

STUDIES IN CYPERACEAE-MAPANIEAE I—V.

by

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I. A REVISION OF THE GENUS *THORACOSTACHYUM* KURZ.

The genus *Thoracostachyum* was described in 1869 by S. Kurz in the Journal of the Asiatic Society of Bengal, Vol. XXXVIII, part 2, p. 75 and based upon *Lepironia sumatrana* and *L. bancana* of Miquel. We are justified to accept the first-mentioned species as the type-species of the genus. It is true, that Kurz published the name *Thoracostachys bancana* five years earlier in the „Natuurkundig Tijdschrift voor Nederlandsch Indië” XXVII (1864), p. 224, but this name is not valid, as it was published as a nomen nudum, without a generic or specific description and even without citing the synonym *Lepironia bancana* Miq.

In Recueil des Travaux botaniques néerlandais, Vol. XXXII (1935), p. 184 and Mededeelingen van het Botanisch Museum en Herbarium te Utrecht, nr. 16 (1935), p. 184 I splitted of the genus *Paramapania*, characterized by its leafless scapes, small bracts and some, less conspicuous, floral characteristics. The re-

maining part of the genus is rather homogeneous, as may be seen from the diagnosis.

Only the species from the Netherlands' East-Indies are treated at some length, as I had neither new localities nor new characteristics to add as to the other three species. The abbreviations used for the herbaria and added between square brackets are the following: Bog.-Herbarium bogoriense, Buitenzorg; B.-Brussels; BM.-Natural History Department of the British Museum, London; D.-Berlin-Dahlem; K.-Kew; L.-Leiden; P.-Paris; U.-Utrecht.

Diagnosis.

Leaves linear or petiolate. Culms leafy, triangular. Inflorescence corymbose. Spikelets ovoid to oblong. Glumes obtuse. Flowers with six squamellae, 2 lateral ones navicular with a ciliate keel, free, the other 4 concave or flat, linear. Stamens 3, in the axils of the three outer squamellae. Style-branches 3. Nut terete, trigonous or sub-3-lobed, beaked, floating, not differentiated into a woody and a spongy part.

Distribution: Species 7, two in Cochin-China, one on the Seychelles, one endemic in Sumatra, the other more widely spread in South-Eastern Asia.

Key to the species.

- | | | |
|-----|---|---|
| 1a. | Leaves not petiolate | 2 |
| b. | Leaves distinctly petiolate | 6 |
| 2a. | Spikelets numerous, in a usually very large decom-
pound corymb | 4 |
| b. | Spikelets 5—60 in a corymb of 5—10 cm in diam. | 3 |
| 3a. | Culms and branchlets of the inflorescence smooth. Spike-
lets 7—9 mm long, straw-coloured | |
| | 1. <i>Th. sumatranum</i> (Miq.) Kurz. | |
| b. | Branchlets of the inflorescence and culms at the top
scabrous. Spikelets 4—6 (rarely up to 7 mm) long, reddish
at the top. | |
| | 2. <i>Th. bancanum</i> (Miq.) Kurz. | |
| 4a. | Leaves 2—5 cm wide. Spikelets 3—5 mm wide. Nut tri-
gonous, abruptly acuminate | 5 |
| b. | Leaves 4—20 mm wide. Spikelets 2—2.5 mm wide. Nut
terete, gradually narrowed into the acumen | |
| | 5. <i>Th. floribundum</i> (Nees) Clarke. | |

- 5a. Spikelets $1\frac{1}{2}$ times as long as wide, 4—8 x 3—5 mm....
 3. *Th. pandanophyllum* (F. v. Muell.) Domin.
 b. Spikelets more than twice as long as wide, 7—10 x 3 mm.
 4. *Th. Heyneanum* (Backer) Uitt.
 6a. Leaves 3—nerved. Bracts broad, leafy. Spikelets linear,
 20—30 x 2.5 mm.
 6. *Th. tonkinensis* (E. G. Camus) Uitt.
 b. Leaves 1—nerved. Bracts filiform, scabrous. Spikelets
 oblong-ovoid, 15—20 x 5—7 mm.
 7. *Th. Balansae* E. G. Camus.

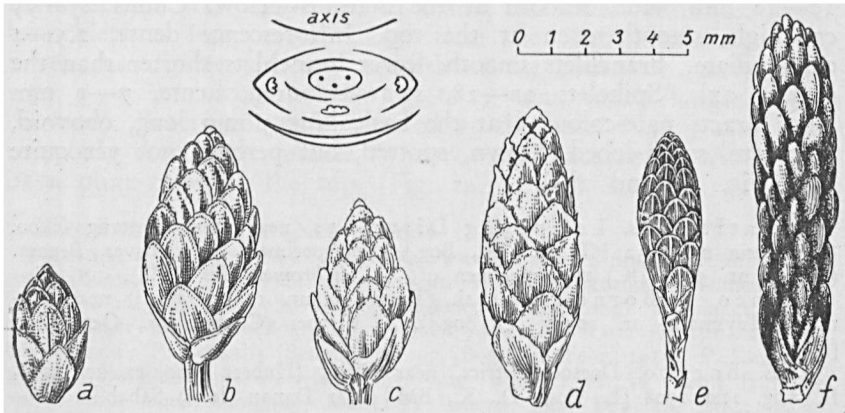


Fig. 1. Diagram of the flower of *Thoracostachyum* and spikelets of various species. a) *Th. bancanum*, type-specimen; b) *Th. sumatranum*, type-specimen; c) *Th. pandanophyllum*, Versteeg nr. 1018; d) *Th. Heyneanum*, type-specimen; e) *Th. floribundum*, Gordon nr. 213; f) *Th. bancanum*, diseased, type-specimen of *Th. subcapitatum* Valck. Sur.

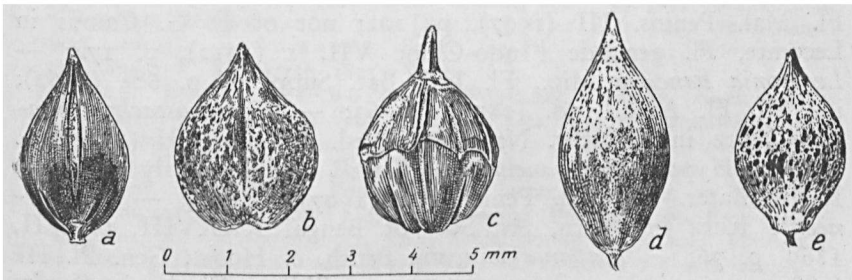


Fig. 2. Nuts of various species of *Thoracostachyum*. a) *Th. bancanum*, Waitz; b) *Th. sumatranum*, Teysmann nr. 10937; c) *Th. pandanophyllum*, Docters v. Leeuwen nr. 11252; d) *Th. floribundum*, Gordon nr. 213; e) *Th. tonkinensis*, Balansa.

1. *Thoracostachyum sumatranum* (Miq.) Kurz in Journ. As. Soc. of Bengal XXXVIII, part II, 1869, p. 75 — *Lepironia sumatrana* Miq., Flora Ind. Bat. Suppl. I, 1860, p. 604 (The actual date of publication of the last 300 pages is probably 1862, see Van Steenis in Bull. Jard. Bot. Buit. Sér. III, Vol. XIII, p. 285); id., Ill. Fl. Arch. Ind. (1871), p. 62, Tab. XXIV; — *Thoracostachyum dichromenoides* Ridl. in Engl. Jahrb. LXIV (1910), p. 525.

Rootstocks woody, vertical, up to 1 cm in diam. Stolons not seen. Leaves usually green and distinctly reticulate, when dry, 10—18 mm wide, smooth at the margins below. Culms 25—95 cm high, smooth even at the top. Inflorescence dense, 2.5—4 cm in diam., branchlets smooth, lower branchlets shorter than the central axis. Spikelets 12—28, straw-coloured, acute, 7—9 mm long. Bracts pale-coloured at the base. Nut 3 mm long, obovoid, apiculate, sub-3-lobed, brown, spotted, but perhaps not yet quite rip. (Fig. 1b and 2b).

Sumatra. Res. Lampoeng Districts, near Ipiel, Battang Iekoo. (Teysmann nr. 3932 HB. [U., K., Bog.], type-specimen). Siak River, Penasa. (Ridley nr. 9025 [K.] type-specimen of *Th. dichromenoides* Ridl.).

