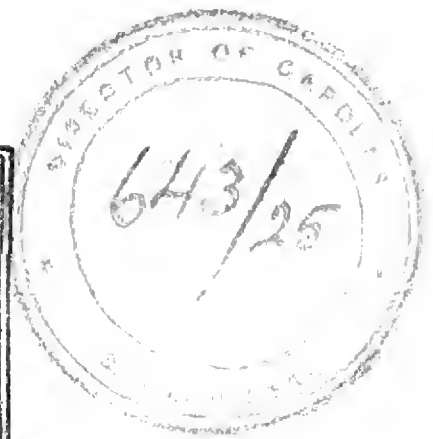


MACARANGA

~~ARICARANGA~~

Light Green

P.C. 140



From Whom

Place

Date

SUBJECT.

Request that arrangements be made to examine Mr. Mohamed Haniff, medically a senior member of the Gardens Staff as required by the Pensions Ordinance.

Connected Papers.

MINUTES.

① Letter from Ag 8 of G No 643 d/d 27. 10. 25

D of G.

If you desire him to appear before a medical Board you should apply to C.S.

Sd J Gray
Ag 4. 140.
25/10. 25

P. C. 140.

notes, I will write to the C.S.

and R. A. Holthorn
2/11/25

No Minutes should be written on this page. A separate half-sheet to
be used if required.

M. Hallettii King ex Hook. F. B. L. V. n. 452.

This is nearly the form state of M. cornuta in the dried state. I have not seen the specimen cited in Hasner's Handb. Peas. King's Collection, but there are many such for M. Hallettii in the botanical herbarium which agree nearly with Hasner's description some of them from Pease, & there are others from the transition from the M. Hallettii to M. cornuta.

M. quadricornis Bailey, New Bull. 1123 p. 307

I have no hesitation in referring this species to M. cornuta. The quadrifid addition (of quadrifid) of the quadrifid form of M. cornuta is typical. There is no difference between it and M. cornuta & they have a narrow range one or two may be about M. cornuta.

M. divergens Muell. Arg. DC. Prodr. X. 2.

This species was described as M. cornuta. From Mueller's description & that of Roxb. G. Hoffmann (Pflanzg. IV 147. VII n. 382) I conclude that it is more or less a form of M. cornuta. Mueller's description is very nearly identical with M. cornuta. Concerning M. tenuifolia M. Arg. & M. variegata as there is no information Mueller gave on M. tenuifolia.

M. Barkleyi Torr. Pap. Meach. Acad. Sci. Phila. 1828. XIX 1434 p. 101. Tab. XXX

The description & plate in which are placed the specimens from Torr. Barkleyi of M. Hallettii are M. Barkleyi. They are M. Barkleyi.

Signed by
Fair Copy

DRAFT

conclusions are as follows:-

Macaranga cornuta Muell. Arg. DC. Prodr. xv. 2. p. 989⁸

= M. triloba ~~Aut~~ sensu auct. pro parte

= M. kulletii King ex Hooker F.B.I. v. p. 452

= M. quadrangia Ridley Kew Bull. 1923 p. 367

= M. Bartlettii Nevill Pap. Phil. Acad. Sci. Arch. & Lett. xix (1434) p. 161.

= M. divergens Muell. Arg. DC. Prodr. xv. 2. p. 989
n. var. xxiii

Macaranga triloba (Bl.) Muell. Arg. DC. Prodr. xv. 2. p. 989

= M. cornuta ~~sensu auct.~~ non Muell. Arg.

Macaranga

? for new

of
M. prunifolia

of name this is the same as M. glauca Sr
is the earlier name.

of

11

? aff. *parabensis*

~~lucida~~

12.8.39

Fronds not dried

Common in B.F. area

Fronds green with sticky yellow granules
2 lobes each lobed with a shallow
subcordate

Seeds black, surrounded in ~~orange~~ pulp then
orange pulp.

Leaves glaucous beneath, light green, with a
hair of ^{rather dense} small dull yellowish hairs at a length
on upper side of leaf at insertion of petiole.
Petiole commonly pubescent. St. pubescent green
Ternstroemia

FS/6

♀
 ♀
 ♀

M. Mur. 32736 Cam. Highlands, Bata Plant. 24.4.37, 3700'
 " 32838 " " " " " 2.4.37
 Corner s.n. Fraser's Hill, 12.8.37
 M. Mur. s.n. Cam. Highlands. April 1937

Yacouanga ? parvencis

Twig finely appressed by hairs when young, soon glabrous, ~~with~~
glabrous

Stipules .8 - 1.6 cm long semi-amplexical, ~~stipule~~ along pointed, thin,
 soon reflexed subpersistent rather compressed, ~~are~~ finely appressed
 hairy along midline on both surfaces, otherwise glabrous.



lamina 12 - 30 x 7 - 20 cm. broadly ovate, ~~reflexed~~ gradually to a
 simple point, base rounded, not cordate margin entire or
~~pro~~ almost so. ~~Dist.~~ with a pair of elliptic, eye-like glands one on
 each side of insertion of petiole on upper side of the blade: with
 numerous yellow gland dots on the underside.

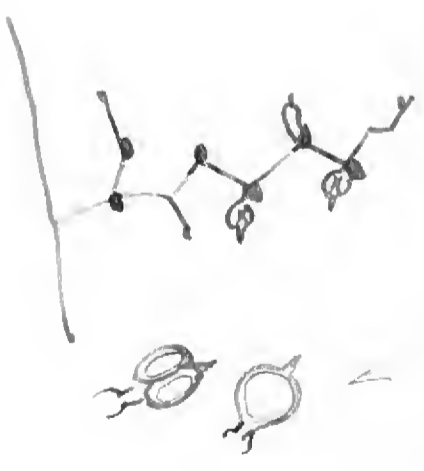
Hairs 8 - 12 p. lateral : 8 - 11 basal. (incl. midrib)

Petiole 5 - ~~14~~ ²² cm. pubescent at first, soon ± glabrous
 inserted 1.5 - 4.5 cm from edge.

