# STUDIES IN CYPERACEAE-MAPANIEAE VI—VIII

by

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## VI. ON MAPANIA, SECT. PANDANOSCIRPUS UITT.

It is to be hoped, that the genus *Pandanophyllum* Hassk. never will revive, for it is based on a bad generic description and two nomina nuda, *P. palustre* Hassk. *(Harassas tjaai)* and *P. humile* Hassk., the first of which is supposed to indicate *Mapania palustris* (Steud.) Vill., while the other name has brought about much confusion, as it has been used for *Hypolytrum humile* (Steud.) Boeck. as well as for *Mapania humilis* (Miq., partly) Vill.

The first validly published description of *Pandanophyllum humile* Hassk. nomen nudum in Cat. Pl. Hort. Bot. Bog. 1844, p. 297 has been given by Steudel in his Synopsis II (1855), p. 134 and is based upon a specimen collected in Java by Zollinger (n. 1511, Brit. Mus., Paris), belonging to the genus *Hypolytrum*. So this is the type-specimen of *H. humile* (Steud.) Boeck. in Linnaea XXXVII (1871—1873), p. 128. Bentham and Hooker, however, accepting the interpretation of Kurz in Journ. As. Soc. of Bengal XXXVIII, part 2 (1869), p. 82 and the revised opinion of Miquel in his Ill. Fl. Arch. Ind. (1871), p. 61, included both species in their section *Pandanophyllum* of *Mapania* (Gen. Pl. III, 1883, p. 1056). A quarter of a century later C. B. Clarke divided Benth. and Hooker's section into two subgenera, viz. *Pandanophyllum*, including *Mapania humilis* Vill. and *Halostemma* (Wall.), including *Mapania palustris* (Steud.) Vill. Consequently our present section *Pandanophyllum* sensu Clarke probably excludes both species, which originally belonged to it. One might be inclined to rectify the mistake by changing the name of *Halostemma* into *Pandanophyllum* and coining a new name for the other subgenus, but the principal difficulty, caused by the ambiguity of Hasskarl's generic description can not be solved in this manner. This description calls for a bifid style (perhaps referring to *Hypolytrum humile* Boeck.) and

3—5 spikelets (not appropriate to *Mapania palustris* Vill., highly improbable as to *Mapania humilis* Vill. and *Hypolytrum humile* Boeck.). The only way out of the difficulty is to reject the name *Pandanophyllum* as a nomen dubium in the sense of the rules of nomenclature (art. 63) and to rename the subgenus *Pandanophyllum* Benth. et Hook., sensu Clarke. I propose the name *Pandanoscirpus*.

**Mapania**, subgenus **Pandanoscirpus** Uitt. nov. subg. Folia scapum aphyllum basi vaginatum superantia. Bracteae capite breviores vel parum longiores. Spicula singula, raro spiculis geminatis vel ternis. Stylus 3-fidus.

Species typica (typus) subgeneris: **Mapania petiolata** Clarke = *M. humilis* (Miq., p.p., non Steud.) Vill. Species fere 18, asiaticae.

**Key to the species.**

1a. Leaves tapering at the top ..... 2
b. Leaves caudate at the top ..... 5
2a. Scapes rather robust, 2—5 mm in diameter ..... 3
b. Scapes very slender, 1/3—2/3 mm in diameter. 14. **M. monostachya** Uitt.
3a. Fruit with more or less fleshy exocarp ..... 4
b. Fruit with dry exocarp. Species 1—11. See Rec. Trav. Bot. Neerl. XXXIII (1936), p. 145—146; also in Meded. Bot. Mus. en Herb. n. 26.
4a. Spikelets 2—2.5 cm long ..... 12. **M. papuana** Ridl.
b. Spikelets 3—4 cm long ..... 13. **M. baccifera** Clarke.
5a. Leaves gradually narrowed to the base ..... 6
b. Leaves contracted into a pseudo-petiole ..... 7
6a. Leaves up to 2.5 cm broad, spikelet about 2 cm long. 15. **M. borneensis** Merr.
b. Leaves up to 4.5 cm broad. Spikelets 1 cm long. 16. **M. Richardsii** Uitt.
7a. Stoloniferous ..... 17. **M. stolonifera** Uitt.
b. Not stoloniferous ..... 8
8a. Scapes very slender, about 0.5 mm in diameter. Spikelets 1 cm long. 21. **M. petiolata** Clarke, var. **pumila** Uitt.
b. Scapes rather or very robust. Spikelets 2—3 cm long .. 9
9a. Leaf-blades oblong to oblong-linear, 3—5 times as long as broad. 20. **M. petiolata** Clarke, var. **cuspidata** (Miq.) Uitt.
b. Leaf-blades linear, many times longer than broad .... 10
10a. Leaves usually 2—3 cm broad. 19. **M. petiolata** Clarke, var. **angustifolia** Uitt.
b. Leaves 3.5—6 cm broad. .... 18. **M. petiolata** Clarke.