Borneo. W.-Borneo. Kenepai. (Teysmann nr. 10951 [Bog.]) near Sintang. (Teysmann nr. 10937 [L., Bog.]). S. Kuapei (Chaper s.n., Oct. 1890 [P.]).

S. E. Borneo. Doesoën-district, near Djih. (Hubert Winkler nr. 3297, fl. Aug. 21st 1908 [L., Bog., D., K., BM.] near Danau (lake) Sababila.

2. *Thoracostachyum bancanum* (Miq.) Kurz. in Journ. As. Soc. of Bengal XXXVIII, part II, 1869, p. 76; Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 680; id. in Journ. Linn. Soc. XXXIV (1898), p. 94; id., Ill. Cyp. (1909), tab. CVII, fig. 12—20; Ridley, Fl. Malay Penins. V (1925), p. 171; id. Mater. Fl. Mal. Penins. III (1907), p. 102; not of E. G. Camus in Lecomte, Fl. gen. de l'Indo-Chine VII, 1 (1912), p. 174; — *Lepironia bancana* Miq., Fl. Ind. Bat. Suppl. I, p. 604 (1862); id., Ill. Fl. Arch. Ind. (1871), p. 63; — *Thoracostachys bancana* Kurz in Tijdschr. Nat. Ver. Ned. Ind. XXVII (1864), p. 224; — *Hypolytrum bancanum* („Kurz”, as erroneously cited by) Ridl., Mater. Fl. Mal. Penins. III (1907), p. 102; — *H. borneense* Kurz in Journ. As. Soc. of Bengal XXXVIII, part II, 1869, p. 76; — *Mapania bancana* Benth. et Hook., Gen. Pl. III (1883), p. 1055; — *Thoracostachyum Ridleyi* Clarke in Straits Branch Roy. As. Soc. Nr. 46 (1906), p. 226; id. in Kew Bull. Add. Ser. VIII (1908), p. 53; — *Th. subcapitatum* Valck. Sur. in Nova Guinea VIII, part 4, p. 710 (1912) is a form with longer

spikelets, due apparently to the attacks of an *Ustilago* and described as *Th. bancanum*, var. *longispica* by Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 680; id. in Journ. Linn. Soc. XXXIV (1898), p. 94; Ridley, Mater. Fl. Mal. Penins III (1907), p. 102; id., Fl. Mal. Penins. V (1925), p. 171.

Rootstocks sometimes present, vertical, woody, up to 1 cm in diam. Stolons slender, horizontal, woody, up to 30 cm long, 2—3 mm in diam. Leaves usually glaucous, not or hardly reticulate, when dry, 5—20 mm wide, more or less rough at the margins below. Culms 17—80 cm high, scabrous at the top. Inflorescence lax, 1.5—6 cm in diam., branchlets scabrous, lower branchlets as long as or longer than the central axis. Spikelets 5—60, usually grayish and reddish at the obtuse or rarely acute top, 4—6 mm long (rarely up to 7 mm, much longer, when diseased). Bracts not pale-coloured at the base. Nut 3 mm long, ellipsoid, shortly acuminate, 3-furrowed, blackish brown at the base, olive-green at the top. (Fig. 1a, 1f and 2a).

Distribution in the Netherlands Indies:

Sumatra. Res. Riau and Dependencies: Soegi bawah, forest-road (Bünnemeijer nr. 7724 [Bog.], Sept. 1919, a luxuriant specimen, with leaves 16-20 mm wide and fruiting spikelets 7 mm long). P. Lingga, forest (Bünnemeijer nr. 7052 [Bog.] fl. 27 July 1919). — Res. East coast of Sumatra: P. Begkalis (Bruinier nr. 97 [Bog.] fl., Febr. 1919). P. Rangsang, near P. Bengkalis, marshy places in forest (Bruinier nr. 56 [Bog.] fr., Aug. 1918, vern. name: *mingsing*, Mal.). P. Padang, near Danglan, moist places, with *Nepenthes* growing on aerial roots (Polak nr. 133 [Bog.], fr. 26 Sept. 1930). — Res. West coast of Sumatra: Batoe Islands, P. Pini (Raap nr. 618 [Bog.], fl. 5 Jan. 1897). — Res. Palembang: Banjoecasin-district, near Bajoeng lintjir (Endert nr. E 1121 [Bog.], ster. 25 Oct. 1931, vern. name: *rambai bajan*, Mal.). — Res. Bangka and Dependencies: Bangka, near Batoe Roesah (Type-specimen [U.]; Amand s.n. [K.]). Bangka, Djeboes (Teysmann nr. 6252 [Bog.], vern. name: *sendieng ajer*). Bangka, Soengai Liat, near Tiangtara (Bünnemeijer nr. 1867 [Bog., L.], fr. 2 Febr. 1917, vern. name: *rompoet seding*). — Sumatra. Exact locality unknown: Koorders nr. 21474b [Bog.], fl. 27 March 1891; Waitz [L.].

Borneo. Res. West-Borneo: Pontianak, marshy forest, moist open places (Polak nr. 305 [Bog.], fl. 19 Dec. 1930). Singkawang, near Andjongan, marshes (Polak nr. 176 [Bog.], fl. 10 Dec. 1930). Near Mandor, moist places (Polak nr. 223 [Bog.], fl. 11 Dec. 1930). Boekit Singkadjang (Teysmann nr. 10945 [Bog.]). Pontianak, Sei Poetat (Mondi nr. 77 [Bog., L.], fl. 16 March 1931, vern. name: *roemipoet grinsing*). Pontianak, Sei Raja (Mondi nr. 13 [Bog.], fl. 12 March 1931, vern. name: *roemipoet rembog*). Pontianak, Soeka Lanting (Hallier nr. 246 [Bog.], diseased, spikelets 7-8 mm long).

Boeroe. Koentoroen, on stony soil at the edge of the sphagnum-bog, at 1075 m alt. (Toxopeus nr. A1 [Bog.], fl. 6 Febr. 1922).

New-Guinea. North-New-Guinea. Rouffaer River marshy forests on the hills. (Docters van Leeuwen nr. 9815 [Bog.], fr. Aug. 1926, at 175 m alt., common). — South-New-Guinea: Lorentz-river, near the

Nepenthes-hill (Versteeg nr. 1298 [Bog.], fr. 23 June 1907, type-specimen of *Thoracostachyum subcapitatum* Valck. Sur., diseased, spikelets 5-16 mm long).

Distribution out of the Netherlands' Indies:

Malay Peninsula. Pahang: Ridley nr. 1105 [BM.]; Malacca: Anonymus nr. 1663 [BM.], Griffith nr. 6357 [K., D.], diseased, Ridley nr. 3534 [K.], Griffith nr. 6273 [K.]; Singapore: Ridley nr. 124 [BM., K.], Ridley nr. 82, 117, 166 [D.], 168 [D.] [all in BM.], Wallich nr. 3401 [BM., K.], Gaudichaud nr. 118 [P.], Johore: Ridley s.n. [D.].

British North-Borneo. Labuan: Barber nr. 193 (cited as Motley nr. 193 by Clarke, Illustr. Cyp., tab. CVII, type-specimen of *Hypolytrum borneense* Kurz [K.]).

Sarawak: Ridley nr. 12344 [K.] (type-specimen of *Thoracostachyum Ridleyi* Clarke), Ridley nr. 12339 [K.], Native coll. nr. 1290 [P., L., D.], Beccari nr. 3332 [K., P.], Hewitt s.n. [Bog.].

Note.

The locality of a specimen in the Kew-herbarium, collected by Ridley, is uncertain, as it was „mixed in mounting with *Cyperus*. Fields along Poespo Road, Tosari. It probably came from this district. July 1915. Coll. H. N. Ridley”. It would be the first specimen found in Java.

