basi libera, crassa linearia, excurvata.

Langbian Peaks, 6000 ft. “Flowers green and pinkish or pale crimson.”

Leaves 10-16 cm. long by 4.5-9 cm. broad; petiole 2-4 cm. long. Bracts .5 cm. or less. Peduncles of umbels 2-4 cm. long; pedicels slender, generally 6-10 mm. long. Sepals and petals about 6 mm. long. Most nearly allied to the Indian S. prolifera Roxb., but easily distinguished by the few-umbelled inflorescence.

42. DIANELLA ENSIFOLIA Red.

Dalat, 5,000 ft. “Flowers blue and white; stamens yellow tipped with brown; fruit violet.”
Distrib. Tropical Asia to tropical Australia, Mascarene Is.
43. **Disporum pullum** Salisb.
Langbian Peaks, 6,500 ft. “4 ft. tall. Flowers dull crimson, stamens yellow.”

_Distrib._ Himalayas, Java, Sumatra, China.

**PONTEDERIACEAE.**

44. **Monochoria plantaginea** Kth.
Dran, 3,000-4,000 ft. “Flowers blue.”

_Distrib._ India, Malay Archipelago, China, Japan.

**ERIOCAULACEAE.**

45. **Eriocaulon Hookerianum** Stapf.
Dalat, 5,000 ft. “Flowers white.”

_Distrib._ Borneo and Malay States.

46. **Eriocaulon Brownianum** Mart.
Dalat, 5,000 ft. “In grass swamps. Flowers white.”

_Distrib._ India, Ceylon.

**COMMELINACEAE.**

47. **Commelina nudiflora** L.
Daban, 650 ft; Dran, 3,000-4,000 ft. “Flowers blue.”

_Distrib._ Tropics generally.

48. **Aneilema giganteum** R. Br.
Dran, 3,000-4,000 ft. “Flowers pale violet.”

_Distrib._ Old world tropics.

49. **Floscopa scandens** Lour.
Daban, 650 ft. “Pale purple.”

_Distrib._ India, Malaya, China, Australia.

**AMARYLLIDACEAE.**

50. **Hypoxis aurea** Lour.
Dran, 3,000-4,000 ft. Dalat, 5,000 ft. “In grass-land. Flowers yellow.”

_Distrib._ India, Java, China, Japan.

51. **Curculigo latifolia** Dryand.
Dalat, 5,000 ft. “Flowers yellow.”

_Distrib._ Burma, Malay Peninsula and Islands.

52. **Crinum asiaticum** L.
Dran, 3,000-4,000 ft. “Flowers deep pink and white.”
Distrib. Tropical India, Ceylon.

**Dioscoreaceae.**

53. **Dioscorea laurifolia** Wall.
Dalat, 5,000 ft. "Flowers green."

Distrib. Penang.

**Cyperaceae.**

54. **Mariscus sieberianus** Nees.
Dran, 3,000-4,000 ft.

Distrib. Warm regions of Old World.

55. **Timbristylis nigrobrunnea** Thw.
Dalat, 5,000 ft. "Brown with yellow inflorescence."

Distrib. India, Ceylon, Malay Peninsula.

56. **Kyllinga monocephala** Rothb.
Dran, 3,000-4,000 ft. "White."

Distrib. Tropical and subtropical regions of Old World.

57. **Scleria chinensis** Kth.
Dran, 3,000-4,000 ft. "Fruits white."

Distrib. China, Malaya, North Australia.

**Gramineae.**

58. **Panicum montanum** Roxb.
Dran, 3,000-4,000 ft.

Distrib. India, Malaya, China.

59. **Axonopus semialatus** Hook. fil.
Dalat, 5,000 ft. "Brown."

Distrib. India, Philippines, China, Australia, Mauritius, S. Africa.

60. **Thysanolaena agrostis** Nees.
Dran, 3,000-4,000 ft.

Distrib. India, Malaya, South China, Mauritius.

**Dicotyledons.**

**Polypetalae.**

by

**Edmund G. Baker, F.L.S.**

**Ranunculaceae.**

61. **Anemone sumatrana** De Vriese.
Langbian Peaks, 6,000-7,000 ft. "White, centre green, stamens"
yellow. Leaves pale and dark green."

Distrib. Sumatra.

**MENISPERMACEAE.**

62. **Cissampelos Pareira** L.

Dran, 3,000–4,000 ft. "Flowers pale greenish."

Distrib. Widely distributed.

**BERBERIDACEAE.**

63. **Mahonia Klossii** Bak. fil., sp. nov.


Langbian Peaks, 6,500 ft.


Allied to *M. nepaulensis* D.C., *M. japonica* D.C., and *M. conferta* Takeda.

Differs from *M. annamica* Gagnep., in the number of leaflets, etc.

**CAPPARIDACEAE.**

64. **Capparis grandiflora** Wall, var. **ANAMENSIS** Bak. fil., var. nov.

*Rami cinereo-pubescentes spinosi, spinis uncinatis brevibus. Folia ovata vel elliptico-ovata 2.0–3.5 cm. longa, 15–20 mm. lata, petiolo ± 5 mm. longo suffulta. Flores solitarii, majusculi. Ovarium cinereo-pubescent, anguste oblongum.

Tour Cham. "Flowers pale yellow with a crimson or orange patch."

The species is described in the *Flora of British India* as having a glabrous ovary.

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65. *Capparis horrida* L.

Tour Cham. “Crimson to purple.”

*Distrib.* Widely distributed.

66. *Capparis corymbosa* Lam.

Tour Cham. “Yellow-white.”

It is with considerable hesitation that I venture to refer this plant to the above African species, but it presents all the leading characteristics, namely, the branches have the short spines, the flowers are in fascicles, the buds globose and glabrous or nearly so, and the ovary is ovoid, glabrous and the stigma minute.

67. *Nieuhofia decandra* Gagnep.

Tour Cham. “Greenish white.”

*Distrib.* Cambodia, Siam.

**VIOLACEAE.**

68. *Viola annamensis* Bak. fil., *sp. nov.*


Dalat, 5,000 ft. “Flowers pale violet, lip white streaked with dark violet.”

A plant with glabrous glaucous foliage and rather small flowers with a short saccate spur. The petioles are slender.

Allied in some respects to *V. serpens* Wall.

69. *Viola serpens* Wall.

Langbian Peaks, 6,000–6,500 ft. “White, lip streaked with violet; other petals faintly veined or tinged with violet.”

*Distrib.* India.

70. *Viola distans* Wall.

Dalat, 5,000 ft. “Pale violet with darker violet blotches and reticulations.”

JOURN. NAT. HIST. SOC. SIAM.
Distrib. India.

**PORTULACACEÆ.**

71. *Portulaca oleracea* L.
Dran, 3,000–4,000 ft. “Flowers yellow, stem pink, succulent.”
Distrib. Widely distributed.

**HYPERICACEÆ.**

72. *Hypericum japonicum* L.
Dran, 3,000–4,000 ft. Dalat, 5,000 ft. “Flowers yellow.”
Distrib. Widely distributed.

**MALVACEÆ.**

73. *Sida acuta* Burm.
Dran, 3,000–4,000 ft. “Apricot yellow.”
Distrib. Widely distributed.

74. *Urena lobata* L.
Dran, 3,000–4,000 ft. “Flowers with pink centre, carmine.”
Distrib. Widely distributed in the Tropics.