Young twigs. densely hairy

J → Female. on the ~~branches~~ ~~twigs~~ ~~leaves~~ ~~the~~ ~~twigs~~ ~~are~~ ~~the~~ ~~leaves~~
 wholly finely appressedly pubescent, with rather zig-zag joints

length 4 - ~~10~~ ¹² cm. long
ped. 1 - 3 ²/₅ cm, glabrous
branches - 5 cm. long, spirally arranged, with ^{very} zig-zag joints
bractlets 3 - 8 mm, spatulate not obscure mucronate, with 2
 large marginal glands side by side on upper side, or one large
 gland only. the underside appressed. pubescent



bract 6 - ~~10~~ ⁹ mm long, like the ~~bract~~ rudimentary leaves with crenate-
 dentate edges & 2 large glands at base on a bract side, the glands
 smaller than those of the bractlets

→ fls. 15 - 30 in a cluster, distinctly stalked, glabrous, with
 3 separate oval-lanceolate perianth segments & 5 - 8 stamens
 the anthers ~~are~~ decelled.



stalks 1.5 mm. long

18010, Henderson Cam. Highl. 5000', 28. 11. 25 M. punctulata
 Bartlett & Holttum 8658, Sch. 1922, Fraser's Hill, det. M. punctulata
 8522

Mal. War 1161, 29. 8. 23. Fraser's Hill, det M. punctulata.

accavanga sp. mountain 31246 Cam. Highlands
 aff punctulata R.K.H. 14.5.36, 47th mile Telompa
 † 4800

in floresc: ^{young in axis of older leaves & new, behind the leaves} persist. covered with glabrous white glandular hairs in fresh
 dense brown pubescent when dry.

length 6 - 18 cm.
peduncle 5 - 20 mm. long, short & cross-section
branches - 6 cm. long, a lower part of node, not branched
 or with short ~~secondary~~ but secondary branches. the
 primary branches numerous & rather irregularly ^{arranged}
 along main axis to form a panicle

bractlets 2 - 4 mm. long ovate, generally acute & often
 the point patent, the upper dorsal bractlets often
 blunt: entire

bracts: as bractlets but rather more lanceolate.

♂ fls. ¹⁰⁻²⁰ in axils, very in axils: very 3 lobed with 2-3 stamens
 glandular internally.

Lamina glaucous beneath ✓
 rather small

Blade 8 - 17 x 5 - 11 cm. : flat, rather acuminate
 distinctly larger than node, base rounded or very oblong, obovate, with
obcordate, obcordate. space near the vein on the under side. There are glands:
large in the axils of the veins and in the axils of the veins.

veins 7-9 for A. prunifolia: 7 basals (incl. midrib)
vein obovate beneath reticulate abundant

stipules 3-7 mm. long, ovate obovate glaucous, very glabrous

young leaf hairy

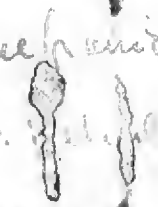
petioles 4 - 4 cm. long, glaucous. From the first: glaucous

Stems solid, glaucous, glaucous: not cut unhairy, solid

All parts glaucous (from the first) except the young lamina &
 the inflowers. Lamina densely woolly at first but soon
glaucous except for the spare hairs along the vein and the
underside of the blade.

in Sabrang
 up to 35 x 20 cm!

But Strongwell
 1432 14632
 Joh. Bahang,
 1.3.28
 det. M. punctulata
 has the long
bractlets and underside
of vein
softly hairy:

+ infl. as male, 4-20 cm long; fl. solitary, 4 mm wide; ^{spaced along the pedicel}  3-8 mm long
 calyx with 2-3 lobes, including superior; ^{2-4, mostly 3} sepals ^{short, concave} ^{resembling}
 ovary 3-4 mm, 3-celled; no ~~stip~~ prominent beak
 yellow glandular otherwise smooth
 fruit: 12-15 mm wide, ^{subglobose} or subrenal, with 3 (or 2 or 1) seeds
 coriaceous, green, ^{slightly} covered with yellow sticky glands or mucus

M. punctulata Gage

- 1. is very similar but differs in ~~...~~
- 2. a tree of lowland swampy forest ^{at lowland}
- 3. always with fistular, ^{in lowland} ^{is inhabited by ants}
- 4. the yellow glands on underside of blade are sunken in epidermis which evidently has quite a different structure
- 5. inflor. has with 6-9 mm long, often with 1-3 cells ^{is irregular}
- 6. of inflorescence has the flowers ^{at the top of} ~~at the top of~~ a long peduncle - & than the fruit are in a head
- 7. the calyx of fl. ^{is nearly} ^{same as} ⁱⁿ ^{the} ^{other}

Can see they are 2 different but very closely allied

species

Compare

M. caladiifolia Becc
M. tenuiramea Bosc. et Hoff.

Mak. II
 Bot. 1884. 46, v. 3.

it is neither of these

may well be this

Macaranga ? tenuifolia

Macaranga - small one from Hawaii. leaves purple beneath

Twigs glabrous, old: occasionally the twigs are pilose with rather long hairs when young

Stipules 1.4 cm. 6 - 12 cm. broad, ovate, serrulate acuminate, decurrent
 lobes ciliate
 glabrous or slightly hairy on the sides when young: persistent, thin, pilose
 with a fine minute gland-dot at base on sides (occasional hairiness possible)

laminae - lobed $\frac{1}{3}$ to $\frac{2}{3}$ of length
 along axis with $\frac{1}{3}$ to $\frac{2}{3}$ of length
 16-20 = $\frac{40}{5} \times \frac{13}{5} = \frac{30}{5}$

or 5-lobed
 in saplings

with stipules 3 cm. long

margin of the stem cordate
 dentate or a round edge
 rather smooth, rather

sapling leaves
 even longer

pubescence in veins moderate, strongly hairy on veins when young
 not gland-dotted or gland-dotted

Petiole 12 - 30 cm. 12 - 25 cm. finely pubescent. → glabrous, or pubescently

marked 2.5 - 5 cm. from edge of blade
 gland-dotted at the apex

Basal. leaf 7-9-10

Lat. veins 4-17 12-17

Young leaves densely hairy - with or without, ± glabrescent

inflow

axillary - glabrous except for glandular punctures

length 10-16 cm. rather shorter than the petioles
 8-24 cm.

peduncle 1.5 - 10 cm.