3. *Thoracostachyum pandanophyllum* (F. v. Muell.) Domin in *Bibl. Bot. Heft 85 IV* (1915), p. 484. — *Hypolytrum pandanophyllum* F. v. Muell., *Fragm. Phytogr. Austr. Vol. IX* (1875), p. 16. — *Mapania pandanophyllum* K. Schum. in K. Schum. & M. Hollrung, *Die Flora von Kais. Wilhelmsland* (1889), p. 25, K. Schum. & K. Laut.; *Fl. D. Schutzg. Südsee* (1901), p. 189; *Kük. in Engl. Jahrb. LIX* (1924), p. 54; — *Pandanophyllum hypolytroides* F. v. Muell., l.c. in nota. — *Mapania hypolytroides* F. v. Muell. in Benth., *Fl. Austr. VII* (1878), p. 341; F. M. Bailey, *Syn. Queensl. Fl.* (1883), p. 604; id., *Queensl. Fl. VI* (1902), p. 1776; — *M. hypolytroides* F. v. Muell., *Sec. Syst. Sensus Austr. Pl.* (1889), p. 213; — *Thoracostachyum hypolytroides* Clarke in Hook. f., *Fl. Brit. Ind. VI* (1894), p. 681; id. in *Journ. Linn. Soc. XXXIV* (1898), p. 94; id., *Ill. Cyp.* (1909), tab. CVIII; Ridley, *Mater. Fl. Mal. Penins. III* (1907), p. 102, not in *Journ. Fed. Mal. Stat. Mus. VIII*, part 4 (1917), p. 123 (*Scirpus chinensis* Munro); Valck. Sur. in *Nova Guinea VIII*, part 4 (1912), p. 710.

Stolons up to 50 cm long, clothed with scales of 5 cm. Leaves green, 1-3 m long, 2-5 cm wide, moderately scabrous and partially smooth at the margins, with a long and narrow acumen. Culms 60-120 cm high, smooth even at the top, 5-7 mm in diam. Inflorescence globose or ovoid, 10-17 cm in diam., lowest bract up to 125 cm long (acumen 1-2 dm). Spikelets more than 100, ovoid or ovoid-oblong, 5-8 mm long, 3-5 mm

wide, often nearly globular when in fruit, 5 x 5 or 8—9 x 6—7 mm. Glumes pale, sub-circular or ovate, very obtuse, 3—3.5 mm long. Nut angular, trigonous, narrowed to the base, dilated at the top and abruptly acuminate, brown. 2 mm long. beak 1 mm long. (Fig. 1c and 2c).

Distribution in the Netherlands Indies:

Sumatra. Res. Lampoeng Districts: Near Menggala. (Coll. indig. nr. 4354 [Bog.]).

Borneo. East-Borneo: West-Koetai, near Danau Siram, common in the grass-vegetation on the dried-up bank (Endert nr. 2027, fr. 13 July 1925 [Bog.]).

Celebes. Waootobi (Kjellberg nr. 874, fl. 15 March 1929 [Bog.]). New-Guinea. North-New-Guinea: Humboldt-baai (Gibbs nr. 6249 [K., BM.], fl. Jan. 1914). Mouth of the Mamberamo River (Janowsky nr. 426 [Bog.], fl. Sept. 1913). Mamberamo R., near Albatros-Bivak, abundant in the marshy forest (Docters van Leeuwen nr. 11252, [Bog.], fr. Nov. 1926). Idenburg River, near Prauwen-Bivak, shore-vegetation (Lam nr. 919 [Bog.], fr. 26 Aug. 1920). Idenburg R. (Lam nr. 535 [Bog.], fl. 4 July 1920; Feuilletau de Bruyn nr. 13, fl. 28 May 1914 [Bog.]). Hollandia-Bivak (Gjellerup nr. 106 [Bog.], fl. 2 May 1910). South-New-Guinea: Lorentz River (Versteeg nr. 1018, fl. 8 May 1907 [Bog.]; v. Römer nr. 56, fl. 5 Nov. 1909 [Bog.]).

Indian Archipelago. Without exact locality: Waitz s.n. [L.] "

Distribution out of the Netherlands Indies:

Malay Peninsula. Malacca: Derry nr. 1027 [K. BM.]; Ridley nr. 1648 [BM.]. Johore: Kelsall nr. 4093 [K.], Ridley s.n. [D.].

New-Guinea. Kaiser Wilhelmsland: Hollrung nr. 696 [K.]; Hellwig nr. 400 [K.].

Palau-Islands: Ledermann nr. 14399 [K.].

Australia. Queensland. Rockingham Bay (Dallachy [K.]).

4. *Thoracostachyum Heyneanum* (Backer) Uitt. in Rec. Trav. Bot. Néerl. XXXII (1935), p. 200; also in Med. Bot. Mus. & Herb. Utr. nr. 17 (1935), p. 200; — *Mapania Heyneana* Backer in Bull. Jard. Bot. Buitenzorg Ser III, Vol. II (1920), p. 328.

Very closely related to the preceding species, differing only by its somewhat less dense corymb and the shape of the spikelets. (Fig. 1d).

Only once found.

Sumatra. Res. Palembang, Moelak Oeloe. (Greshoff nr. 343 [Bog. L.], fl. 20 Apr. 1915, in sawahs, vern. names: *roembai lilin*, *roembai idjoe*.)

5. *Thoracostachyum floribundum* (Nees) Clarke in Durand & Schinz, Consp. Fl. Afr. V (1894), p. 667; — *Hypolytrum floribundum* Nees, nomen in Linnaea IX (1835), p. 228; Steud.,

Syn. II (1855), p. 132.

Seychelles. (Horne nr. 647 [K.], nr. 640 [K.], Gordon nr. 213 [K.], Boivin [K.], Thomasset [K.D.], Stanley Gardiner [K.D.].)

A variety with 4—7 mm wide leaves has been described as *Th. angustifolium* Clarke in Kew Bull., Add. Ser. VIII (1908), p. 52; — *Th. floribundum* Clarke, var. *angustifolium* Uitt., in Rec. Trav. Bot. Néerl. XXXII (1935), p. 200; also in Med. Bot. Mus. & Herb. Utr. nr. 17 (1935), p. 200.

Seychelles. Mahé. (Thomasset nr. 152 [K.], Stanley Gardiner [K.]). (Fig. 1e and 2d).

6. *Thoracostachyum tonkinensis* (E. G. Camus) Uitt. nov. comb.; — *Diplasia tonkinensis* E. G. Camus in Lecomte, Notulae syst. I (1910), p. 250, fig. 15; id. in Lecomte, Fl. Indo-Chine VII, 1, p. 175, fig. 23; H. Pfeiffer in Fedde, Rep. XXI (1925), p. 240.

The number of style-branches is wrongly given as 2 (Fig. 2e).

Tonkin: Ononbi (Balansa nr. 184 [P.]).

7. *Thoracostachyum Balansae* E. G. Camus in Lecomte, Notulae syst. I (1910), p. 252, fig. 14; id. in Lecomte, Fl. Indo-Chine VII, 1, p. 174, fig. 23.

The fruits are neither 15 mm long, as is said in the original description, nor 1,5 as in the french description, but 4 mm.

Tonkin. Mount Bavi, alt. 800 m (Balansa nr. 2806 [P.]).

List of the species of *Thoracostachyum*.

angustifolium Clarke, see nr. 5.

Balansae E. G. Camus, see nr. 7.

bancanum (Miq.) Kurz, see nr. 2.

dichromenoides Ridl., see nr. 1.

floribundum (Nees) Clarke, see nr. 5.

Heyneanum (Backer) Uitt., see nr. 4.

hypolytroides (F. v. Muell.) Clarke, see nr. 3.

longistylum Kük. — *Paramapania longistyla* Uitt. nov. comb.

lucbanense (Elm.) Kük. — *Paramapania lucbanensis* Uitt.

montanum (Laut. & K. Schum.) Valck. Sur. — *Paramapania*

parvibractea (Clarke) Uitt.

pandanophyllum (F. v. Muell.) Domin, see nr. 3.

Ridleyi Clarke, see nr. 2.

simplex Ridl. — *Paramapania simplex* Uitt.

subcapitatum Valck. Sur., see nr. 2.

sumatranum (Miq.) Kurz, see nr. 1.

tonkinensis (E. G. Camus) Uitt., see nr. 6.

II. NOTES ON PARAMAPANIA UITT.

Since I published the genus *Paramapania* in Rec. Trav. Bot. Néerl. XXXII, 1935, p. 184 (Meded. Bot. Mus. & Herb. Utr. nr. 16) a revision of the collections from New Guinea in the Buitenzorg and Berlin-Dahlem herbaria gave me the occasion to make a few additions and new combinations. The abbreviations used for the herbaria are the same as in the previous paper. A key to the species is added.