12. **M. papuana** Ridl. in Trans. Linn. Soc. 2nd Ser. Bot. IX, 2 (1916), p. 246; Uitt. in Rec. Trav. Bot. Neerl. XXXIII (1936), p. 150; also in Med. Bot. Mus. en Herb. n. 26.

13. **M. baccifera** Clarke in Kew Bull. Add. Ser. VIII (1908), p. 53; id., Ill. Cyp. (1909), Tab. CXV, fig. 8—9. Clarke placed this species in the subg. Halostemma. Solomon Islands (Guppy [K.]); New Guinea: Lorentz River, Geluksheuvel (v. Roemer n. 450, 7 Oct. 1909 [Bog.]).

14—16. See Uitt., l.c. XXXII (1935), p. 194—197; also in Med. Bot. Mus. en Herb. n. 17.

17. **Mapania stolonifera** Uitt. nov. spec.

E sectione *Pandanophylli, Mapaniae humili* (Hassk. ex. Miq.) Vill. affinis, a qua stolonibus horizontalibus, scapis gracilibus, spiculis minoribus, foliis angustioribus differt.

Stolones horizontales vel oblique ascendentes, recti vel curvati, usque ad 9 cm longi, tenues, 3 mm diametro, squamis scariosis pallidis dense obtecti, internodiis crebris, 2—5 mm longis, apice in pullos foliorum subbulbosos radiciferos desinentes. Radices lignosae decorticatae 2 mm diametro. Foliorum fascis basi vaginis nonnullis membranaceis pallidis scariosis gradatim in folia transeuntibus vestitus. Folia ut in Mapaniae humilis var. angustifolia, scilicet 2—2.75 mm lata, 20—30 cm longa, trinervia, margine laevia, apice in acumen flagelliforme triquetrum scaberrimum usque ad 7 cm longum contracta, basi sensim in pseudopetiolum angustum complicatum, usque ad 20 cm longum angustata, ima basi in vaginam anguste scarioso-marginatam paullo dilatata. Scapi e stolonibus praesertim apicem versus vel apice extremo sub foliorum crista erumpentes, gracillimi, 6—10 cm longi (in cotypis interdum etiam breviores), 0.5—1 mm crassi, parte inferiore pollicis spatio vaginis nonnullis (5—8) laxis striatulis tecti. Spicula fusiformis, 1—1.5 cm longa, bracteis ellipticis multistriatis membranaceis margine scariosis inferioribus laxioribus vel subremotis totam spiculam amplectentes. Flores 8 mm longi, squamellis 6, binis lateralibus navicularibus apice in carina setulosis, tertia anteriore lineare concava, ternis interioribus linearibus flaccidis. Stamina tria in axilla squamellarum exteriorum, antheribus 4 mm longis. Stylus longus apice trifidus. Nux ellipsoidea utrinque acuminata, 4—5 mm longa, grisea nigro-maculata.

Borneo orientalis: In provincia („afdeeling") Samarinda

dicta, in ditione occidentale, cui nomen Onderafdeeling West-Koetai, prope Long-liah-leng, alt. 250 m, in faucibus parvis humidis silvae primaevae legit. F. H. Endert (n. 3001 30 VIII 1925, typus speciei in herb. Bogoriense (Buitenzorg));
Cotypi: Endert n. 2839 in eodem ditione, prope Long-temelen, alt. 400 m. in colle silva primaeva tecto, 24 VIII 1925 [Bog.]; Jaheri n. 772 in Borneo centrali, loco ignoto (Soengei dengen) 1896—97 [Bog.].