branches 3-5 2-branched from basal node
 with spread, base minutely

bract 5 - 8 mm. long, ovate - lanceolate, entire or finely serrate

bractlets 3-5 mm. long, with a flattened caudex, identical

in a few teeth at base of caudex minutely brownish or
 or 2 entire in other collection
 1-2 teeth along each side of caudex

Calyx slightly 3-lobed with 1 stamen, anther 3-celled



♀ inflor. glabrous, axillary, much shorter than stem →
 length: 4-8 cm.



ped. ~~2-5~~ 1-5 cm
 branches 5-2.5
 1-2 cm long, only 2 branches (carrying the lowest pair of flower-clusters)

branch as →
 calyx: 3-4 x 2.5-3 mm, sessile (no pedicel) partly pubescent
 capsules with slightly sinuous margins, becoming irregularly 4-5
 lobed when on the fruit develops
 axillary glabrous, smooth 4-5, rarely 3, styles erect
 2 mm long slender

2-12 ♀ fls. in a cluster

Fruit, ca. 1/2" wide smooth save for the yellow-granular
 sticky ~~pubescent~~ powder ^{and} ^{round} ~~round~~ the base of the horns
 4-5 styles persistent

- ? *Macaranga tenaxifolia*
- ! *M. Mollayana* — ant. unhooked, capsules not horned
- ! *M. depressa* — (hairy, ? capsules not horned)

- M. cornuta* differs in
1. → branch & ♀ calyxes glabrous or hairy & gland-dotted only
 2. leaves never purple beneath
 3. stipules purple
 4. hollow ant. unhooked horns
 3. unbranched ♀ inflorescences: or the lowest pair of flower-clusters with scyphoid stalks.

M. triloba

Common Panang "Mahaung"

A small tree to 20' with uneven, open, shabby crown: ~~leaves are~~ ~~inhabit~~ ~~at~~: glabrous
the underside of the leaves finely hairy: stipules 3-2" long, purple or bronze, ~~the~~ with downturned
points pressed against the wings: young leaves often reddish purple beneath for a long time.

Blade 11-12" wide, petiole divided ~~at~~ about $\frac{1}{3}$ its length or less into 3 pointed lobes,
finely veined main, ~~green beneath with yellowish (scarcely pink) veins~~: stalks 2-9" long, ~~green~~

Leaf panicles 5-9" long, dull crimson, much branched, arising ~~or~~ on the axils below
the leaves, ~~the~~ ^{their} stalks $\frac{1}{2}$ -3" long ^{short} flat: bracts green, powdered white, minute, blunt.

Female panicle 3-5" long & wide, ^{with or without} much branched, ~~from the base or within short stalks~~

Fruits 4-5" wide, 2-5 shouldered, rather rose-red, with ^{a patch of} yellow sticky powder on
each shoulder: pulpy with a red juice, unripe fruit with ^a patches of pale green powder on each under shoulder.

seeds black, round, one to a shoulder, thinly covered with reddish purple hairs or bristles for hair

W. Malaysia: very common throughout Malacca.

Compare the following species which may also have 3-lobed leaves. FS/11

long petioles & undersides of leaves glaucous & waxy like white

M. Hosei

Hose's Mahang.

like the White Penang, but -
 leaf blade deeply 3 lobed, not or scarcely petiole
 near or beyond at the base, hooked, finely hairy beneath
 or stipules $\frac{1}{2}$ - $\frac{1}{2}$ " ^{semi-obovate} broad, blunt, contorted, thin, green
 fruits $\frac{1}{2}$ " wide, 2-shouldered, 2-seeded

leaf deeply
 rather with
 (2-3) ~~...~~

Malay Peninsula, Sumatra: rather common in lowland places ~~Malaya~~ ^{Malaya}

This may be mistaken for M. hypoleuca but the rather limp leaves & light green stipules will distinguish it from a distance.

M. Mangayi

very like M. Hosei but the leaf petiole is lobed only to the middle or less deeply. The stipules generally rather upright and without ants in the wings (very solid).

lobed only to the
 basin-like: ? often

Malaya: frequent in swampy forest in the middle summit half of Malaya.

M. Kingii

Devil's Mahang

A sparsely branched shrub or small tree up to 20 ft. tall with stout, not woody
waxy-glaucous stems, and enormous leaves with fringe and fringe of
leaves 10 - 24 " wide, enormous, with 3 - 5 large lobes and
altogether 7 - 8 parts, petiole, yellowish green above, more or less intensely
purple underneath with yellow green veins; stems 8 - 15 " long; stipules
 $\frac{3}{4}$ - $1\frac{1}{2}$ " long, purple brown, hard, pointed with recurved sides, pointing
perpendicularly across the stem like pair of horns, with white foam in the axils
on the underside.

In Malaya: rather rare in swampy forest in Malaya.
 In Malaya: rather rare in swampy forest in Malaya.
 a staked leaf.
 fruits $\frac{1}{2}$ " wide, slightly 2-shouldered, rather common in Malaya.

Signed by
 Fair Copy

DRAFT

This is one of the most remarkable Malayan plants we cannot mistake it from our book. It may be commoner than we supposed.

M. d. canariensis

1/4" wide in sapling? not (obed)
 stalks & veins green red
 sapling leaves

lanceolate, upright
 ± persistent at least
 no near the top of the trunk

A small to medium sized tree 20-70 high
 Verruculose & glaucous
 sup-stalks & underside of leaves of the secondary
 ~~leaves~~
 ~~leaves~~

leaf-blade 3-9" wide, peltate,
 ~~more or less~~
 sometimes with 3 points
 ~~leaves~~
 ~~leaves~~

Fls. 4-8"
 ~~leaves~~
 ~~leaves~~
 ~~leaves~~

Fr. 2" wide, 2-3-ribbed,
 ~~leaves~~
 ~~leaves~~

S. Can. & Mag.
 ~~leaves~~
 ~~leaves~~

The most
 ~~leaves~~
 ~~leaves~~

M. denticulata

tree 15-70 high
 ~~leaves~~
 ~~leaves~~

leaf-blade 3-9" wide, peltate,
 ~~leaves~~
 ~~leaves~~

Inflorescence
 ~~leaves~~
 ~~leaves~~

Fr. 2" wide, 2-ribbed,
 ~~leaves~~
 ~~leaves~~

S. Can. & Mag.
 ~~leaves~~
 ~~leaves~~

The peltate,
 ~~leaves~~
 ~~leaves~~

Macaranga aff. populifolia

This differs from M. populifolia in the following points:-

leaf-blade ovate-cordate, or occasionally ^{narrowly} peltate, the base with ~~5~~ shallowly or deeply cordate, with 5-7 basal veins, ^{apex} acuminate, ~~shiny~~ ^{definitely} coriaceous, ~~dull green~~ ^{the edge faintly} ~~on the~~ to distinctly glandular-denticulate, dull green on the upper side ~~glistening~~; rather yellowish beneath (not glaucous)