P. longistyla (Kük.) Uitt. *Thoracostachyum longistylum* Kük. in Engl. Bot. Jahrb. LIX, 1924, p. 54.

Kükenthal mentions 3 (rarely 4) interior squamellae and 2 stamens. I always found 2 lateral boat-shaped and 4 interior squamellae or, as I should rather like to say, 3 outer and 3 inner ones and 3 stamens. There might be however some variability, as the anterior squamella is distinctly smaller than the lateral and especially than the dorsal one. The third (anterior) stamen too is somewhat shorter and less developed than the other two. The flower is therefore nearly regularly trimerous and its diagram similar to that of *Thoracostachyum*, whereas in the other species of the genus usually the third stamen and often the third outer squamella too is lacking.

Kaiser-Wilhelms-Land. (N.-E. New Guinea): Ledermann nr. 19586 [D.], type-specimen, [P.] and nr. 19728 [D., P.] (*forma parva* Kük., l.c.).

P. johorensis Uitt. The specimen of Teysmann (nr. 6280 [Bog.]), from Lingga, Soengei tanda, differs from the type-specimen (Holttum 10989 [K.]) in having 6—20 spikelets in the inflorescence. The culms are up to 30 cm long and the sixth, anterior squamella of the flower is wanting in nearly all the flowers analyzed. In two of them the antio-lateral inner squamellae were connate, so that a flower with 2 lateral and two median squamellae arises. The number of squamellae is apparently not an important taxonomic character, as in *P. gracillima* (Merr.) Uitt. the sixth squamella is often lacking. I do not doubt, however, as to the identity of this specimen with *P. johorensis*, thanks to the globose, stipitate nut. The same view holds true for *P. lucbanensis* (Elm.) Uitt. The specimen from Luzon, Bureau of science nr. 36625 [D., P.] differs rather from nr. 23642 [K., BM., L., P., Bog.], having much broader leaves (up to 2 cm and six squamellae with three stamens (see *P. longistyla* (Kük.) Uitt.)) But the fruits are very similar, so that I shall leave a possible splitting up of this species to the Philippine

botanists having the disposal of a complete set of the collections made in that country.

P. longirostris (Kük.) Uitt. nov. comb.; *Mapania longirostris* Kük. in Engl. Bot. Jahrb. LIX (1924), p. 55; *Paramapania rostrata* (Elm.) Uitt. in Rec. Trav. Bot. Néerl. XXXII (1935), p. 189; also in Med. Bot. Mus. & Herb. Utr., nr. 16, p. 189, fig. 2; *Mapania rostrata* Elm. msc. in sched. ad Philipp. Isl. Plants nr. 16150 ex Uitt., l.c.

The specimens from New Guinea (Ledermann nr. 9708 [D.] & 12774 [D.]) have somewhat broader nuts and shorter and narrower leaves (5 mm), but the facies and the flowers are identical. As the name given by Elmer has not been published before 1935, the epithet used by Kükenthal is the valid one.

Paramapania flaccida Uitt. nov. spec.

Rhizoma lignosum obliquum 0.5 cm crassum, radicibus 1—1.5 cm crassis tectum, apice fibris foliorum dilapsorum vestitum. Folia linearia 15 (10—20) cm longa, 7—14 mm lata, coriacea, pallida, multinervia, nervo mediano subtus prominente, interdum indistincte trinervia, basin versus angustata et complicata, basi fusciscentia, apice abrupte cuspidata, cuspidate, 1.5—2 cm longo, marginibus laevibus sed apice, quo in cuspidem redeunt, cum nervo mediano, scabris.

Scapi aphylli ultimo basi squamulis fuscis praediti, flaccidi, 5—18 cm longi, 1 mm lati, apice scabriusculi, plerumque monostachyi, interdum 2—3—spiculati, ramulis 6—10 mm longis. Spiculae 7—10 mm longae, sub anthesin 2 mm latae, fructiferae 6 mm latae, oblongae, acutae, basi longe coartatae, fusciscentes. Glumae fuscae, oblongae, obtusae, 3—3.5 mm longae, 1.5 mm latae, nervo mediano vix distincto. Flores oblongi, 3 mm longi, squamellis 6, lateralibus navicularibus, carinatis, liberis, in carina pulchre brunneo-dentatis in axillis stamen singulum foventibus, anteriore minore et angustiore, 2 mm tantum longa, 0.5 mm lata, flaccida, interioribus ternis concavis oblongis, 3 mm longis ovarium includentibus. Ovarium ellipsoideum, 0.5 mm longum, stylo crasso 2 mm longo, acute trigono apice stigmatibus trinis brevibus praedito. Nux (forsan non satis matura) 3 mm longa, atrobrunnea, complanato-trigona, utrinque acuminata, nitens, latere posteriore latissimo, subflaccido, lateribus anterioribus angustioribus convexis.

Paramapaniae simplici (Ridl.) Uitt. affinis, a qua scapis flaccidis, foliis laevibus, nuce minore brevius rostrata differt.

Nova Guinea neerlandica borealis. Ad flumen Rouffaer-rivier legit W. M. Docters van Leeuwen nr. 10413 mense Sept. 1926, altitudine 250 m. (Typus in herb. Bogoriense, Buitenzorg).

Paramapania parvibractea (Clarke) Uitt. nov. comb.; *Hypolytrum Parvibractea* C.B. Clarke in Kew Bull. 1899, p. 114; *H. Parvibractea* C.B. Clarke in Kew Bull., Add. Ser. VIII (1908), p. 51; *H. parvibractea*, var. *quadriglumatum* Valck. Sur. in Nova Guinea VIII (1912), p. 709; *H. quadriglumatum* Valck. Sur., l.c., Tab. CXVI; *Mapania montana* Laut. & Schum. in K. Schum. & Lauterb., Die Flora der Deutschen Schutzgebiete in der Südsee, 1901 (1900), p. 189; *Thoracostachyum montanum* Valck. Sur., l.c., p. 710; *Paramapania amboinensis* Uitt. in Rec. Trav. Bot. Néerl. XXXII (1935), p. 191 & in Med. Bot. Mus. & Herb. Utr. nr. 16, p. 191 (1935), fig. 4; *P. montana* Uitt., l.c., p. 200 & in Med. Bot. Mus. nr. 17, p. 200.

I have to apologize for the creation of superfluous new names. When publishing *P. amboinensis*, I was not aware of its identity with the above-mentioned *Thoracostachyum*- and *Mapania*-species and, when I corrected myself, l.c., p. 200, I oversaw that *Hypolytrum parvibractea* had been described twice, the first time as *H. Parvibractea*, but both names based upon the same specimen. Valckenier Suringar, l.c., p. 709 and Ridley (in the report of the Wollaston Expedition to Dutch New Guinea, Trans. Linn. Soc. IX, part 1 (1916), p. 243 too overlooked the first description. This gave rise to Valckenier Suringar's (l.c., p. 710) and Kükenthal's opinion (Engl. Jahrb. LIX, 1924, p. 54), that the name *Mapania montana* could claim the right of priority. It was not published however before the end of 1900, whereas *Hypolytrum Parvibractea* Clarke was published in the Kew Bulletin in August 1899, as confirmed by a book-note in Journal of Botany XXXVII, 1899, p. 446.

The homonyms *Mapania montana* Ridl. in Journ. Straits Branch Roy. As. Soc. nr. 44 (1905), p. 206 and *M. montana* Uitt. in Rec. Trav. Bot. Néerl. XXII (1925), p. 339 must be rejected. The earliest legitimate epithet available for the first-named species is *Mapania latifolia* Uitt. in Rec. Trav. Bot. Néerl. XXXII (1935), p. 199, which is, as suggested by the author, l.c., p. 200, a luxuriant form of *M. montana* Ridl. Many intermediate specimens are extant in the Buitenzorg Herbarium (e.g. Clemens nrs. 21851, 10872, 11092, 27573, 30065, 31307, 30654 and 35016). *M. montana* Uitt. has been renamed by the author as *M. surinamensis* Uitt. in Pulle, Flora of Surinam I, 2, p. 128 (1934).