18. **M. petiolata** Clarke in Kew Bull. Add. Ser. VIII (1908), p. 54; *M. humilis* Villar in Naves et Villar, Nov. App. ad Flor. Philipp. (1880), p. 309; also of all later authors, as Clarke, Ridley, Merrill, etc.; *Lepironia humilis* Miq., Ill. Fl. Arch. Ind. (1871), p. 61, partly; *Pandanophyllum humile* Kurz in Journ. As. Soc. Bengal XXXVIII, part 2 (1869), p. 82; not of Steud., Syn. II (1855), p. 134; not of Miq., Fl. Ind. Bat. III (1855, published later than Steudels Synopsis); not of Zolling., Verz. Ind. Arch. II (1854), p. 61 *nom. nud.;* perhaps of Hassk., Cat. Plant. Hort. Bog. (1844), p. 297, *nom. nud.*, reprinted in Walpers Ann. I (1848—1849), p. 753; *P. Zippelianum Kurz* in Tijdschr. Nat. Ver. Ned. Ind. XXVII (1864), p. 224, *nom. nud.* cited by Teysmann et Binnendijk, Cat. Pl. Hort. Bog. (1866), p. 23; Hassk. in Bot. Zeit. 23, nr. 25 (1865); *P. Wendlandi* hort. ex Gard. Chron. New. Ser. XXI (1884), p. 711, *nom. nud.* („like *P. humile*, but darker in colour"); *Mapania humilis*, var. *petiolata* Ridley, Fl. Mal. Pen. V (1925), p. 174; Pfeiffer in Mitt. Allg. Bot. Inst. Hamb. VII (1928), p. 174.

It is very awkward, that a so well-known name as *M. humilis* must be rejected, but there is no other possibility. The specific epithet *humilis* is occupied by *Hypolytrum humile* (Steud.) Boeck., based on *Pandanophyllum humile* Steud. Steudel was the first to attach a description to Hasskarls nomen nudum. Likewise the description published by Miquel in the same year (but later in date, as is clear by his citing Steudel's work) referred to *Hypolytrum* though he used the specific epithet later for his *Lepironia humilis*, which includes different forms of *Mapania petiolata*. I can not decide which species Hasskarl meant with his name. He could not even tell it himself, when D. Oliver wrote a letter to him enclosing a leaf and some spikelets of *M. petiolata*, asking for his opinion on the identity of this species. He answered, that he had returned from Java without any herbarium and that he had not seen the plant, since he published the first description. He was not sure whether the specimen in question belonged to *Hypolytrum*

*humile* or to *H. compactum* or perhaps to *H. latifolium*. There is no type-material in the herbaria of Utrecht, Buitenzorg or Leiden. The oldest specimen in the Utrecht herbarium (n. 35627) consists of 12 leaves of *M. petiolata* and bears two labels, both in Miquels handwriting. On one of them is written: „*Pandanophyllum humile HB.*" On the other: „*Lepironia humilis Miq (L. cuspidata olim. Pandanophyllum humile Hassk.)*" The specimen may be considered as the type of *Lepironia humilis*, but there is no reason to take it for the type of Hasskarls nomen nudum.

It is evident, that the type of *Pandanophyllum humile* Hassk. ex Steud. can be nothing else than the specimen cited by Steudel, Zollinger n. 1511. Moritzi (Syst. Verz. Zoll., 1845—1846, p. 98) was the first botanist, who suspected it to be a kind of *Hypolytrum* („*verosimiliter Hypolytrum compactum Nees*") and Boeckeler transferred id actually to the latter genus in Linnaea XXXVII (1871—1873), p. 128. I have given a new description of this species and its differences with the other asiatic species of Hypolytrum with a compact inflorescence in this periodical, p. 153.

The name *Mapania humilis* Vill. is thus invalid, because the specific epithet, on transference to another generic name, has been applied erroneously to a different plant (art. 54 of the Rules of Nomenclature III, 1935).

The earliest validly published name for our species is *M. petiolata* Clarke, described from Borneo, Matang. (Ridley). Ridley identified it already in his Fl. Mal. Pen. V (1925), p. 174 as „only a large fully developed form of *M. humilis*" and treated it as a variety. Pfeiffer too, without knowing Ridley's publication, described it in Mitt. Allg. Bot. Inst. Hamburg VII (1928), p. 174 as *M. humilis var. petiolata Pfeiff.* I reckoned *Pandanophyllum Wendlandi* hort. among the nomina nuda and left out of consideration the names given to the short-leaved variety (*Lepironia cuspidata* Miq.).

This species is very variable. I tried to class the extreme forms into 3 varieties, but I am quite aware of the insufficiency of this classification and of the existence of intermediate forms.