Male inflorescences larger ^(in M. populifolia 2.5-4 cm. long, as few cases up to 8 cm long through lengthening of peduncles) ~~4-10~~ ⁵⁻¹² cm. long. bracts oblong lanceolate, 7-12 mm. long & blunt or subacute, entire (in M. populifolia broadly ovate, broader than long, 4-6 mm. long, often crenate-serrate). bracteoles 4-17 mm. long, ~~broader than~~ much longer than broad, ovate-lanceolate, ~~blunt~~ with a long & blunt point, not or scarcely serrate at the base (in M. populifolia 2.5 ~~4~~ mm. long, broader than long, ovate, deeply serrate at the base). male flowers with 2 stamens, occasionally 1 or 3, distinctly stalked (male flowers with 1, occasionally 2, stamens in M. populifolia, sessile or subsessile)

Female inflorescences 4-9 cm. long, larger, ^{unbranched.} ~~unbranched.~~

Fruit

Fruit 9-13 mm. wide, larger; with short broad, finely pruinose styles 1.5 mm. long, 1 mm. broad (7-8 mm. wide in M. populifolia, with slender, ~~short~~ bifid, glabrous styles, 1.5 x 1.3 mm) & the fruit distinctly verrucose as well as granular pruinose).

Habitat: swampy forest, often with stick-rocks.

This is Lindospermum perakensis
check the type (Kunth's - Kuntze)
at Kew: it is what
Singapore

Macaranga aff. populifolia

Syn. Lindospermum perakensis King apud Hook. fil. F.B.I. ~~III~~ V, 1887 p. 458.
(hauf Macaranga perakensis Hook. fil. loc. cit. p. 449)

A tree up to 25 m. high, with symforbical branches,
often developing ^{after 4 m. vertical} stilt-roots ^(up to 2 m. long) at the base: bark light

pur brownish grey, ~~is~~ entire, faintly tuberculate with brownish lenticels 2-3 mm. wide, the leaf-
scars persistent: inner bark light brown but fuscous-purple immediately below the ^{surface} ~~it~~ .5 cm. thick,
easily stripping;

~~twigs~~ / twigs glabrous, solid,
leaf-blade 8-~~17~~²⁰ x 5-~~12~~¹⁵ cm, shallowly or deeply
ovate-cordate, the apex acuminate, & occasionally

petiole (with the stem inserted .5-1.5 cm. from the edge),
the edge finely faintly to distinctly glandular denticulate,

the underside closely glandular dotted with discoid
glands in the areolae, distinctly coriaceous, finely

adpressedly tuberculate when young soon becoming ~~more~~
glabrous or sparsely hairy on the underside, dull green

on the upper side drying ^{light} grey-green, yellowish green on
the underside drying light khaki; primary lateral veins

6-8(-9) pairs: basal veins 5-7: petiole 2.5-14
cm. long, glabrous: stipules 8-1.6 cm. long,

con lanceolate glabrous soon falling off: glands on the upper side
of the blade absent or as 1-5 ~~to~~ small dot-like points at distances of 5-25 mm. from the
insertion ^{or the} ~~of the~~ ^{veins} ~~veins~~.
Male inflorescences in the axils of the old leaves or on

the veins behind the leaves, 5-10 cm. long, with a few lax
branches 1-2.5 cm. long, glabrous, ~~the~~ peduncle 1.5-2.5 cm.

long: bracts 7-12 mm. long, ^{much} longer than broad,
blunt or subacute, ~~then~~ entire, thin, glabrous: bract^eles

4-7 mm. long, ovate-lanceolate, ~~not~~ longer than broad, bluntly
acuminate and with 1-5 blunt teeth on each edge, thin,

glabrous or sparsely glandular perforate at the base, scarcely

forming a cone-like extremity (1-1.5 x 1/4 cm.) at the ends of the branches
 obovate; ~~calyx~~ male flower with a distinctly 3-lobed calyx, glabrous calyx enclosing 2, rarely 1 or 3, shortly stalked anthers each with 4 (3-5) cells,

Female inflorescence as in the male but rather shorter, unbranched, the peduncle 5-10 cm long. ~~male~~ and female flowers solitary or 2-3 together, subsessile, with a glabrous cupular subtend calyx, 1.5 mm high x 2 mm wide, and a 2-lobed, granular glandular ovary into 2 short ~~thick, fine, primary styles 1.5 mm long.~~ (rarely tridynamous)

Fruit 9-13 mm wide, 6-8 mm high, diagonal, on sterile ~~sterile~~ pedicels 2-3 mm long, and with the slightly enlarged 3-5 lobed calyx persistent at the base, covered with greenish yellow granular resinous glands.

Distr. S.E. Borneo Malaya (from Sumatra to Java)
 Sumatra, Bangka.

Collections

- Malaya - Wray 2379 (Perak, det. kinlopernum ~~parabense~~)
- Scottelini s.n. (Perak, det. kinlopernum parabense)
- Corner 32974, s.n. 28.3.37, s.n. 13.5.34 (Johore)
- Corner s.n. 1.5.37 (Trenqganu)
- Borneo - Boschproefstation 9941, 17.6.26, Kuala Kapoas. (det. M. populifolia)
- Sumatra - Boschproefstation 153E-IP-845 (female) (Palembang)
- " " 153E-IP-1021 (male) (Palembang) (det. M. populifolia)
- Bangka - J.D. Kolbus s.n. (Herb. Hort. Bog.), Teysmann s.n. (Herb. Hort. Bog.) (det. M. populifolia)

M. f. ...

G 80

veins lat. 7-8

br. 3-veined

...

→ inflo. 2.5 - 4 cm. ...
... 6-1 cm. long

br: leafy ...
2.5 - 4 mm long

fruit broadly oval, ...