Distribution in the Netherlands Indies:

Res. Menado: Talaud-Islands, Poeloe Karakelong (Lam nr. 2757, fl. 2 May 1926 [Bog.]).

Res. Ternate and Dependencies: Gébé (Teysmann s.n. [Bog.]). Res. Ambon: Ambon (Forsten [L.]; Robinson nr. 1889 [L.]; Brooks nr. 17748 [Bog.]). Ambon, near Way Joeá (Kornassi nr. 1164, fr. 17 Apr. 1918 [L.], type of *P. amboinensis*). Ambon, Latoea (Boerlage nr. 464, fr. 25 July 1900 [Bog.]). Ambon, near Hoetoemoeri (Teysmann [L., Bog.]). Ambon, near Salhoetoe (Rant nr. 650, fl. 2 Nov. 1931 [Bog.]). Ceram, between Waroe and Marsimang (Kornassi nr. 982, fl. 8 Febr. 1918 [Bog.]).

New-Guinea. North-New-Guinea: Mamberamo River, near Albatros-Bivak (Docters van Leeuwen nr. 9652, fr. July 1926, inflorescences infected by a fungus [Bog.]). Idenburg River, near Prauwen-Bivak, in the forest on the hills, very common (Lam nr. 792, 802, 830 & 959, fl. & fr. Aug. 1920 [Bog.]). Rouffaer River, on steep slopes in the forest (Docters van Leeuwen nr. 10452, fl. Sept. 1926 [Bog.]).

South-New-Guinea: Noord-River (Von Römer nr. 953, fl. 8 Nov. 1909, type of *Thoracostachyum subcapitatum* Valck. Sur. [Bog.]).

Distribution out of the Netherlands Indies:

New-Guinea. Kaiser-Wilhelms-Land: Ramu River (Lauterbach nr. 3180 [D.], type of *Mapania montana*). Kaiserin-Augusta River, Mount Hunstein (Ledermann nr. 8365 [D.]). Pfingstberg (Ledermann nr. 7406 [D.]). April River (Ledermann nr. 8737 [D.]).

British New-Guinea: Mount Scratchley, 12200 ft (Guilianetti [K.], type of *Hypolytrum parvibractea*).

Key to the species of *Paramapania*.

- | | | |
|-----|--|-------------------------------------|
| 1a. | Leaves abruptly and shortly acuminate | 2 |
| b. | Leaves gradually narrowed into a long point | 4 |
| 2a. | Nut nearly 6 mm long with a curved beak | |
| | P. simplex (Ridl.) Uitt. | |
| b. | Nut 3 mm long with a short beak | 3 |
| 3a. | Leaves 7—14 mm wide. Spikelets 1—3. Stamens 2 | |
| | P. flaccida Uitt. | |
| b. | Leaves 15—18 mm wide. Spikelets 6—43. Stamens 3 | |
| | P. longistyla (Kük.) Uitt. | |
| 4a. | Spikelets (usually) solitary | 5 |
| b. | Spikelets corymbose | 6 |
| 5a. | Style-branches (usually) 4. Nut 2 mm long, with a short beak | P. gracillima (Kük. et Merr.) Uitt. |
| b. | Style-branches 3. Nut 5—5.5 mm long, with a long beak | P. longirostris (Kük.) Uitt. |
| 6a. | Nut 3—3.5 mm long, acute | P. lucbanensis (Elm.) Uitt. |
| b. | Nut 2 mm long, obtuse | 7 |
| 7a. | Nut with a distinct beak | P. radians (C. B. Clarke) Uitt. |
| b. | Nut not distinctly beaked | 8 |

2. Leaves subcoriaceous, 1.5—5 cm wide.
- a. Leaves 1.5—2 cm wide. Scapes 4—30 cm long.
Lower glumes narrow, acute.
6. *M. zeylanica* (Thw.) Clarke.
- β. Leaves 2.25—5 cm wide. Scapes 2—11 cm long.
Lower glumes broad, obtuse.
7. *M. squamata* (Kurz) Clarke.
- b. Flowers 1 cm long.
- I. Leaves 1—1.5 cm wide, often moderately serrate or nearly smooth at the margin. Nut with a rather long and robust beak.
1. Scapes 1—4 cm long. Glumes hardly coriaceous. Nut sessile or nearly sessile. 8. *M. immersa* (Thw.) Clarke.
2. Scapes 10—80 cm long. Glumes coriaceous. Nut with a broad, 2 mm long beak. 9. *M. enodis* (Miq.) Clarke.
- II. Leaves either broader or more scabrous. Nut obtuse or apiculate.
1. Leaves 2.5—3.25 cm wide, minutely and finely serrate or nearly smooth at the margin. 12. *M. papuana* Ridl.
2. Leaves 9—14 mm wide, densely and acutely serrate.
- a. Leaves subcoriaceous, distinctly 3-many-nerved, not brown at the base. Scape 1 mm in diameter.
10. *M. tenuiscapa* Clarke.
- β. Leaves coriaceous, thick, 1-nerved, dark brown at the base. Scape 2 mm in diameter. 11. *M. lorea* Uitt.

1. *M. longiflora* C. B. Clarke in Kew Bull. Add. Ser. VIII (1908), p. 54; id. Illustr. Cyp. (1909), Tab. CX, fig. 7—13.

Borneo. Bandjermasin (Motley nr. 1192 [K.] type-specimen) S. E. Borneo, Tanah-boemboe, near Batoelitjin (Van Slooten nr. 2160, 28-X-1928. common in the marshy wood, vern. name: *selingsing* [Bog.]).

2. *M. longiflora* C. B. Clarke, var. *sessilis* (Merr.) Uitt. nov. comb.; *M. sessilis* Merr. in Journ. As. Soc. Straits Branch 85 (1922), p. 156.

There are no other differences with the species than the lacking of a scape and "its unusually large imbricate bracts". Similar sessile and somewhat elongate spikelets are met with on the same plant together with normally developed peduncled spikelets with other species. Thus this variety scarcely merits recognition.

Brit. N. Borneo. Near Sandakan. (Ramos nr. 1856, Dec. 1920 [L., P.], type-number).

3. *Mapania graminea* Uitt. nov. spec.

Rhizoma crassum, lignosum, 1 cm diametro, radicibus 2.5 mm crassis. Folia trifaria, 60—70 cm longa, 6—8 mm lata, coriacea, glauca, uninervia vel indistincte trinervia, marginibus et apicem versus in carina dense et acute serrata, basi complicata, apice longissime acutata. Spiculae sessiles vel ad 1.5 cm (in varietate longius) stipitatae, 2.5—3 cm longae, 1 cm latae, squamis 12—14 mm longis, inferioribus coriaceis, multinerviis, glaucis, latiuscule marginatis, margine tenuiore, subacutis, superioribus florigeris tenuiter coriaceis, lanceolatis, brunnescentibus. Flores 12—14 mm longi, squamellis 6, staminibus 3, antheris 6—6.5 mm longis, ovario ovoideo, stylo longo apice trifido.

Borneo. Soengei magne. Legit Jaheri in expeditione Nieuwenhuis 1896—1897, nr. 1571. (Typus in herb. Bogoriense, Buitenzorg).

var. *stipitata* Uitt. nov. var. (Folia 5—6 mm lata). Scapi 13—15 cm longi, graciles, subtrigoni vel applanati, basi squamati, 1.5 mm diametro. (Spiculae 2 cm longae. Nuce immature 5 mm longae, ellipsoideo-subtrigonae, apice acuminatae.

Borneo. Boekit Kasian. Legit Jaheri in expeditione Nieuwenhuis 1896—1897, nr. 1044 (Typus in herb. Bogoriense, Buitenzorg).

4. *Mapania spadicea* Uitt. nov. spec.

Mapaniae squamatae (Kurz) Clarke affinis, floribus et fructibus similibus, sed foliis et spicularum glumis multo angustioribus et rigidioribus.

Rhizoma crassissima, lignosa, 1—2 cm diametro, radicibus crassis 3—4 mm diametro, teretibus. Folia trifaria, linearia, rigide coriacea, glauca, supra nitentia, infra opaca, tertia parte basali duplicata, ceterum valde carinata nervo medio infra valde prominente, nervis binis lateralibus supra haud vel vix distinctis, saepe albidis, marginibus dense et acute serratis; saepe subrevolutis, dimidio superiore in carina setulosis, apice sensim angustatis in flagellum longissimum et scaberrimum, basi colorata, spadicea vel nigro-spadicea, scarioso-marginata, usque 170 cm longa, 9—14 mm lata.