75. *Hibiscus sagittifolius* Kurz.
Tambou, 2,700 ft. “Carmine. In tall grass swamps.” A form of this species.
Distrib. Cochin-China, Cambodia, Laos, Siam.

**STERCULIACEÆ.**

76. *Helicteres hirsuta* Lour.
Dran, 3,000–4,000 ft.
Distrib. Cochin-China, Tonkin, Annam, Laos, Java, Philippines, &c.

**TILIACEÆ.**

77. *Triumphetta pseudocana* Sprague & Craib.
Dran, 3,000–4,000 ft. “Yellow.”
Distrib. Siam.

**RUTACEÆ.**

78. *Evodia triphylla* D. C.
Dalat, 5,000 ft.
Distrib. Widely distributed.
BALSAMINACEÆ.

79. Impatiens protracta Hook. fil.
Dran, 3,000-4,000 ft. A herb with opposite leaves and with purplish red flowers in the axils of the leaves.
Lian Khanh Falls, 3,000 ft. “Flowers bluish red.” Dalat.
In wet grass land. “Flowers maroon red.”
The above differ in size and colour of flowers but do not seem specifically separable.
Distrib. Annam.

AMPELIDACEÆ.

80. Tetragastigma planicaule Gagnep., var. annemensis Bak. fil., var. nov.
Cirrhosum scandens. Caulis glaber. Folia saepissime 4 foliolata, foliolis elliptico-lanceolatis margin serratis supra glabras penninervis apice subacuminatis 9-13 cm. longis, 3-4.5 cm. latis longiuscula petiolulatis petiolulis 2-4 cm. longis, petiole communi 7-10 cm. longo suffulta. Inflorescentia composita, multiflora, laxa, corymbosa. Flores feminici. Calyx brevis, papillosus. Petala ± 4 mm. longa, extus sublenta minute papillosa, lanceolata. Ovarium conicum, stylo brevissimo, stigmate dilatato 4-lobato. Fructus ignotus.

Langbian Peaks, 6,000 ft. A scandent shrub with usually 4-foliolate leaves and a lax corymbose cyme.
I have carefully compared this with the figure of Vitis planicaulis Hook. fil., Bot. Mag., t. 5685. The plant from Annam differs more particularly in having a much laxer broader inflorescence, and the leaves are only 4-foliolate.

81. Leea coccinea Planch.
Dran, 3,000-4,000 ft. “Stem, buds, edges and base of leaves red.”
Distrib. Burma.

ANACARDIACEÆ.

82. Buchanania siamensis Miq.
Tour Cham. “Flowers greenish white.”
Distrib. Siam.
ON PLANTS FROM ANNAM.

LEGUMINOSÆ.

83. URARIA LAGOPOIDES D. C.
Dran. "Pale purple."
Distrib. Malaya, India, China, Polynesia, N. Australia.

84. URARIA CRINITA D. C.
Daban, 650 ft. "Blackish."
Distrib. India, China, Malaya, Siam.

85. CLITORIA TERNATEA L.
Tour Cham. "Purplish blue."
Distrib. Widely distributed in the Tropics.

86. DESMODIUM OVALIFOLIUM Wall.
Dran, 3,000–4,000 ft. "Shrub, purplish red." Fruit required to confirm this identification.
Distrib. India.

87. PITHECOLOBIUM CYPPEARIA Benth.
Dalat, 5,000 ft. "Tree. Flowers greenish white."
Distrib. Tenasserim, Penang, Malacca, Malay Isles, China.

ROSACEÆ.

88. RUBUS (IDEOBATUS) Klossi Bak. fil., sp. nov.
Caulé fruticosi, glauci vel subglauci, glabri. Rami aculeis a basi dilatata subrectis armati, aculeis majoribus 8–9 mm longis. Folia pinnata 9–10 cm. longa, foliolis 8–11 ellipticis vel ovatis, margine serratis 2–3 cm. longis, 1–2 cm. latis, subitus incanis nervis lateralisibus subitus prominentibus supra glabris, petiolulis brevissimis, foliolis terminalibus majoribus. Stipulae inaequilaterali lanceolatae. Inflorescentia foliis brevior. Flores parvisculi, glomerati. Calyx in toto 5 mm. longus, extus incanotomentosus, lobis acuminitatis. Petala pallide rosea, obovata, unguiculata cum ungue 4 mm. longa. Fructus ignotus.
Dran, 3,000–4,000 ft. "Flowers pale pink." A plant with pinnate leaves, with leaflets incanous below and clusters of small flowers, allied to R. trijugus Focke, and R. rosaefolius Sm.

89. RUBUS ANNAMENSIS Card. (description).
Langbian Peaks, 6,000–6,500 ft. A plant with palmately lobed leaves tomentose below, allied to R. glomeratus Blume.
Distrib. Annam.
90. **Prunus occidentalis** Sw.
Langbian Peaks, 6,500–7,000 ft. "White perfumed shrub or small tree."
*Distrib.* Widely distributed.

**Saxifragaceae.**

91. **Drosera lunata** Ham.
Dalat, 5,000 ft. "Flowers white. In open grass-land."
*Distrib.* Widely distributed.

92. **Drosera burmanni** Vahl.
Dalat, 5,000 ft. "In wet grass-land. Flowers crimson. Pitchers greenish red. Leaves and stem red-green."
*Distrib.* Widely distributed.

**Crassulaceae.**

93. **Kalanchoe annamica** Gagnep.
Tour Cham. "Yellow."
*Distrib.* Annam.

**Myrtaceae.**

94. **Rhodomyrtus tomentosus** Ait.
Djiring, 3,000 ft. "Pink."
*Distrib.* Widely distributed in Tropical Asia.

**Melastomaceae.**

95. **Osbeckia chinensis** L.
Dalat, 5,000 ft. "Flowers mauve. Growing in grass-land which is burnt yearly."
*Distrib.* Widely distributed.

96. **Melastoma klossii** Bak. fil., sp. nov.
*Species ad M. decemfidum* Roxb. accedens. *Rami* subteretes, fuseohirsuti. *Folia* lanceolata vel oblongo-lanceolata, supra laevia vix strigillosa, subtus pallidiora, apice acuta vel subacuminata, saepius 5–nervia, lamina 6–10 cm. longa, 2.5–3.5 cm. lata, petiolo hirsuto 6–9 mm. longo suffulta. *Flores* 5–meri, saepissime terni. *Calyx* setis subulatis hirsutus, calycis dentibus lineari–lanceolatiatis tubo brevioribus. *Petalae* inaequilaterali obovata 23–25 mm. longa. *Stamina* valde inaequalia, antherae lineari–subulatae, apice uniporoseae, loculis undulatis, majoris infra loculos connectivo producto et...
antice bicalcarato. *Oeurium* superne pilis longis obtectum ad calyceum plus minus adnatum.

Dalat, 5,000 ft. "In scrub at edge of forest."

Noticeable on account of the calyx being densely covered and the segments being narrow. The flowers are generally in threes.

The anthers of the larger stamens are 10 mm. long, those of the smaller 8 mm. long.

I have carefully compared it with specimens of *M. decemf fidum* Roxb., collected by W. Jack on Penang Island. The flowers of *M. Klossii* are smaller and generally in threes, whilst those of *M. decemf fidum* are solitary or subsolitary.