♀ inflo. - 5 cm. long
with a few short .5 - 1.5 cm. long branches

fruit ...
...

...

3762,

Tegmann, 3644, Tubuan pr. Ogan
Ulu, Palembang

37

examined from Herb. Herb. B.S.P. Ogan

30.5.38.

MEMORANDUM

To

1) Stamens
...
...

From

Type

M. javanica var. ~~is~~ montana Muell. Arg.

DC. Prodr. xv, # 2, 1865, p. 1005

Syn. *M. robiginosa* Ridley New Bull. ^{Dec.} 1923, p. 367.
M. Heynei I.M. Johnston Contr. Gray Herb. 68, Aug. 1923,
p. 90 (fide Merrill, Contr. Ann. Arb. VIII, 1934, p. 88)
After studying the common wild ~~Malay~~ ^{Malay} trees
called *M. robiginosa*, in Malaya, and examining
the ~~other~~ dried specimens of *M. javanica* from
the Buitenzorg-herbarium, I conclude that *M. robiginosa*
is only a variety of *M. javanica*. The difference
between them lies in the ~~leaves~~ bracts. In general
construction, foliage, venation, flower and fruit
they are identical: but in the bracts several variations
can be distinguished. These variations are caused
by the size of the bract, the ~~width~~ ^{degree} of
"webbing" of the ~~leaves~~ marginal-teeth, the number of the
marginal teeth and the presence or absence of glands.
One can distinguish several "varietal states" but how
constant they are can be discovered only after
extensive study of the species from ~~more~~ ^{more} abundant
~~material~~ ^{more abundant material} and from many
more ~~numerous~~ localities. The variety ~~is~~ with broadly
webbed, 1-2 glandular, waxy bracts which is so
common in Malaya and Sumatra, was distinguished
by Muell. Arg. under the ~~unfortunate~~ ^{unfortunate} inappropriate
name "~~montana~~" "montana". The distinctions between

♀ typical M. javanica and var. montana is
~~shown~~ described below and shown in Text-Fig.

M. javanica typical

Bracts 6-20 mm. long, ^{1-4.5 mm. wide,} $\frac{1}{2}$ linear, lanceolate or
 ovate lanceolate, entire ~~or~~ ^{serrate} or with 1-6 $\frac{1}{2}$ short
 teeth on each edge, spreading, ^{often with a stalk 1-3 mm. long,} ~~with~~ generally with
 a ~~subterminal~~ subapical gland and 1-20 superficial
 glands on the upper side, ~~with more or less distinct stalks 1-3 mm. long~~

~~Sumatra, Borneo, Java.~~

~~var. montana~~

~~Bracts~~

Male flowers generally with 3 stamens, occasionally 2.

Sumatra, Borneo, Java.

var. montana

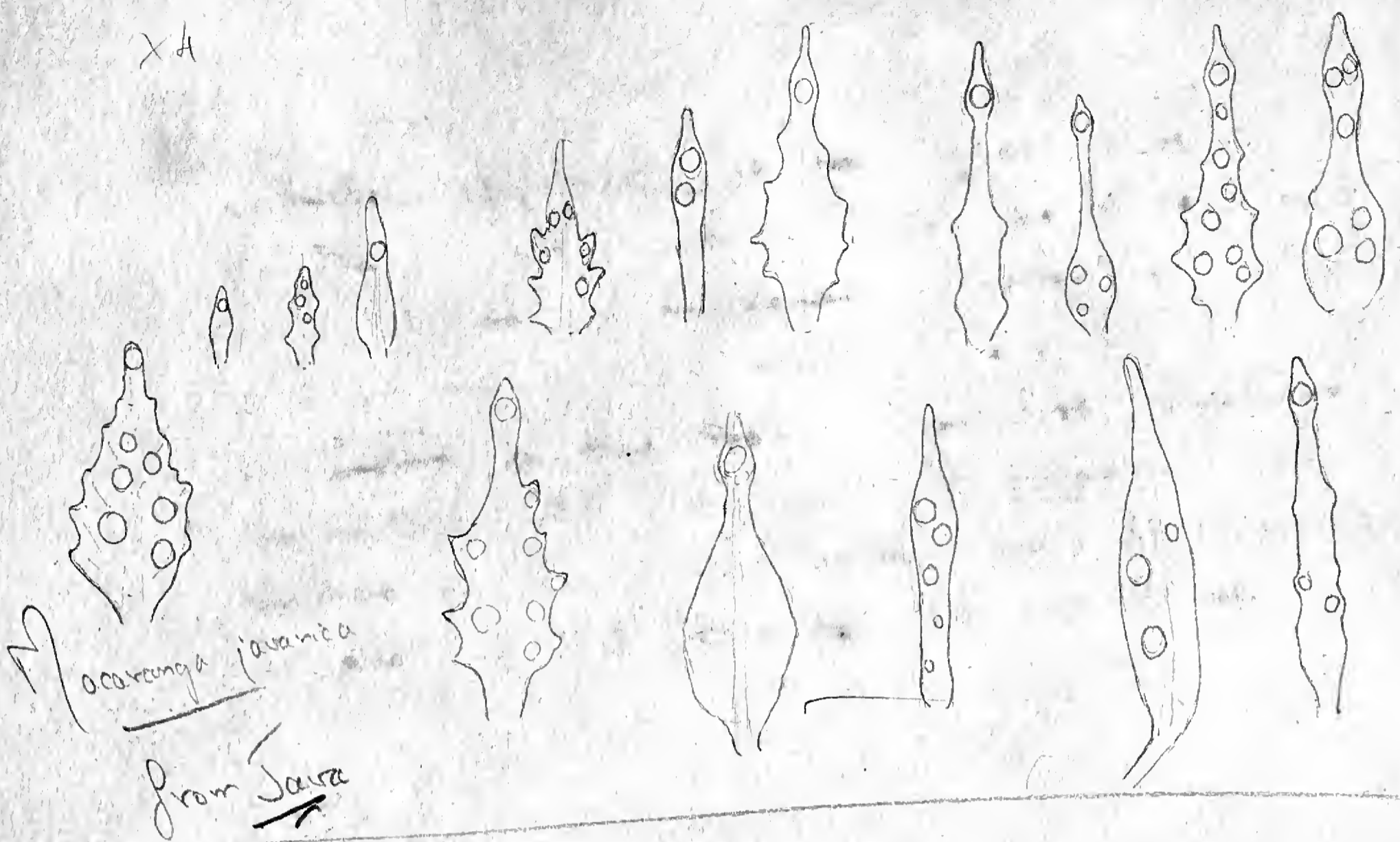
Bracts 4-13 x 3.5-10 mm., ovate, sessile or
 subsessile, often cordate, the edge more or less deeply
 dentate with ~~2-8~~ 2-8 teeth on each side, bluntly acuminate,
 generally with ^{only a} ~~one~~ subapical gland, or in some cases with
 1-3 small superficial glands.