Scapi robusti 10—30 cm longi (in cotypis breviores, 2—10 cm longi), scabri (in cotypis sublaeves), subteretes, subtrigoni vel (longiores) compressi, 3—4 mm diametro, basi squamis spadiceis acutis vestiti, spiculam unicam (vel ut interdum in specimine Teysmanniano spiculas binas vel trinas) gerentes.

Spiculae 2.5—5 cm longae, 11—13 mm latae, squamis inferioribus lanceolatis, acutis, angustius membranaceo-marginatis, infima interdum in scapis longioribus 0.5—1.5 cm remota, et tunc 2—3 cm longa,

squamis florigeris lineari-lanceolatis 1.5 cm longis, floribus ut in *M. squamata* 1.5 cm longis, squamellis tribus, staminibus tribus, antheris 8 mm longis, styli ramis tribus. Nux (in cotypis tantum visa) submatura: teste collectore viridis, ellipsoidea, subtrigona, utrinque acuminata, 6 mm longa, lignosa, matura in eadem planta: ellipsoidea utrinque subacuta, 4 mm longa, silice rugosa, endocarpio lignoso nigro.

Borneo. In ditone West-Koetai, prope Long Petak, in ripa rivuli, alt. 450 m legit F. H. Endert, nr. 3348, 16 IX 1925 (Typus in herb. Bogoriense, Buitenzorg); West-Koetai, prope Long Temelen, in silva primaeva, in ripa fluminis, alt. 200 m legit F. H. Endert, nr. 2874, 26 VIII 1925; Pontianak, in ditone Sanggau, in monte Biang leg. Teysmann, nr. 11639.

5. *Mapania Wallichii* C. B. Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 682; id. Illustr. Cyp. (1909), Tab. CX, fig. 1—6; Ridley, Materials Fl. Mal. Pen. III (1907), p. 105, partly?; id., Fl. Mal. Pen. V (1925), p. 173, fig. 220, partly?

As the original diagnose is very short and the descriptions given by Ridley are not correct as to the leaves, a new description is given here, based on the type-specimen, Ridley nr. 12527 and the specimens from the Netherlands' East-Indies.

Mapaniae squamatae Miq. affinis, sed foliis angustioribus, viridissimis. Rhizoma lignosum, 1 cm diametro. Folia usque 140 cm longa, 12—20 mm lata, rigide coriacea, uninervia vel indistincte trinervia, margine et apicem versus in carina acute et dense serrata, basin versus duplicata, basi late scarioso-marginata, haud colorata, ceterum valde carinata, marginibus revolutis, sensim in acumen longum scaberrimum angustata, utrinque viridissima, supra nitentia, infra magis opaca. Scapi 6—14 cm longi, laeves, trigoni, 2—3 mm diametro, basi squamis viridibus vel fuscis vestiti. Spicae 2.5—3.75 cm longae, 13 mm latae, squamis infimis 4—7 coriaceis, late ovatis vel ovatis, subacutis vel obtusis, sequentibus 10—12 late oblongis, 15 mm longis, 10 mm latis, obtusis, latiuscule membranaceo-marginatis superioribus florigeris tenuioribus, 15 mm longis, floribus 15 mm longis, more subgeneris 6-squamellatis, staminibus tribus, antheris 8 mm longis, styli ramis tribus. Nuces (immaturae) fusco-cinereae, ellipsoideae, 5 mm longae, rostro et stipite 1 mm longo praeditae.

Singapore. (Wallich nr. 3541 [K.], type-specimen). Pulau Battaw (Poelau Batam, near Singapore) (Ridley nr. 12527 [K.]).

Lingga, Boekit Sipintjang, legit. Teysmann s.n. (Typus in herb. Bogoriense, Buitenzorg); Banka, Soengai Liat, Goenoeng Maras, in silva alt. 500 m legit H. A. B. Bünnemeijer, nr. 1824, 31 X 1907. „communis; nomen vernaculum: *Seding babi*”.

6. *M. zeylanica* (Thw.) C. B. Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 682. Though Benth. and Hook., united the genera *Pandanophyllum* and *Lepironia* with *Mapania*, they did not actually publish the new combination in their Genera Plant. III (1883), p. 1055. Clarke and most authors after him thus erroneously gave it as *M. zeylanica* Benth.; id. in Journ. Linn. Soc. XXXIV (1898), p. 95; Trimen & Hook., Handb. Fl. Ceylon V (1900), p. 91; not of Ridl. & Winkler in Engl. Bot. Jahrb. XLIV (1910), p. 525; *Pandanophyllum zeylanicum* Thw., Enum. Pl. Zeyl. (1864), p. 345 & p. 433; Kurz in Journ. As. Soc. Bengal XXXVIII, 2 (1869), p. 81; Boeck. in Linnaea XXXVII (1871—1873), p. 138, *Lepironia ceylanica* Miq., Ill. Fl. Arch. Ind. (1871), p. 61, Pl. XXII.

Ceylon: C. P. 3029 [BM., B., Bog., P.]. Recorded from Borneo, but no specimens extant in the Buitenzorg Herbarium. Winkler nr. 2585 [D.], collected in S. E. Borneo, belongs to *M. enodis* (Miq.) Clarke. Motley nr. 1192 from Bandjermasin is *M. longiflora* Clarke. Both are cited as *M. zeylanica*.

7. *M. squamata* (Kurz) C. B. Clarke in Kew Bull. Add. Ser. VIII (1908), p. 53; *Pandanophyllum squamatum* Kurz in Journ. As. Soc. Bengal XXXVIII, 2 (1869), p. 80; *Lepironia squamata* Miq., Ill. Fl. Arch. Ind. (1871), p. 64, Pl. XXVI;? *M. heterocephala* Merr. in Journ. As. Soc. Straits Branch LXXXV (1922), p. 157.

Java: Buitenzorg (Zippelius [Bog., L.]). Res. Semarang, Bandjaran (? Beumee nr. 4116 [Bog.], leaves only). Locality unknown, Java, in montosis Prabakti, 2-4000 ped. (Zollinger nr. 1280 [P.]). Sumatra: Res. Palembang, Ranau-meer, Goenoeng Sabiwang (van Steenis nr. 3778 [Bog.], doubtful, leaves only). Borneo: West-Koetai, near Long Hoet, 130-160 m., especially along ravines rather common (Endert nr. 2658, fr. 19-VIII-1925 [Bog.]). Brit. N. Borneo, Kinabalu, near Penibukan, 4000 ft. (J. & M. S. Clemens nr. 32096, fl. 2 March 1933 [Bog.]). Without exact locality: Exped. Nieuwenhuis 1896-97 (Jaheri nr. 963 [Bog.]), Borneo-Exped. (Hallier nr. 3169 „Amal Ambit” [Bog., L.]). Malay Peninsula: Singapore (Wallich nr. 3541, not seen).

8. *M. immersa* (Thw.) C. B. Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 682; Trimen & Hook., Handb. Fl. Ceylon V (1900), p. 91; *Pandanophyllum immersum* Thw., Enum. Pl. zeyl. (1864), p. 433; Kurz in Journ. As. Soc. Bengal XXXVIII, 2 (1869), p. 83.

Ceylon. C. P. nr. 3819 [BM., Bog., P.]. Only once found.

9. *M. enodis* (Miq.) Clarke in Kew Bull. Add. Ser. VIII (1908), p. 53; *Lepironia enodis* Miq., Fl. Ind. Bat. Suppl. (1862), p. 603; id. Ill. Fl. Arch. Ind. (1871), p. 60, Pl. XXI; *Lepironia foliosa*

Miq., Fl. Ind. Bat. Suppl. (1862), p. 603; *Pandanophyllum Miqelianum* Kurz in Journ. As. Soc. Bengal XXXVIII, 2 (1869), p. 81; *Mapania longa* Ridley in Journ. Singapore As. Soc. nr. 23 (1891), p. 14; Clarke in Hook.f., Fl. Brit. Ind. VI (1894), p. 683; id., Illustr. Cyp. (1909), Tab. CX, fig. 14—17; Ridley, Materials Fl. Mal. Pen. III (1907, p. 105; id., Fl. Mal. Pen. V (1925), p. 173; not of E. G. Camus in Lecomte, Fl. gén. Indo-Chine VII, p. 178, which is *Carex spec.*

Sumatra: Res. Palembang, near Danoh tjaloh moesi (Teysmann nr. 3685 [Bog., L., U.]). Borneo: Soengai Kenepai (Hallier nr. 2090 [Bog., L.]). Without exact locality: Korthals [L.]. Malay Peninsula: Singapore (Ridley nr. 169 [BM.]).