97. *Melastoma candidum* Don.
Dran, 3,000-4,000 ft. "Pale purplish pink."
Distrib. Widely distributed.

Lian Khanh Falls, 3,000 ft. Dran, 3,000-4,000 ft.
Distrib. Widely distributed.

Dran, 3,000-4,000 ft. "Flowers yellow."
Distrib. Widely distributed.

100. *Begonia langbianensis* Bak. fil., sp. nov.

Langbian Peaks, 7,000 ft. "Leaves green, stems and fruit red." A plant allied to *B. luciniata* Roxb., with green leaves and
red stem. The leaves are palmately 5–7-lobed to about the middle, the lobes being themselves somewhat lobed. The fruiting peduncles are long, the capsule 3-alaate, one wing being much longer than the others. It probably belongs to the section *Platycentrum*, but flowers are absent.

**GAMOPETALÆ.**

**CAPRIFOLIACEÆ TO LABIATÆ.**

**BY**

**DR. H. F. WERNHAM.**

**CAPRIFOLIACEÆ.**

101. **LONICERA MACRANTHA** Don.

Arbre Broyé, 5,400 ft. “Flowers white to yellow.”

*Distrib.* India, China.

**RUBIACEÆ.**

102. **ARGOSTEMMA BOBRAGINEUM** Blume.

Dalat, 5,000 ft. “Stamens yellow.”

*Distrib.* Malaya.

103. **HEDYOTIS EQUISETIFORMIS** Wernham, sp. nov.

*Herba* humilissima inter gramina florens. *Caules* graciles altiusculæ longitudinaliter canaliculati glabri, basi subhignosi sparse ramosi, basimque versus cortice subargenteo stipularum necnon vaginae onusti reliquis. *Folia* pro rata sessilia firmiusculæ pergamenæ angustissimæ lanceolata apicem versus leniæ necnon conspicue acuminatissima atque acutissima, utrinque glabra; *venae* subtus prominentissimæ laterales valde obliquae utrinque 2; stipulacæ infra in vaginam tardius cohaerentes tumidiusculam persistentem insuper in setam tenuissimam necnon-elongatam productæ quisque interpetiolaris. *Flores* minimi in cymulis trichotomis paucifloris umbellatis dispositi laxiusculis axillariibus; *pedunculi* tenues foliis multo breviores; *bracteae* inconspicuae saepius breves oblongo-lanceolatae. *Calyx* infundibularis lobis lanceolatis obtusis. *Corolla* anguste infundibularis lobis 5 patentibus.

Dalat, 5,000 ft. “Violet-white. In grass-land.” A delicate little herb, branched from the base and sparsely branched above, 20–30 cm. in height. It is allied to the group with pedunculate in-
ON PLANTS FROM ANNAM.

Florescences, of which *H. vestita* is the principal example; but this new species is distinct in its delicate habit, very narrow leaves, and persistent stipular cup-like sheaths, the latter producing an appearance in the older nodes that has suggested the specific name. The nearest allies are, apparently, the Chinese *H. loganioides* Benth., and *H. Vachellii* Benth., both much coarser plants with large broad leaves.

Leaves 5–6 cm. × 5–8 mm.; sheath of *stipules* about 2 mm. deep, the solitary *seta* 5–7 mm. long. Primary peduncle not more than 1.5 cm. long. The whole flower is barely 2 mm. in length at maturity.

104. **OLDENLANDIA SUBTILIOR** Wernham, sp. nov.


Lian Khanh Falls, 3,000 ft. “Pink.”

A delicate little herb, 20–30 cm. high, very sparingly branch- ed, with long internodes, and leaves (2 cm. long at most) and stems extremely slender. The setaceous *stipules* are as much as 3 mm. in length. *Pedicels* 1–1.8 cm. *Calyx*-lobes nearly 2 mm., *ovary* about 1 mm. long. *Corolla* 3–4 mm. long.

Allied to *O. Stocksii* from Malabar, but readily distinguished by the small and differently shaped flowers.

105. **OPHIORHIZA HARRISIANA** Heyne.

Dran, 3,000–4,000 ft. “White.”

*Distrib.* India, Malaya.

106. **MUSSAENDA PUBESCENS** Ait.

Dalat, 5,000 ft. Lian Khanh Falls, 3,000 ft.

“Flowers orange-yellow, foliaceous *calyx*-segments pale yellow.”

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107. **Mussaenda dranensis** Wernham, sp. nov.

Verisimiliter *frutex* ramulis glabris cortice striato in siccatate castaneo-brunneo onustis conspicue sparsiusculae lenticellatis gracilibus subteretibus. *Folia* inter minora pargamacea ellitica basi acuta apice acuminata acutissima, nisi subitus in venis primariis minute puberulo-strigillosa glabra, lateralibus utrinque ca. 5; *petiolus* gracilis minute strigilosus; *stipulae* fugaces. *Flores* inter minores in cymis densiusculis corymbosis dispositis compositis folii subaequilongis; *bracteae* parvae inconspicue subulate. *Calycis* limbus dentibus deltoideis acutissimis brevissimis onustis uno lobo nonnnquam in lami nam petaloidiaem expanso suborbicularem basi acutissimam petiolo gracillimo, apice nec acuminatam necnon acutam. *Corolla* pro genere inter minimas angustissima basin versus fere filamentosa, extus minute strigillosa limbo angusto, lobis triangularibus subacutis.

Dran, 3,000-4,000 ft. “Flowers orange; foliaceous calyx-lobes yallowish white.”

*Leaves* 8-10 cm. x 3-4 cm.; *petiole*, less than 2 cm. *Calyx*-teeth barely 1 mm. long, the petaloid lobe about 5 cm. x 3·5 cm. with stalk barely 1 cm. long.

This species is related to *M. variolosa* Wall., differing in the indumentum of stem and leaves, and in the shape of the latter, and specially distinguished by the extremely slender corolla, and the very inconspicuous calyx-lobes.

108. **Pavetta tomentosa** Smith.

Dran, 3,000-4,000 ft. “Flowers white. Small shrub.”

*Distrib.* India, Malaya, South China, North Australia.

109. **Morinda polynoeura** Miq., var. *aspera* Wernham, var. nov.

*Ramuli* densiusculae scabrello-puberuli; *folia* matura utrinque scabridula.

Dran, 3,000-4,000 ft. “Flowers white.”

*Distrib.* This species has been recorded hitherto only from Java. The variety resembles the type closely in all respects save the indumentum.

110. **Prismatomeris albidiﬂora Thw.**
Dalat, 5,000 ft. “White; shrub.”
*Distrib.* India and Malaya.

111. **Psychotria montana** King & Gamble.
Dalat, 5,000 ft. “Shrub. Flowers greenish-white.”
*Distrib.* Ind. Or. and Malaya.

112. **Psychotria Bodenii** Wernham, sp. nov.


Dalat, 5,000 ft. “Flowers white. A shrub.”

*Leaves* 5–10 cm. x 1.5–2.8 cm., secondary veins up to 10 or 11 pairs; *petiolus* rarely exceeding 1 cm. in length; *stipulae* consisting of a sheath 2–3 mm. deep, with two prong-like projections, more or less setaceus, above, 5–6 mm. long. The inflorescence, a compound cymose umbel, measures about 4 cm. in diameter, the setaceus bracts 2 mm. at most in length, these being at the apex of the primary peduncles rather more than 1 cm. long. The whole *flower* is barely 3 mm. long; *calyx* 1 mm.; *corolla-tube* 2–2.5 mm., lobes rather more than 1 mm. long.