Male flower generally with 2 stamens, occasionally 3.
 Siam, Malaya, Sumatra, Java, Borneo.

~~But~~ There is a ~~form~~ form in Malaya, which is

restricted apparently to ~~the~~ Pahang, Trengganu and
 Kelantan, which has linear pectinate, trifid
 or simple bracts ~~as shown in Text-Fig.~~ only
 3-6 mm. long, as shown in Text-Fig. It
 has ^{shorter} ~~smaller~~ ~~or~~ more toothed and less glandular
 bracts than of typical M. javanica but and
 shorter and much less "webbed" bracts than var. montana.
 It also has 2 stamens in the male flower.

X4



M. javanica
from Java

X4

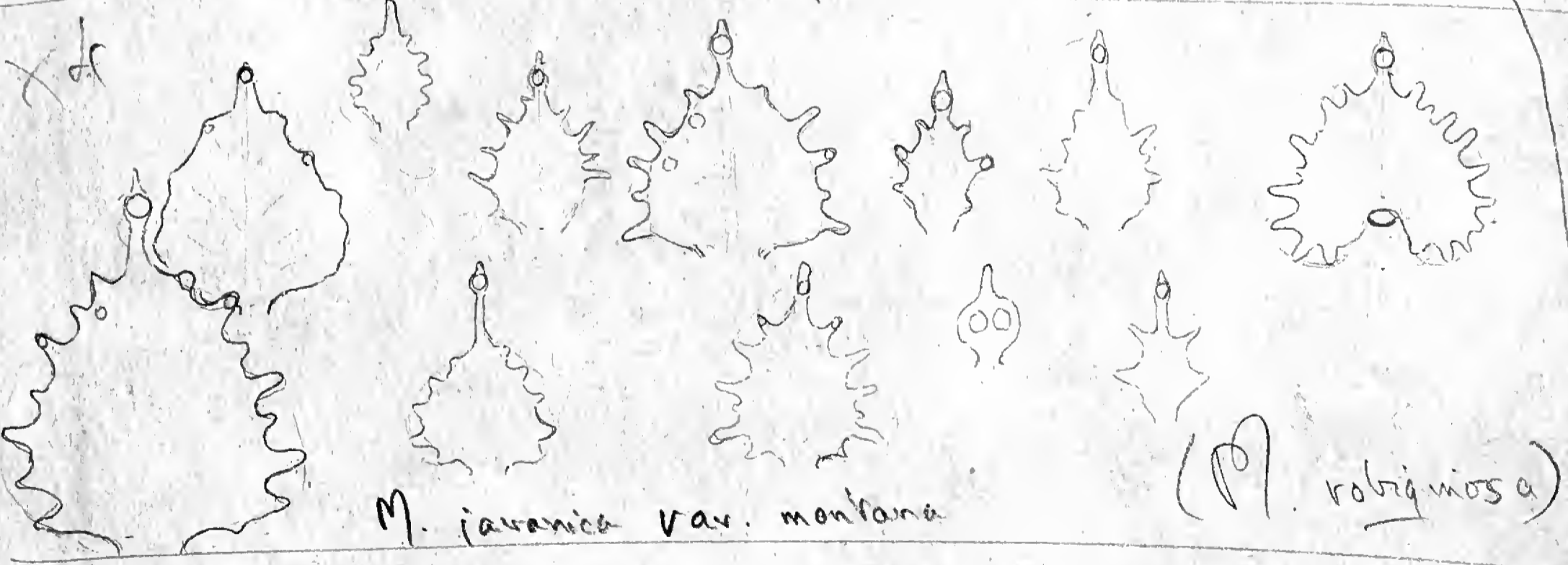


var "incisus"

also Com. For. Pater 4012, Kuantan

Bract ~~SD~~ 3-6 mm long
deeply pectinate with 1-4 teeth
on each side
& often with small glands on
upper surface

X4



M. javanica var. *montana*

(*M. rostrata*)

X4



Symington 28913, Kuantan

occasionally \rightarrow v of fls
on same influence!

accar-go jacarua.

Bl.

entire

{ lvs. vein } 9-13
 { var. vein } 3
 for
 petiole

stipule - 12 mm, ^{5 mm wide} ovate-lanceolate, caducous,

Twig

\rightarrow inflores. - 29 ~~19~~ cm.
 branches 12 to cm. sparse
 peduncle 3-1.5 cm.

bract 5-15 mm. x 1-3 mm, sometimes with a stalk 1-3 mm long

bracteoles like the bract but smaller v ^{or with} or with transitions to 1-2 mm

calyx

stamen

\uparrow inflores. - 21 ~~19~~ cm.
 branches 1-⁵ cm. long sparse, alt.

peduncle 0-1.5 cm.

bract 3-¹² mm. x ^{1-3 mm} ~~2 mm~~, alt. occas. apt.

bracteole

pedicel 2- flowers sessile

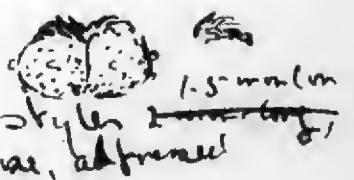
calyx ~~2-4~~

~~fls. alt.~~

~~occas. apt.~~

\uparrow fls. solitary

or 2-4 together



Fruit 3-5 mm. wide, sparsely verrucose, wholly granular glandular, styles ^{1.5 mm long} ~~2 mm long~~, striate, adpressed
 calyx ~~2-4~~ lobed, subsquamose
 pedicel 2-6 mm.