10. *M. tenuiscapa* Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 683; Ridley, Mater. Fl. Mal. Pen. III (1907), p. 105, partly, id., Fl. Mal. Pen. V (1925), p. 173, partly.

Malay Peninsula. Malacca (Griffith, Kew Distrib. nr. 6299. [K., BM.], type of species); Johore, Kwala Sembrong (Kelsall-Ridley nr. 4094, 18 X 1892, local name: Sendacan. [K.]). The specimen from Sungei Tebrau, Ridley nr. 11501, cited by Ridley as *M. tenuiscapa*, belongs to the following species. In the Buitenzorg herbarium this species is not represented.

11. *M. lorea* Uitt. nov. spec. *M. tenuiscapae* Clarke affinis, sed foliis crassioribus, basi spadiceis et scapis robustioribus dignoscenda.

Rhizomata crassa, 0.5—1 cm diametro, erecta vel repentia, teste collectore usque ad 2 m longa, foliosa, radicibus 2—3 mm crassis. Folia lorea, crasse coriacea, usque ad 1 m longa, 10 (9—14) mm lata, glaucescentia, basi spadicea vel nigro-spadicea, marginibus et apicem versus etiam in carina asperrima, parte basali complicata, ceterum subflaccida, nervo mediano distincto depresso, subtus valde prominente, nervis ceteris valde indistinctis, lamina subtus striata, reticulata, apice sensim in acumen longum acutata. Scapi 7—11 cm longi, plerumque 2 mm crassi. Spiculae 1—1.5 cm longae, fructiferae obtusissimae semiglobosae, glumis 7—8 mm longis, valde obtusis, anguste membranaceo-marginatis, multinerviis. Flores subgeneris. Nuces ovoideae, late stipitatae, apice obtusae vel subacutae, griseo-fuscae, 6 mm longae, 4 mm latae.

Sumatra orientalis. Insula Roepat, in paludosis sat communis (Leg. J. B. H. Bruinier, nr. 17, nomen vern.: *Selinsing*, typus in Herb. Bogoriense, Buitenzorg, etiam in Herb. Lugduno-Batavo, Leiden, nr. 922, 66-1002).

Peninsula malesica (Malacca). Johore: Sungei Tebrau (leg. H. N. Ridley nr. 11501, Apr. 1898 [BM.]); Sungei Tersap (leg. R. E. Holttum nr. 24912, d.d. 6 Jul. 1931 [Bog.]).

This new species may be distinguished from the preceding one by its much thicker, leathery leaves, reticulate beneath and with only one distinct nerve. The base of the leaf is dark brown in four of the five specimens seen, the Leiden specimen has a somewhat lighter colour. The scapes are more robust than with *M. tenuiscapa* and the fruits are probably larger, but those of *M. tenuiscapa* are rather young.

12. *M. papuana* Ridl. in Trans. Linn. Soc. 2nd Ser. Bot. IX, 2 (1916), p. 246.

Netherlands' New-Guinea. Otakwa R., Camp I. (C. B. Kloss, type-specimen [BM.]); Idenburg R., near Prauwenbivak, 100 m. (H. J. Lam nr. 1015 & 1016, 1 IX 1920 [Bog.]).

IV. A NEW SPECIES OF MAPANIA, SECT. HALOSTEMMA (WALL.)

C. B. CLARKE.

Mapania inopinata Utt. nov. spec.

Foliis *Mapaniae humilis* (Hassk.) Naves et Villars sed spiculis 3—5 distinctis subgeneri *Halostemmae* attribuenda.

Rhizoma lignosum, breve, 1 cm crassum, radicibus teretibus, 2—3 mm crassis, caespitibus approximatis. Folia *Mapaniae humilis* instar, inferiora squamiformia vel vaginiformia, multinervosa, acuminata, papyracea, 1—9 cm longa, usque ad 3 cm lata, acumine 0.5—1.5 cm longo, superiora petiolata, basi late vaginata apice subito in acumen contracta, vaginis 4—8 cm longis, 3 cm latis, papyraceis, multinervosis subito in petiolos graciles, 9—27 cm longos, complanatos, supra sulcatos, 2—2.5 latos contractis, laminis oblongo-linearibus, papyraceis, glaucescenti-viridibus, trinerviis, 15—22 cm longis, 2—5 cm latis, basi subito in petiolos, apice in acumen 1.5—4 cm longum subtriquetrum, scabrum contractis, marginibus apice extremo excepto laevibus.

Scapi e basi caespitum rumpentes graciles, basi squamis nonnullis ovatis vel lanceolatis acutis, membranaceo-marginatis, usque ad 1 cm longis vestiti, 5—10 cm longi, 0.5—1 mm diametro, spiculas 3—5 (raro singulam) laxe capitatas gerentes. Spiculae ovato-oblongae, 9—12 mm longae, 4—5 mm latae, bractea singula naviculari, oblonga, subacuta, late membranaceo-marginata, multinervosa, papyracea suffultae, glumis sterilibus nullis, omnibus florigeris 6 mm longis, tenuiter papyraceis brunneo-lineolatis, inferioribus 7—3-nerviis, late membranaceis, superioribus uninerviis, tenuioribus. Flores 6 (5—6.5) mm longi, squamellis 6, lanceolato-linearibus, binis lateralibus externis navicularibus carinatis, in carina minute cilio-

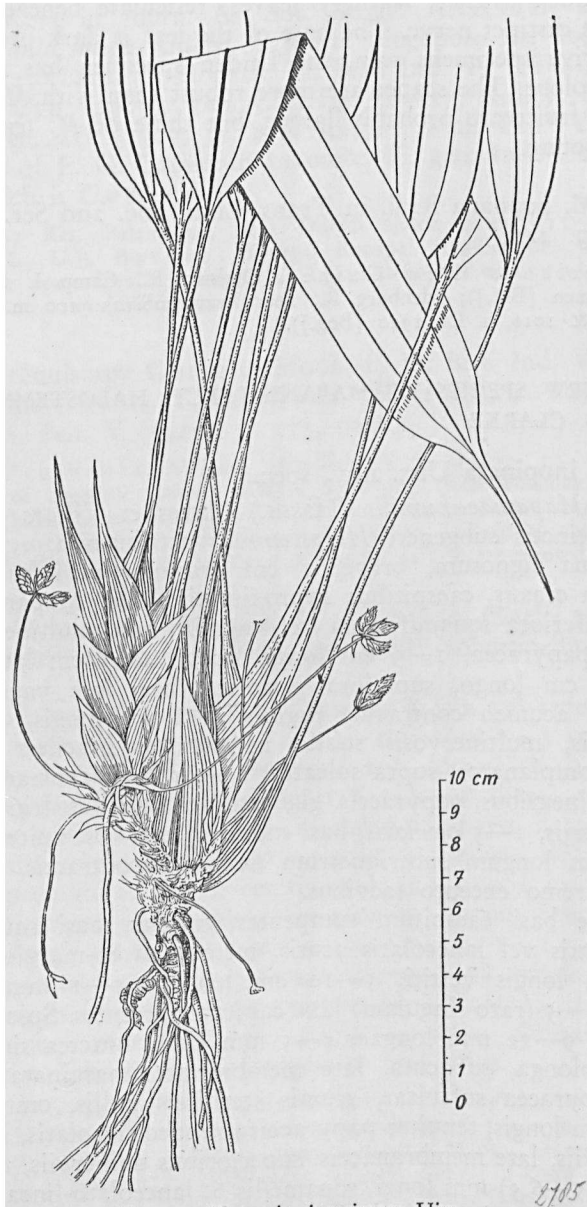


Fig. 3. *Mapania inopinata* Uitt.

latis, ceteris subflaccidis, staminibus 3, antheris 6 mm longis, ovario lineari-oblongo 2 mm longo, fere 1 mm stipitato, stylo 2 mm longo, styli ramis tribus, 2.5 mm longis. Nux fusco-cinerea 4—5 mm longa, 2.5—3 mm lata, subglobosa, stipite lato 0.5—1 mm longo, rostro fere 1 mm longo acuminata.