This species has undoubted relationship to the Indian *P. symplocifolia* Kurz, but it is readily distinguished by the leaf-characters and the stipules, alone.

113. **Psychotria langbianensis** Wernham, sp. nov.

*Frutex* ramulis gracilisculis diutius dense ﬂavo-pubescentibus. *Folia* internodia multo excedentia ﬁrme papyracea, anguste elliptica utrinque aequaliter leniterque acuminata apice tamen non-
nunquam caudato-acuminata acuta, supra glabra subitus in venis
tenuibus etsi manifestis presertim centrali densiuscule pilis flavis
onustis, laterialibusque primaris crebrisiusculis (utrinque circa decem);
petiolus pro rata validiusculus brevis densiuscule pubescens basin
versus plus minus inflatus; stipulae longiuscule vaginantes insuper
2 in lobis vaginam subaequantibus divisse lanceolatis submembran-
aceae dorso carina prominente centrali onustae. Flores in cymulis
dispositi trichotomis subterminalibus foliis multo brevioribus, ramulis
dense flavo-puberulis, bracteis parvis setaceis pedunculis brevibus:
Flores inter minimos, albi. Calyx compansilatus cum ovario extus
densissime adpressae flavo-pubescentes, lobis late triangularibus
obtusis; corolla tubus brevis neon latus, lobi patentes anguste
deltoido-lanceolati apice inflexo. Antherae exsertae.

Dalat, 5,000 ft. "White. Shrub."

Leaves 5–9 cm. × 1.3–2.5 cm., with petiolo not exceeding
8 mm. in length. Sheath of stipules 2–3 mm. deep, the upper lobes
about the same in length. Cyme 3–4 cm. in width, the primary
peduncles about 1 cm. long. Calyx about 1.5 mm. deep, the corolla-
tube rather more than 2 mm. long and nearly the same in width at
the mouth. Anthers about 6 mm. long.

This species is allied to P. arborea Ridley, of Java and
Sumatra, from which it may be readily distinguished by the leaf
characters—texture, indumentum, and venation—alone.

114. LASIANTHUS WRAYI King & Gamble.
Dalat, 5,000 ft. "Small tree; flowers white."

115. LASIANTHUS DALATENSIS Wernham, sp. nov.
Frutex vel arbore parva nisi stipulis neonon corollis glaberra
polita, ramulis subteretibus rugosulis gracilibus laevissimis. Folia
opposita utrinque glaberra crassiuscule pergamaecae elliptico-
lanceolata saepius longe caudato-acuminata apice neonon basi acuta
breviuscule petiolata; venae primarie presertim subitus conspicue
prominentes, laterales utrinque 7–9, reticulo interveniente manifeste
transverso; stipulae subcoriaceae conevae lanceolatae acuminate
dorso dense grisco-hirsutae. Flores minimi in cymulis alaribus con-
gestis sessilibus dispositi paucifloris. Calyx latiuscule lobatus limbo brevi; corollae tubus cylindraceus basi paullo inflatus glaber, lobi breviter oblongi apice obtusi supra dense pulveruloento-puberuli.

Dalat, 5,000 ft. “Shrub or small tree. Crimson to pink and ultimately white.”

Leaves 9–16 cm. × 2.5–4.5 cm.; petiole 1 cm. long at most. Stipules barely 5 mm. long before falling. Inflorescence scarcely 1.5 cm. in diameter, about equalling the leaf-stalks. Calyx about 1 mm. deep. Corolla-tube nearly 4 mm. long, lobes 1.5 mm long.

Related to the Malayan L. constrictus, but readily distinguished by the leaf-shape and venation.

116. Paederia tomentosa Blume.
Dran, 3,000–4,000 ft. “White, centre crimson with pale violet hairs; buds greyish-mauve.”

Distrib. India, and Eastern Asia generally.

CAMPANULACEÆ.

117. Lobelia trigona Roxb.
Lian Khanh Falls, 3,000 ft. “Flowers white and violet.”

Distrib. India (Eastern) and Java.

MONOTROPACEÆ.

118. Monotropa uniflora L.
Dalat, 5,000 ft. “Growing in clumps on the ground. Waxy bluish-white.”

Distrib. Himalayan region, China, Japan, N. America.

OLEACEÆ.

119. Jasminum annamensis Wernham, sp. nov.
Djiring, 3,000 ft. "Flowers white."

Leaves about 6 cm. x 4 cm., with stalk up to 1 cm. in length. Branches of inflorescence (exclusive of corolla) about 5 cm. long, with a pair of small leaves close under the base of the inflorescence, Calyx-tube 3–4 mm. deep, the awl-shaped lobes 6–7 mm. long, rarely more. Corolla-tube 1.7 cm. or rather longer, lobes 1 cm. long, barely 5 mm. broad.

Allied to J. pubescens Willd., this species is readily distinguished by the smaller flowers, and the relatively much narrower corolla-lobes.

**APOCYNACEAE.**

120. **Carissa carandas** L.

Tour Cham, "White, scented." Dalat, 5,000 ft. "Flowers blue, leaves purple-brown."

*Distri*.. India and Malaya.

121. **Rauwolfia (Ophionyson) Serpentinum** Benth.

Dran, 3,000–4,000 ft. "Shrub. Flowers white, buds dull pale crimson."

*Distri*.. Eastern India, Malaya.

**LOGANIACEAE.**

122. **Gartnergia vinea** Hook. fil.

Dalat, 5,000 ft. "White, tipped pink. Small tree."

*Distri*.. Malay Peninsula.

**GENTIANACEAE.**

123. **Gentiana quadrifaria** Blume.

Langbian Peaks, 6,000–6,500 ft. "Flowers blue and yellow."

Dalat, 5,000 ft. "Blue. In open grass-land."

*Distri*.. E. India, China, and Malaya.

**CONVOLVULACEAE.**

124. **Evolvulus alsinoides** L.

Tour Cham. "Blue."

*Distri*.. Everywhere in the tropics.

125. **Ipomaea obscura** Ker.

Tour Cham. "Yellow."

*Distri*.. Old World Tropics.

**JOURN. NAT. HIST. SOC. SIAM.**
SOLANACEÆ.

126. Lycopersicum Esculentum Mill.
Dran, 3,000-4,000 ft. "Flowers and fruit yellow."
Distrib. Native of the warmer parts of America; long introduced into most other warm and temperate countries, where it is cultivated for the sake of its fruit—the Tomato of commerce.

127. Solanum nigrum L.
Dran, 3,000-4,000 ft. "Flowers white, and stamens yellow."
Distrib. Ubiquitous.

128. Solanum Indicum L.
Dran, 3,000-4,000 ft. "Purple, stamens yellow."
Distrib. India, Malaya, China to Philippine Islands.

129. Datura Fastuosa L.
Tour Cham. "White."
Distrib. India, tropical Eastern Asia, tropical Africa. In America probably not native.

SCROPHULARIACEÆ.

130. Torenia Asiatica L.
Dran, 3,000-4,000 ft. "Violet-blue; edge of lip and entire throat deep violet."
Distrib. Tropical Asia.