Java (Mangrove)

Baker 10619 (♀) has toothed brach 2-4.5 mm wide

Indonesia 119 (Palembang) has ~~toothed~~ linear brach 2-2.5 mm wide

var. montana



3-7 points on each side

brach 4 - $\frac{13}{7} \times 2 \rightarrow 3.5-10$

width

brachlets

[Faint handwritten notes at the bottom left corner]

[Faint handwritten notes at the bottom center]

Macaranga

M. Diepenhorstii (Miq.) Hall & Quell. Arg.

This species, hitherto known only from Sumatra, is common in the ~~S~~ states of Pahang, Perak and Kelantan from the lowlands up to an altitude of ~~20~~ 600 m. It is remarkably like *M. recurvata*, for which it may easily be mistaken in the field, but ~~the~~ leaves of *M. Diepenhorstii* are not glaucous beneath. I have ~~the~~ checked the Malayan specimens of ~~with~~ those ~~specimens~~ at the Buitenzorg-herbarium which include a collection of Teysmann's from Poreman ^(Sumatra) - the type-locality. Among these specimens is one with a male inflorescence ~~at the~~ an examination of which ~~showed~~ ^{has shown} that the species has been wrongly placed in the ~~subgenus~~ ^{section} *Adenoceras* because the bracts have no glands. The ~~specimen~~ *M. Diepenhorstii* belongs rather to the section *Sampsoniana* ~~is~~ and is allied with *M. Curtisii* from which it differs in being glabrous ^{and in} having dentate-like bracts ~~is~~ and ~~is~~ unisexual male flowers. But the sections of *Macaranga* are artificial.

The following are the diagnostic characters of *M. Diepenhorstii* :-

glabrous except the apex of the petiole which is

characteristically puberulous: wings \pm stiff, marcescent;
 stipules rather large, more or less persistent, green,
 ovate-lanceolate 1-2.5 cm. long: lamina ^{peltate} entire or nearly
 so, not glaucous beneath, without glands on the upper side
 but densely dotted with minute yellow glands on the
underside: inflorescences mostly on the wings behind the
 leaves, up to ~~26~~ 10-20 cm. long, with large, alternate
 branches: bracts of the male inflorescence 2.5-4 mm. long
~~obovate~~ ^{ovate}, crenate-dentate with 4-8 ^{short} blunt teeth, glabrous,
 without glands: bract of the female inflorescence up to
 7 mm. long, like those of the male but often acuminate:
male flower with 1 stamen, 4-locular anther, 3-lobed
and shortly stalked perianth, glabrous: female flower ~~2~~
 with short, glabrous, cupular perianth, and ~~2-lobed~~ 2-locular
 ovary ~~2~~ ^{ovary} covered with minute granular glands:
fruit 6.5-9 mm. wide, dibygous, ^{Jan} covered with sticky
granular glands, ~~set on pedicels~~
 3-8 mm. long

M. Diepenhorstia

sublim

BR - 16 x 12"

vein basal vein 8-10

pet. - apex characteristically pubescent

stipe

♂ inflor - 26 cm long, long glabrous,

peduncle
branch 2.5 - 4 mm, long, decumbent, with ~~2-5~~ ⁴⁻⁸ blunt, short
bracteoles → no glands. teeth round apex
glabrous.

fl. calyx - 2-3 lobes, not
pubescent
stam. 1, 4-celled anther

♀ inflor - ~~18~~ ²² cm, glabrous

branch - 6 cm, alternate

pet. ~~3-8~~ ³⁻⁸ mm, 1-5 cm.

bracteoles as ♂ ones

petal 3-8 mm

fruit 6.5-9 mm, warty
wholly granular glabrous

645/36.

11th May,

7

Dear Professor Lam,

Your letter concerning *Macaranga* has been passed on to me by Mr. Holttum. It is most kind of you to have investigated this matter and to give me so much information. Your conclusion is exceedingly interesting, for it seems that *Macaranga triloba sensu latissimo* is a species that is evolving. Indeed, I am a little perplexed at what should be done because I wish to include *M. triloba* in an account of our common trees.

I have just returned from a collecting trip to Kelantan, Pahang and Trengganu, where I had the opportunity of studying many specimens of what we call *M. triloba* and *M. Hullettii*, and never did I have any difficulty in distinguishing them even when sterile because leaf-shape and colour is different. I feel that I am right in saying that these two "species" are perfectly distinct in Malaya. But when collections are examined from other countries, as you have so kindly done, then the intermediates appear. I have noticed this in other families, and that plants from Borneo especially often unite what appear to be distinct species in Malaya. We should then, I suppose, have one polymorphous species and so many varieties as are needed. In the present case, I am inclined to keep *M. triloba* and *M. cornuta* (= *M. Hullettii*) distinct as species in

Professor H.J. Lam,
Rijksherbarium,
Nonnensteeg 1,
Leiden,
H O L L A N D .

FS/27

Malaya but I want, if you have no objection, to quote your opinion and evidence so that I may draw the attention of botanists in neighbouring countries to this "polymorphous discovery". I see, for instance, that Merrill has re-described our M. Hullettii as M. Bartlettii from Sumatra (Pap. Michig. Ac. Sci. Arts & Lett. 1933, XIX, p. 161).

Thanking you again for the trouble which you have taken on my behalf.

Yours sincerely,

E. J. H. L.

Assistant Director of Gardens, S.S.

P.S.
The polymorphy of M. koto seems to show how necessary it is to survey collections from the whole Malaysian region before a proper distinction of species can be made. If I have some leisure on, I will ask for the Buitenzorg material and will then write to you further on the problem.

Verzoeken bij beantwoording het nummer van dezen brief aan te halen.
Adres: AAN DEN DIRECTEUR VAN HET RIJKSHERBARIUM, LEIDEN (zonder vermelding van persoonsnamen).

LEIDEN, April 6, 1937.

Please, refer to number of this letter.
Address: THE DIRECTOR, RIJKSHERBARIUM, LEIDEN, HOLLAND (without mention of personal names).

AAN

Dr. R. E. HOLTUM
Director of the Botanic Gardens
SINGAPORE.

No. 356.