Borneo. In ditone West-Koetai, prope Long Hoet, legit F. H. Ender, nr. 2693, 20-VIII-1925, alt. 130 m. (Typus in herb. Bogoriense, Buitenzorg).

V. NOTES ON HYPOLYTRUM L. C. RICH.

The four Asiatic species of *Hypolytrum* with a compact inflorescence may be distinguished as follows:

- 1a. Culms leafless, with some sheaths at the base. Bracts shorter than the inflorescence or ahrdly longer. 1. *H. humile* Boeck.
- b. Culms with leaves at the base or in the middle. Bracts leaf-like 2
- 2a. Nut ending abruptly in a short and narrow beak, greatest width of the nut above the middle.
 4. *H. elegans* (E. G. Camus) Uitt.
- b. Nut gradually narrowed into a long, spongy beak, greatest width of the nut at or below the middle 3
- 3a. Culms robust, 2—2.5 mm in diam. Glumes rather rigid, not or hardly pellucidly margined. Nut with a narrow acute beak 2. *H. compactum* Nees.
- b. Culms slender, 1—1.5 mm in diam. Glumes rather thin, with a pellucid margin. Nut with a broad, obtuse or nearly obtuse beak 3. *H. capitulatum* Valck. Sur.

1. *Hypolytrum humile* (Steud.) Boeck. in *Linnaea* 37 (1871—1873), p. 128; *Pandanophyllum humile* Zoll. in sched. ad nr. 1511 in herb. Mus. Brit.; id., *Verz. Ind. Arch.* (1854), p. 61; Steud., *Syn. II* (1855), p. 134; Moritzi, *Syst. Verz.*, p. 98; *Mapania multispicata* C. B. Clarke msc. in *Planta javanica* a cl. Zollingero lecta nr. 1511 in herb. Mus. Brit. et Par.; Ridley in *Journ. Singapore Asiat. Soc.* nr. 23 (1891), p. 15, nomen, pro parte; C. B. Clarke in *Hook. f., Fl. Brit. Ind. VI*, p. 682 (1894), quoad synonym.; Koorders, *Exkurs. Fl. Java I* (1911), p. 203; H. Pfeiff. in *Bot. Arch. XII* (1925), p. 449; not of Clarke in *Journ. Linn. Soc. XXXIV* (1898), p. 95.

Rhizoma crassum lignosum, usque ad 1.5 cm diam., radicibus teretibus, 2—3 mm crassis. Folia linearia, coriacea, 13—18 mm lata, ultra metralia, trinervia, basin versus complicata, haud angustata, ultimo basi late membranaceo-marginata, apice acutata ibique margi-

nibus nervoque mediano scabra. Scapi aphylli, 10—35 cm longi, obtuse trigoni, laeves, 1.5—3 mm diam., basi et interdum apice vel medio vaginis paucis laxis viridibus, usque ad 4 cm longis vestiti.

Inflorescentia globosa vel ovoidea vel elliptica, usque ad 2.5 cm longa e spiculis 10—60 dense subcapitato-congestis constructa, bracteis fere 3 subspathaceis inflorescentiae aequilongis vel brevioribus suffulta, bractea quarta paulo remota, vagina caulina potius dicta. Spiculae oblongae acutae, 6—8 mm longae, 2 mm latae, glumis ovatis vel ovato-oblongis, obtusis, 3 mm longis, 2 mm latis, apice et margine membranaceis, pellucidis. Flores 3 mm longi, squamellis binis, navicularibus, more generis in unam connatis, in carina ciliolatis. Stamina bina, filamentibus filiformibus, 5 mm longis, longe exsertis, antheris 1.5 mm longis, linearibus. Ovarium oblongum, cuneatum, complanatum, apice acutatum, 2 mm longum, stylo 1 mm longo, ramis binis 2 mm longis. Nux subglobosa, vix complanata, utrinque acuta, apice apiculata, longitudinaliter et subreticulatim grosse rugosa, 2.5—3 mm longa, fuscescens.

Java: Res. Preanger, prope Tjidadap et Tjibeber, Tjadas Malang (W. F. Winckel nr. 355b, 17-III-1918 [Bog., L.], nomen vern.: *Irateun habajaman*). Res. Batavia, prope Djasinga, ad meridiem, altitudine 400 vel 800 m., in montibus Goenoeng Maneuh et Goenoeng Gedeh (C. A. Backer nr. 23466, 16-II-1918; nr. 10433, 30-II-1913 [Bog.]). Res. Batavia, prope Buitenzorg (Bogor), ad occidentem, Leuwiliang, in montibus Goenoeng Paroengpoeng et Goenoeng Tjipoetih, in silva (R. C. Bakhuizen van den Brink nr. 6961, 6-XI-1927; nr. 6013, 24-IX-1920 [Bog.]). Passir Madang (Zollinger nr. 1511 [BM., P.]).

I have given above a new description based upon recent collections from Java, because the type-material (Zollinger n. 1511) is very poor and there has been so much confusion about the specific epithet *humilis*. The problem, for which species Hasskarl used his nomen nudum *Pandanophyllum humile*, will probably never be solved. The first description (Steudel 1855) is based on Zollinger n. 1511. Miquel too intended to describe this species in 1855, but after changing the name into *Lepironia humilis* (1871) he used it for a very different plant, which is now generally known as *Mapania humilis* Vill., though its valid name is *Mapania petiolata* Clarke. A full discussion of its synonymy will be given in another paper.

Clarke named the specimen collected by Zollinger (nr. 1511) *Mapania multispicata*, but he did not actually publish this name before he had confounded it with another species, collected by Ridley in Singapore (nr. 1714). Ridley published the name as a nomen nudum in 1891 and Clarke described Ridley's specimen in

Hookers Flora of India under the name, which was intended for the javanese plant. Ridley nr. 1714 was described afterwards as *Mapania valida* Ridl.

2. *H. compactum* Nees in *Linnaea* IX (1835), p. 288; nomen; id. in *Nov. Act. Acad. Caes. Leop. natur. cur.* XVI, suppl. 2 (= XIX, suppl. 1), p. 73 (1843); Kunth, *Enum.* II (1837), p. 271; Steud., *Syn.* II (1855), p. 132; Miquel, *Fl. Ned. Ind.* III (1855), p. 333; Boeck. in *Linnaea* XXXVII (1871—1873), p. 127; Merrill in *Philipp. Journ. Sc.* I, suppl. 1 (1906), p. 29; Clarke in *Philipp. Journ. Sc. C. Bot.* II (1907), p. 109; Kük. in *Engl. Bot. Jahrb.* LIX (1925), p. 53; *Mapania Thoreliana* E. G. Camus in *Lecomte, Notulae syst.* I (1910), p. 250; id. in *Lecomte, Fl. gén. Indo-Chine* VII, p. 178; *Hypolytrum xerocarpum* C. B. Clarke in *Kew Bull. Add. Ser.* VIII, 1908, p. 52.

Distribution: Philippine Islands, Indo-China, Brit. N. Borneo, Celebes, Northern New-Guinea, Aru-Islands.

3. *H. capitulatum* Valck. *Sur. msc. ex C. B. Clarke* in *Kew Bull., Add. Ser.* VIII (1908), p. 51. The type-specimen is Waitz s.n. in the Leiden-Herbarium from unknown locality ("Arch. ind.") There is only one other specimen of this species extant, viz. Teysmann nr. 10943 [Bog.], from Western Borneo, Boekit Singkadjang.

4. *H. elegans* (E. G. Camus) Uitt. nov. comb.; *Mapania elegans* E. G. Camus in *Lecomte, Notulae syst.* I (1910), p. 249; id. in *Lecomte, Fl. gén. Indo-Chine* VII, p. 177.

The squamellae are entirely connate, there are 2 stamens and the fruit is 2-keeled so that there can not be any doubt as to the genus. Cochin-china: Pierre [P.], Godefroy [P.].