131. Vandellia pedunculata Benth.
Dran, 3,000-4,000 ft. "White or pale violet."
Distrib. India, Ceylon, Malay Peninsula.

132. Striga Lutea L.
Dran, 3,000-4,000 ft. "Yellow."
Distrib. Asia and warmer parts of Africa.

133. Sophra delphinifolia G. Don.
Dalat, 5,000 ft. "In open grass-land. Flowers primrose-yellow."
Distrib. Eastern India and Ceylon.

BIGNONIACEÆ.

134. Dolichandrone falcata Seem.
Tour Cham. "Pinkish white."
Distrib. India.

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135. VERBENA OFFICINALIS L.
Dran, 3,000–4,000 ft. "Pale violet."
Distrib. World-wide.

136. CONGEA TOMENTOSA Roxb.
Daban, 650 ft. "Greyish lilac bracts: very large."
Distrib. India, Burma, Siam.

LABIATÆ.

137. ACROCEPHALUS KLOSSII, sp. nov.

Lian Khauh Falls, 3,000 ft. "Flowers whitish and pink."
A straggling and naked-looking plant. *Leaves* to 2.5 cm. long and 8 mm. broad, with *petiole* about 5 mm. long. *Heads* 1–2 cm. long, about 8 mm. wide. *Bracts* at base 8 mm. × 4 mm. *Calyx* 2 mm. in greatest depth. *Corolla*-tube and lips about 1 mm. each in length.

In its floral characters this species appears to be related to the African *A. cylindraceus* Oliv., but it is quite distinct in habit, also in size and shape of the leaves.

138. SCUTELLARIA DISCOLOR Colebr.
Dran, 3,000–4,000 ft. "Pale blue, lip whitish."
Distrib. India, Burma, Malaya.

139. SCUTELLARIA LANGBIANENSIS Wernham, sp. nov.
*Herba* erecta e basi ramosa lignosa caulibus suberetibus circiter bispithameis gracilibus simplicibus minute necon dense puberulis. *Folia* inter minora tenuiter membranaceo-papyraceae elliptica utrinque nisi paucis in *venis* distantibus sparse strigosis glabrista in siccitate lavi-grisea, *petiole* gracillimo necon longo
velut caules dense minutiuncule puberula. *Flores* inter minores terminali in racemo dispositi internodis conspicuis, *pedicellis* brevibus ebracteolatis. *Calyx* subcupularis ore hiane tumidiusculus venosus membranaceus; *corolla* parva inconspicua infra tubo temissimo longitudinis toti circa dimidium occupante, insuper plus minus subito dilatata.

Langbian Peaks, 6,500 ft.

The type-specimen consists of two shoots about 30 cm. long, joined at the base, from which fibrous roots spring. The stem is less than 3 mm. in the thickest part. *Leaves* about 6 cm. × 2.5 cm. at most, with stalk as much as 1 cm. in length. *Pedicels* 5 mm. long. The narrow, almost filamentous, lower part of the *corolla*-tube about 1 cm. in length; the upper part rather shorter, about 5 mm. wide, with lips sub-equal, about 5 mm.

This species is readily distinguished by the small leaves, with very few and distant teeth, eneate base, and slender stalks.

140. **LEUCAS ASPER A** Sprengel.

Tour Cham.

*Distrib.* Mauritius, India, Java, Philippine Islands.

**COMPOSITÆ.**

*BY S. MOORE, B.Sc.*

141. **VERNONIA (§ XIPHOLEPIS) ANNAMENSIS** S. Moore, sp. nov.


Le Bosquet, 5,000 ft.
Stem subterete, 2 mm. thick, really leafy from the bottom, but a few of the lowest leaves have been shed. Leaves up to 3 x 1 cm., but usually somewhat smaller, drying greyish, the veining prominent on their underside. Inflorescences 2-2.5 x 2.5-3 cm., the heads in the axils of leaves reduced to about 1 cm. more or less in length. Peduncles 3-6 mm. long, tomentose. Involucre 12 x 12 mm.; outermost leaves about 2-3 mm. long, intermediate 4-9 mm., innermost 10 mm. long. Corollas sparsely papillose with a narrowly infundibular tube 6.5 mm. long, double the length of the linear lobes. Style-arms 2.5 mm. long. Achenes 2.5 mm., pappus 6 mm. long.

Affinity with V. bracteata Wall.; differing chiefly in the lowly habit, smaller heads with fewer florets, narrower achenes and shorter pappus.

142. VERNONIA (§ XIPHOLEPTIS) DRANENSIS S. Moore, sp. nov.


Dran, 3,000-4,000 ft.

Probably a tall shrub, the specimens about two spans in height. Leaves 9-13 x 1.5-2.3 cm., grey when dry; midrib prominent on the lower side but thin; reticulation well seen on both faces; petioles 2 mm. long, broad, excavated on the upper side. Panicles 10-20 x 4-5 cm., their linear or subulate bracts 5 mm. more or less in length, at most 1 cm. Involucres 8 x 7 mm.; leaves of the outer two rows 2-3 mm. long, of the middle rows 4-6 mm., of the innermost row 7 mm., all pale straw with a green tip. Corollas infundibular
with pronounced narrowing in the lower half, sparsely papillos, including the 2 mm. long lobes, 8 mm. in length. *Style-arms* 2 mm. long. *Achenes* 2 mm. long; pappus 7.5 mm. with the short outer hairs about .5 mm. long.

Near the last, but quite different in habit, foliage and heads.

143. **Elephantopus scaber** L.

Dran, 3,000–4,000 ft.

*Distr.* A tropical weed.

144. **Ageratum conyzoides** L.

Daban, 650 ft.

*Distr.* A weed in both hemispheres.

145. **Dichrocephala latifolia** D. C.

Dran, 3,000–4,000 ft.

*Distr.* Common in warmer parts of the Old World.

146. **Conyza aegyptiaca** Ait.

Dalat, 5,000 ft.

*Distr.* Asia, Australia, Africa.

147. **Blumea glandulosa** D. C.

Tambor, 2,800 ft.

*Distr.* East Asia, Malaya, Tropical Africa.

148. **Blumea laciniata** D. C.

Dalat, 5,000 ft.

*Distr.* India, China, Malaya.

149. **Blumea chinensis** D. C.

Dran, 3,000–4,000 ft.

*Distr.* India, China, Indian Archipelago.

150. **Blumea Klossii** S. Moore, sp. nov.

*Caulis* subteresfoliosus pubescens; *Folia* (superioribus solum-modo visis) petiolata ambitu obovata acuta pinnatifida pag. sup. pubescentia pag. inf. tomento cinereo obtecta segmentis paucis oblongo-ovatis acutis margine denticulatis folia summa immunita sessilia vel subsessilia lineari-lanceolata acuta. *Capitula* inter minora in paniculam laxiusculam foliis majoribus circa aequilongam pubescentem digesta. *Involucrum* anguste campanulati pubescentis phylla exteriora abbreviata lineari-lanceolata interiora linearia acuta.

Annam.