BIJGEVOEGD (apart):
ANNEX (separate cover):

ONDERWERP:
CONCERNS:

ANTWOORD OP:
REFERENCE:

My dear Dr. Holtum,

I have yet to answer the letters by Dr. CORNER of December 19th and March 3rd, No. 645/36, concerning Macaranga, and by Dr. HENDERSON of January 22nd, No. 40/37 concerning Eugenia, respectively. Will you please transmit the information given below to the gentlemen mentioned?

- Dr. CORNER. In my opinion M. Hullettii, M. cornuta and M. triloba have to be combined altogether. Our material of cornuta and triloba being pretty rich, I was able to find that there is no feature constant in either of these species. In the 6 or 7 specimens which may be considered as more or less authentic (Reinwardt, Blume, Korthals, Junghuhn, Zollinger), the following features are very variable (no actual type specimen can be indicated and the one that is most likely Reinwardt's type, is sterile):
- leaves - shape greatly diverse, ^{ferning} in various specimens without any correlation with other features; hairiness underneath occasionally occurs, apparently especially in Borneo (M. divergens is probably only a hairy form of M. triloba).
 - male inflorescence - the peduncle long or short; ramifications lax or dense (age!).
 - bracts of male inflorescences - most variable (rounded serrate-truncate, irregularly dentate, etc. without correlation to other features).
 - female inflorescence - ramification lax or dense.
 - fruit - with or without horns (only one specimen); horns ^{of} variable length, shape and glandiness.

Having examined authentic material of cornuta, triloba and divergens, I cannot help concluding that there is only one polymorphous species: M. triloba (Rw.) Muell.-Arg.

VERVOLGVEL1.....

The specimens from British Malaya are, in my opinion, merely more or less extreme in their horned fruits and clustered infrutescences. The female specimens of "triloba" seem to be also exceptional, as I did not see anything of the sort in the rich Leiden material. Yet I am inclined to attribute the peculiar branchedness, at least partly, to the apparent youth of the specimen. The hornless fruits of 14574 occasionally also occur in other specimens, although not as much extreme as this.

I do not think it is necessary to send you our material, but of course I will be glad to do so, if you would like to examine it yourself.

645/36.

3rd March,

Your letter No.115: 4.2.37.

Dear Professor Lam,

It seems that the covering letter to the 10 specimens of Macaranga has gone astray. I am therefore sending you a copy of the original letter, which was sent on 20th December 1936. Unfortunately there was a delay in the sending of the specimens until three weeks later.

I think my intention was that all 10 specimens should be returned. If you will kindly do this I will send you duplicates of recent and better collections that I have been making of the two species.

I shall be most grateful if you will enquire into this point of systematy.

Yours sincerely,

E. J. C.

Assistant Director of Gardens, S.S.

Professor H.J.Lam,

Director,

Rijksherbarium, Nonnensteeg, Leiden, Holland

FS/31

Verzoeken bij beantwoording het nummer in dezen brief aan te halen.
Adres: AN DEN DIRECTEUR VAN HET RIJKSHERBARIUM, LEIDEN (zonder vermelding van persoonsnamen).

Please, refer to number of this letter.
Address: THE DIRECTOR, RIJKSHERBARIUM, LEIDEN, HOLLAND (without mention of personal names).

LEIDEN, February 4, 1937.

No. 115.

BIJGEVOEGD (apart):
ANNEX (separate cover):

ONDERWERP:
CONCERNS:

ANTWOORD OP:
REFERENCE:

AAN

The Director
Botanic Gardens
SINGAPORE.


Dear Dr. Holttum,

Some days ago we received 10 specimens of Macaranga without further indication, what has to be done with them. I cannot find any letter I should have written you or you to me concerning them. Some of the specimens are "stamped" to be returned to the Botanic Gardens, Singapore, but others are not stamped that way. Will you please inform me whether this shipment is meant as a continuation to exchange, or what is your intention with it.

With kind regards,

Yours sincerely,

HJL/LB


(H. J. Lam).
Director, Rijksherbarium.

645/36.

19th December,

6

Dear Professor Lam,

I wonder if you would be so kind as to compare some specimens (10 sheets) of *Macaranga*, that I am sending you, with some specimens of Blume's which I imagine must be in the Leiden herbarium.

I discover that J.J. Smith and Pax are mistaken in reducing *Macaranga cornuta* Muell. Arg. to *M. triloba* (Rainw.) Muell. Arg. It seems that Smith referred the female plants of *M. cornuta* to *M. triloba* and hence the muddle. In Malaya we have two common species, one called *M. Hullettii*, which I take to be *M. cornuta*, and one called *M. triloba*.

M. Hullettii has fruits with 4-5 horns, occasionally only 2-3, and the fruits are in peduncled heads. It has long peduncled male inflorescences with ovate-acuminate, often dentate, bracts. It agrees exactly with *M. cornuta*. It is very variable in the leaf, however, which may be simple or 3-lobed (sapling or lower branches).

M. triloba according to Mueller Arg. has fruits without horns. Such is the case with our malayan specimens of *M. triloba* in which, moreover, the female inflorescences are much more branched than in *M. cornuta*. The male inflorescences of *M. triloba* have short peduncles and small, cucullate bracts.

Professor H.J. Lam,
Rijks Herbarium,
Nonnensteeg,
Leiden, HOLLAND.

F5/33

Blume in his original description of Pachystemon trilobum (Bijdr. Flor. Ned. Ind. II p. 326) does not mention horns on the fruit. Mueller (DC Prodr. XV, 2: p. 989) said that there were none and that he had seen Blume's specimen at Leiden. Smith (Bijdr. No. 12 Boomsorten of Java 1910) said that the fruits on Blume's specimen must have been young and therefore without horns. Could you find Blume's specimen and see how it agrees with the malayan ones that I shall send? Even if the fruits on Blume's specimen are young it should be possible to distinguish the two species by means of the female inflorescence.

There should also be a bornean specimen of M. divergens Muell. ^{Ang.} at Leiden, which is the type of the species. ^{is} ~~Is~~ it the same as M. cornuta (i.e. M. Hullettii)?

I apologise for giving you so much trouble, but I will greatly appreciate your assistance. If I am correct in my interpretation of Mueller's two species, then M. Hullettii and several other species become synonyms of M. cornuta and we shall have made another step forward in the taxonomy of eastern plants.

Yours sincerely,

E. J. H. C.

Assistant Director of Gardens, S.S.