Leaves with a blade 6–8 cm. long, at most 3–4 cm. broad, running out below in a pubescent petiole 2–3 cm. long; lobes 1.5–2 cm. long, but often shorter; younger leaves usually 1.5–2 cm. × 5–8 mm. Panicles 7–8 × 6–7 cm. Peduncles (of individual heads) more or less 5 mm. long, occasionally reaching 1.5 or even almost 2 cm. Bracts linear, more or less 2 mm. in length. Heads in flower 6 × 6 mm. Involucrre with outer leaves more or less 2 mm. long, and inner 5 mm, Corolla of ♀ florets 4 mm. long, their exserted style-arms nearly 2 mm. long, Corolla of ♂ ♀ florets 5 mm. long, its teeth triangular and pilose-ciliate. Androceum half-exserted. Style-arms 1.75 mm. long. Achenes barely 1 mm., setae of pappus 4–4.5 mm. long.

The chief distinctive mark of this species from among its allies is found in the pinnatifid leaves.

151. LAGGERA ALATA Sch. Bip.
Dran, 3,000-4,000 ft.
Distrib. India, China, Malaya, Tropical Africa.

152. PLUCHEA INDICA Less.
Dran, 3,000-4,000 ft.
Distrib. India, Malaya, China.

153. WEDELIA ALBICAULIS S. Moore, sp. nov.
Achenia radii oblonga compressa dorso rotundata necon pauci-costata superne scabriuscula disci linearia. Pappus cyathiformis dentatus incassatus scabriuscula pubescens.

Daban, 650 ft.

Stems striate, with a dirty white cortex, 1.5–2 mm. thick. Leaves mostly 3.5–4.5 cm. long, towards the base 8–12 mm. broad; hispid petioles about 2 mm. long. Peduncles 3–15 mm. long Involucres 8 × 6 mm., the leaves 7 × 2–4 mm. Paleae discoloured, 6.5 mm. in length. Ligules ovate-oblong, 6.5 mm. long. Corolla of disc-florets 4 mm. long. Achenes of the ray 4–4.5 mm. long, (inclusive of the nearly 1 mm. long pappus), and more than 1 mm. broad; of the disc 2.5 × .2 mm., the squamulose pappus being .35 mm. long.

154. BIDENS TRIPARTITA L.

Dalat 5,000 ft.


155. TRIDAX PROCUMBENS L.

Tour Cham.

Distrib. A South American introduction.

156. GYNURA ANNAMENSIS S. Moore, sp. nov.


Dran, 3,000–4,000 ft.

Leaves including the stalklike portion up to 6.5 × 1 cm., but sometimes about 4 cm. × 5 mm. or even less, drying greyish, a few
uppermost linear and about 2 cm. in length. Peduncles usually 10–20 cm. long, slender; proper peduncles usually 1–2 cm. long, with narrow bracts of 2–4 mm. Involucres 8 mm. long, the often carinate leaves 1.25–nearly 2 mm. broad. Corollas with narrowly infundibular tube 8 mm. long, expanding to rather more than 1 mm. under the limb; lobes oblong, obtuse, 2 mm. long. Style-arms 3 mm. in length. Achenes 1.5 mm., pappus 8 mm. long.

157. Ainsliaea pteropoda D.C.

Langbian Leaks, 7,500 ft.
Distrib. India, Malay Peninsula.

158. Gerbera piloselloides Cass.

Dalat, 5,000 ft.
Distrib. India, China, Madagascar, Tropical and South Africa.

159. Lactuca versicolor Sch. Bip.

Dran, 3,000–4,000 ft.; Langbian Peaks, 6,500 ft. A specimen from Daban, 650 ft. with a brown pappus may perhaps be a form of this very variable species.
Distrib. N. Asia, China.

160. Lactuca Klossii S. Moore, sp. nov.


Dran, 3,000–4,000 ft.; Dalat, 5,000 ft.

Stem in its lower part about 2 mm. thick and leafless there or nearly so; branches 1 mm. or less in thickness, their leaves few and far between. Leaves more or less 1 cm. long, sometimes only 5 mm.
or even less, sometimes 2 cm. *Peduncles* (of individual heads) generally 1–2 cm. in length, their bract when present about 1 mm. long. *Involucres* about 7.5 × 4 mm.; outer leaves usually 2–3 × .5–1 mm.; inner 7 × 1.5 mm. *Corollas* 1 cm. long, of which the oblong 5-toothed ligule claims 7 mm. *Achenes* (including the 1.5 mm.-long beak) 6 mm. long, barely .5 mm. broad, much compressed, straw-coloured. *Pappus* 5 mm. long, apparently persistent.

The frequently branching, almost leafless habit, with the strong quadrangular stem and branches, serve to identify this among its nearest allies.

**ASCLEPIADACEAE.**

**By S. Moore.**

161. *Toxocarpus Klossii* S. Moore, sp. nov.


Tour Cham.

*Stems* slender, the young branches much twisted. *Leaves* up to 7 × 2.8 cm., more often about 4.5–6 × 2–2.3 cm., drying greyish, paler below; midrib impressed above, prominent below; side-nerves 4–5 on each half of the leaf, and but little visible on its upper face; petioles stoutish, fulvo-sericeous, 5 mm. or less in length. *Cymes* usually 3–5 cm. long; the peduncle more or less 1 cm. *Pedicels* 1 mm. in length or rather longer. *Flowers* yellow. *Calyx* 2.5 mm. long. *Corolla* with 2 mm. long tube and 6.5 mm. long lobes. *Corona*
.65 mm. long. Pollinia ovoid, about .1 mm. long. Style, including the 1 mm. long arms, 3 mm. in length.

This can be distinguished from T. Hosseusii Schlechter by the more hairy leaves and the smaller flowers with shorter calyx-segments and markedly shorter and relatively broader corolla-lobes; the coronal leaves also are smaller and with a tiny very narrow appendix, and the style is much thinner.

Schlechter has described the style of T. Hosseusii wrongly, thus leading Costantini (Flore Gen. Indo-China, IV. 47) to place the species among those with an entire style, whereas that organ is most clearly biramose.

162. Calotropis gigantea R. Br.

Tour Cham.

Distrib. India to South China and Malay Archipelago.

163. Tylophora dalatensis S. Moore, sp. nov.


Dalat. 5,000 ft.

Leaves mostly 5–7 × 1.7–2.5 cm., green when dry, the reticulum forming a fine network visible only under the lens; petioles 6–9 mm. long. Inflorescence usually 4–5 cm. long, the slender peduncles more or less 2 cm. in length. Cymules minutely bracteate, composed for the most part of 3–5 flowers. Pedicela more or less 1 cm. long. Flowers yellowish green, when moistened about 9 mm. in diameter, the oblong-ovoid buds 4 mm. in length. Calyx-segments 1.5 mm., tube of corolla 1.5 mm. long; corolla lobes 3 × 2.2 mm.
Corona with leaves 6 mm. long. Anthers .25 mm. long. Pollinia ovoid, .15 mm. long. Stigma about 1 mm. in diameter.

Appears from Costantin's clavis (1. c. 106) to come nearest T. Pierreii Cost., differing from it in shape of leaves and short petioles, shorter inflorescences, and smaller flowers with broader calyx segments and coronal leaves united to the stamens throughout except for the gibbous base.

164. HOYA PARASITICA Wall.

Dalat, 5,000 ft.

Distrib. India, Malay Peninsula, Siam, Cochin-China.

ACANTHACEÆ.

BY S. Moore.

165. STROBILANTHES (EUSTROBILANTHES, BRACATEA) SQUALENS

S. Moore, sp. nov.


Daban, 650 ft.

Leaves up to 10 x 5.5 cm., more usually about 8 x 3 cm., sometimes reduced to 6 x 2.5 cm. or even less, grey-green when dry, very scabrous; petioles about 5 mm. long. Spikes on 5–25 mm. long peduncles, up to 3 x 1.5 cm. Bracts mostly about 1.5 cm. long, in the middle 5 mm. wide. Bracteoles only 2.5–3 mm. long. Calyx 7 mm. long. Corolla 14 mm. long; tube barely 2 mm. wide below, in the upper
half about 5 mm.; lobes suborbicular, about $3 \times 3$ mm. Filaments of front stamens 3 mm., of hinder-pair 1 mm. long; anthers obtuse, 1.7–1.9 mm. long. Ovary nearly 2 mm., style 9 mm. long. Capsule $9 \times 2.2$ mm., light brown; seeds barely 2 mm. in diameter.

At sight this is barely distinguishable from the Indo-Burmese S. scaber Nees, as understood by Clarke: the somewhat smaller flowers with greatly reduced filiform bracteoles afford an easy means of identification.

A small specimen from Dran, 3,000–4,000 ft., is conspecific.

166. Strobilanthes (Eustrobilanthes, Nudatæ)

Saltiensis S. Moore, sp. nov.


Langbian Peaks, 6,500 ft.

Leaf apparently about 4 cm. long (top not seen), only 3.5 mm. broad. Peduncles of the flowering heads slender, usually 1–2 cm. long. Pedicels 3–4 mm. Calyx 25–28 mm. long. Corolla 34 mm. long, the narrow portion $8 \times 2$ mm., tube enlarged to 10 mm. wide in the middle and 15 mm. at the throat; lobes $5 \times 5$ mm. Anthers ovate, 1.5 mm. long. Ovary narrowed below, 6 mm., style 20 mm. long. Capsule 18–20 mm. in length, brown. Seeds grey, $4 \times 4$–$4.5$ mm.

A very distinct species, near S. isophyllus T. And., and S. oligocephalus T. And. The narrow leaves and long lobes of the calyx are special features.

The material is incomplete, there being but one leaf, and that not quite entire, as well as only a single corolla, which it has been
thought advisable not to dissect. In spite of this there seems ample warrant for publishing a description,

167. **BLEPHARIS BOERHAAVIA** Pers.

* Tour Cham.*

**Distrib.** East Indies, Tropical and South Africa.

168. **CYSTACANTHUS TURGIDUS** Nichols.

Daban, 650 ft,

**Distrib.** Cochin China.

169. **LEPIDAGATHIS HYALINA** Nees.

* Dran, 3,000–4,000 ft.*

**Distrib.** East Indies, South China.

170. **JUSTICIA PROCUMBENS** Linn.

* Dran, 3,000–4,000 ft.*

**Distrib.** Africa, East Indies, Australia.

* **CYCLACANTHUS,**

Acanthaeearum e tribu Justiciearum genus novum.

Calyx alte 5-partitus, segmentis aequalibus linearibus.


171. **CYCLACANTHUS COCCEINEUS** S. Moore, sp. unica.

Rami sat validi cortice ochraceo obducti prominenter costati foliorum delapsorum cicatricibus prominulis hacatque illae minutir juveniles minuitissime cinnamopubescentes tanlem glabrascentes. *Folia* brevipetiola ovata apice basique obtusa membranacea supra

* Gr. Kuklein, to bend, in allusion to the shape of the corollas.

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gla\'bra subtus se\'ens nervos appresse pubescentia puberul\'ave nec\'non micro\'scope\'pice p\'ustulato-cystolithigera. Flores mediocre\'s subsess\'iles. Bract\'eae line\'a\'res uti in\'flosc\'entiae axis calye\'c\'oque dense glanduln\'oso-pubes\'entes. Caly\'cis segmenta ac\'e\'ti\'u\'scula. Coroll\'ae caly\'ce\'m facile superant\'is tubus extus puberulus. Stamina bre\'vi\'t\'e exserta, ovar\'i\'um oblongo-ovoideum fere glabrum. Stylus elongatus basi pilosulus.

Tour Cham.

Leaves 2–3.5 × 1.3–1.8 cm., when dry, dark above, greyish green below; petioles up to 5 mm. long, minutely pubescent. Axis of the inflorescence reaching nearly 2 cm. in length, more often about 1–1.5 cm., sometimes only 5 mm. long. Bracts about 2 mm. long. Bracteoles not seen. Calyx with segments 6 × .5 mm. Corolla 17 mm. long in the tube, at the base 2.5 mm. wide, this soon reduced to 1.25 mm. hence gradually enlarged to 5 mm. at the throat; upper lip 7 mm. wide at the base, reduced to 1 mm. some distance below the top; lobes of lower lip apparently reflexed, or at least patent, 7 × .5 mm. Filaments flattened, glabrous, 9 mm. long; anthers with oblong, obtuse, 2.5 mm. long, cells. Disk fleshy, .65 mm. high. Ovary 2.5 mm., style 2 cm. long.

This plant has given much trouble, as, while evidently closely allied to several genera, it cannot be included in one of them without enlarging already recognised boundaries. It was at first thought to be referable to Chine\'canthus, but the two-celled anthers exclude it; then it appeared to fit in with Grap\'tophyllum; for although the inflorescence is not that of the well-known G. pict\'um Griff. (G. hortense Nees), the Australian G. E\'ar\'lii F. Muell. has a very similar arrangement of its flowers. But Grap\'tophyllum has, besides two stamens, a couple of staminodes, organs there is no sign of in the plant under notice, though it is undoubtedly its affinity. In the absence of staminodes it agrees with the Papuan Calye\'canthus, but this genus has quite a different corolla.

172. Peristrophe fera var. intermedia Clarke.
Daban, 650 ft.

Distrib. Pegu, Tenasserim.
ON PLANTS FROM ANNAM.

APETALÆ.
BY S. MOORE.

POLYGONACEÆ.
173. POLYGONUM CHINENSE L.
Dran, 3,000—4,000 ft.
_Distrib._ India, China, Japan, Malaya.

174. POLYGONUM STRIGOSUM R. Br.
Dran, 3,000—4,000 ft.
_Distrib._ India, China, Malaya.

PIPERACEÆ.
175. PEPPEROMIA REFLEXA Dietr.
Langbian Peaks, 6,500—7,500 ft.
_Distrib._ East Asia, Malaya, Australia, Africa, America.

NEPENTHACEÆ.
176. NESPENTHES ANAMENSIS Macfarl.
Lian Khanh Falls, 3,000 ft., and Dalat 5,000 ft. "In swampy grass-land. Pitchers yellow to green with crimson or pinkish spots."

The specimens have been compared with authentic material in the Kew Herbarium with which they seem to agree well, except that none of the pitchers have the ciliate wings sometimes found on those of _N. annamensis_. The latter's flowers and fruits were not seen by Macfarlane (Pflanzenreich, 36 Heft (IV. i. i.) p. 39.); the fruits, but not the flowers, can now be described; they are borne in a rather close raceme about 6 cm. in length on about 35 cm. long peduncles, and are fusiform in shape, with oblong-lanceolate, truncate, glabrous, palely-shining, brown valves, varying in length from 12 to 15 mm.

The above naming must obviously be regarded as provisional.
_Distrib._ Annam.

ELAEAGNACEÆ.
177. ELAEAGNUS ANAMENSIS S. Moore, sp. nov.
Ramuli graciles subteretes brunneo-lepidoti mox glabrescentes. _Folia_ petiolata obovato-oblonga obtusa vel obtusissima basi obtusa chartacea supra cito glabra leviterque nitidula subtus arcte brunneo-argenteo lepidota nervis lateralibus utrinque 5—6 supra planis subtus

Langbian Peaks, 6,000 ft.

Apparently a shrub with slender, leafy, brown branches. *Leaves* with the blade 5-7 × 3-4 cm., but sometimes smaller or larger, green or grey-green above and at first covered with small scales which soon disappear, closely scurfy below; petioles usually about 1 cm. in length, closely scurfy. *Pedicels* slender, up to 12 mm. in length, though often shorter. *Perianth* with the adherent portion at first only 2 × 1.5 mm., but rapidly enlarging to 10 × 5 mm.; free portion (including the 4 × 3 mm. lobes) 12 mm. long, 3 mm. wide at the base, and 6.5 mm. under the limb; the lobes with fewer silvery scales on their inner than upon their outer face. *Filaments* 2 mm. long; anthers broadly oblong, obtuse at either end, 1.5 mm. long. *Style* shortly exserted, 11 mm. long. *Fruit* apparently not yet quite ripe, 15 × 7 mm.

In foliage this agrees with the widely diffused *E. latifolia* L.; the longer slender pedicels and the size and the shape of the perianth, both tube and limb, are, points of difference.

*Loranthaceae*.

178. *Loranthus* (*§*Elytranthe) *Dranensis* S. Moore, sp. nov.


Dran, 3,000–4,000 ft.

*Branches* pale-coloured, the oldest 5 mm., the younger 2–3 mm. wide.

*Leaves* with a blade 8.5–12 cm. long, at the middle 3.5–4 cm. broad, grey-green when dry; petioles stoutish, channelled above about 2 cm. long. *Peduncles, 5–7 mm. long, somewhat angular, 3 mm. across, after boiling. Bracts and bracteoles about 1 cm. in length, the former rugulose on the back, reddish brown. Calyx-tube 4 mm. long. Corolla tube (unmoistened) about 3 cm. long, 3 mm. wide below, 5 mm. near the top, pink; lobes 2 cm. long, purple at base, carmine above. *Filaments* (of bud) 7 mm., anthers 5 mm. long. *Berry* ovoid, 10 × 8 mm., brown when ripe.

*L. albicas* Bl. has similar foliage, but slenderer peduncles, smaller bracts and bracteoles and corollas unlike in several respects.

**Balanophoraceae**

179. *Balanophora (Diphora) annamensis* S. Moore, sp. nov.


Dalat, 5,000 ft.; Langbian Peaks, 6,000 ft.

*Rhizome* up to 7 cm. in thickness, sometimes reduced to 3 cm.; pustules dull brown, nearly 3 mm. high and somewhat more in diameter, each with several deep radiating grooves. *Peduncle* short, about 1–1.5 cm. long and some 2 cm. broad; the squamae coriaceae, brown, shining. 3–nearly 4 × 1.5–nearly 2 cm. *Receptacle* & cylindrical, 8 × 4 cm. *Perianth* with flattened 10–14 × 1.5–2 mm. tube and 5 mm. long spreading lobes. *Bracts* 4–5 mm. wide, at the more or less quadrangular top 3 × 3 mm. *Staminal column* 6 mm. long. *Receptacle* &
obovoid-pyriform, 6 cm. long, 2.2 cm. wide, below, 4 cm. above. Spadicles on .75 mm. long stalks, the body twice as long. Ovary .4 mm. long; style barely 1 mm.

The material consists of two specimens, two male and two female, only the latter with the rhizome attached. Nevertheless they are considered to form but one species, and that although the receptacular bracts are broader in one case and a little differently marked on their truncate top; this, however, may perhaps be a matter of age.

Besides the deeply furrowed pustules of the rhizome the chief marks of the species are the quadrangular tuberculate tops of the bracts, the bottle-shaped spadicles and the subsessile ovaries.

*SANTALACEAE.*


Dran, 3,000-4,000 ft.

Agrees with the description in Bull. Mus. Nat. Paris, 1914, p. 399, except that the most advanced fruit, evidently not yet ripe, measures only 5 mm. in length instead of 8-9 mm. Some doubt must therefore attend this determination, especially as M. Lecomte, with one exception, does not give floral measurements.

*Distrib.* Tonkin.

*EUPHORBIACEAE.*


Tour Cham.

*Distrib.* South China, Cochin-China, Borneo.

182. *Ostodes Kerrii* Craib.

Langbian Peaks, 5,000-6,000 ft. “A small tree. Flowers pinkish-white. Stamens pale yellow.”

*Distrib.* Siam.

183. *Homonoia riparia* Lour.

Dabang, 650 ft.

*Distrib.* India, Malay Peninsula, and Malay Archipelago.

*URTIACEAE.*


Dran, 3,000-4,000 ft.
ON PLANTS FROM ANNM.

Distrib. East Asia. Malaya.

**JUGLANACEÆ.**

185. **ENGELHARDTIA SPICATA** Bl.

Langbian Peaks, 6,500 ft.
Distrib. India, South China, Malayan Peninsula and Archipelago.

**CASUARINACEÆ.**

186. **CASUARINA EQUISETIFOLIA** L.

Nhatrang.
Distrib. India (chiefly cultivated) to Australia and Polynesia.

**GYMNOSPERMAE.**

**TAXACEÆ.**

187. **DACRYDIUM ELATUM** Wall.

Le Bosquet, 5,200 ft.
Distrib. Malayan Peninsula and Western Archipelago, Cochin China.

**CRYPTOGAMS**

**BY A. GEPP.**

**PTERIDOPHYTA.**

188. **ADIANTUM KLOSSII** Gepp, sp. nova.

Stipite c. 20 cm. longo ad basin ramentaceo scabro atropurpureo nitido, ramis alternis superne pubescentibus; fronde 12–15 cm. longa, 10–12 cm. lata, deltoideo-ovata triplinata, pinnis infinis obscure pedatis; segmentis alternis subrotundatis sepe dimidiatis interdum late euneatis, 8–10 mm. latis, marginne externo erenulatis, papyraceis firmis glabris inferne glaucescentibus, haud deciduis; venulis flabellatim dispositis furcatis margine cartilagineum attingentibus; soris 3–5 parvis rotundatis contiguis vel confluentibus.

Daban, 650 ft.

An intermediate species allied to *A. flabellulatum* in sori and pubescence but not in habit. It appears to differ from *A. induratum* Christ (Langbian) in its larger frond, pubescent petioles and less opaque segments, from *A. Bonii* Christ (Tonkin) in size, ramification, pubescence and sori, and from Copeland’s two Philippine species, *A. cupreum* and *A. opacum*, in its non-deciduous segments.

189. **SELAGINELLA ATROVIRIDIS** Spring.
Dalat, 5,000 ft.  
*Distrib.* S. India to Formoso.

**BRYOPHYTA.**

190. *Pogonatum aloides* Brid.  
Langbian Peaks, 7,000 ft.; in pine and oak forest.  
*Distrib.* Europe, Asia, Africa.

**LICHENES.**

Langbian Peaks, 6,000 ft.  
*Distrib.* All temperate regions.