The typical form is characterized by very long and broad leaves, abruptly contracted at either end, with usually 10—20 cm long pseudo-petioles and 2—3 cm long spikelets. I have seen the following specimens:

*Java.* Res. Batavia (Dakkus n. 34; Bakhuizen v. d. Brink n. 4238; Backer n. 6073, 6316; Koorders n. 30803, all in herb. Bog.; Zippelius [L.]); Res. Preanger (Backer n. 23211 25545, 22922; Winckel n. 1733b; Bak-

huizen v. d. Brink n. 6014, 3037 [also in L.], all in herb. Bog.); Res. Bantam (Koorders 41191b [L., Bog.]); Locality and collector unknown: L. 909, 15-72 & 73. Also cultivated.

*Borneo.* W. Borneo: Karimata Islands (Mondi n. 87 [Bog., L.]); S. E. Borneo: Tanahboemboe, Batoelitjin (v. Slooten n. 2220 [Bog., L.]); Sandakan (Elmer n. 20144 [Bog., U., L.]; Ramos n. 1334 [Bog., L., P.]).

*Sumatra.* Res. Lampong Districts (Iboet n. 157 [Bog.]); Res. Eastcoast of Sumatra (Lörzing & Jochems n. 7413 [Bog.]; Lörzing n. 5795 [Bog.]); Res. Westcoast of Sumatra (Beccari n. 651 [L.]); Mentawei Islands, Sipora (Boden-Kloss n. 14815 [Bog.]; n. 530 [Bog., L.]); Siberoet (Boden-Kloss n. 11442 [Bog.]; Iboet n. 111 [Bog.], the leaves of the first specimen are 20-26 cm long and 4 cm broad or even shorter, more or less connecting the typical form with the specimens from the Batoe Islands, which are intermediate between the typical form and the short-leaved variety); Res. Riau and Dependencies. Anambas Islands, Siantan (v. Steenis n. 724 [Bog.]); Res. Banka. Banka (Bünnemeyer n. 2198 [Bog., L.]).

*Selebes.* Eastern Selebes, near Kendari (Kjellberg n. 636 [Bog.]).

*Ambon.* Salahoetoe (Rant n. 641 [Bog.]). *New Guinea.* Northern part. Idenburg River, Prauwenbivak (Lam n. 1017 [Bog.]).

19. **Mapania petiolata** Clarke, var. **angustifolia** Uitt. nov. var. Foliis angustioribus, 2—3 cm latis, interdum usque ad 4 cm latis.

Res. Menado: Talaud Islands, Salibaboe, Goenoeng Ajambana (Lam. n. 3141, 23 May 1926, at 260 m, type-specimen of the variety [Bog.], vernacular name: nanasaka); Talaud Islands, Karakelong (Lam n. 2749, 2 May 1926, at 100 m [Bog.]); Res. Ternate and Dependencies: Morotai Island, Goenoeng Sabatar (Lam n. 3546, 22 June 1926, at 110 m [Bog.], vernacular name: héhéwéhé mabèka); Halmahera, near Singanoli (Forsten, July 1841 [L.]); Res. Ambon. Ambon, Laha (Forsten [L.]); Ceram, near Wai Koea (Kornassi n. 22, 25 Aug. 1917 [Bog.], vernacular name: kihadió).

Distribution: Philippine Islands, where only this variety has been found:

Bureau of Science nrs: 1049 [U.]; 1487 [Bog.]; 4030 [Bog.]; 7222 [L., Bog., P., BM.]; 10247 [L.]; 10327 [L., Bog., BM.]; 12380 [L., Bog., BM.]; 14239 [L., P.]; 16301 [L., U., P., Bog.]; 18311 [L., Bog., U., P.]; 20144 [P.]; 23621 [L., BM.]; 28109 [P.]; 29741 [Bog.]; 29777 [P.]; 37411 [P.]; 41754 [L., P.].

20. **Mapania petiolata** Clarke, var. **cuspidata** (Miq.) Uitt. nov. comb.; *Lepironia cuspidata* Miq., Fl. Ind. Bat. Suppl. I (1860), p. 603; *L. humilis* Miq. Ill. Fl. Arch. p. 61, pro parte et quoad figuram Pl. XXIII; *Mapania lucida* N. E. Br. in Illustr. Hort. XXXII (1885), p. 77, t. 557; *M. triquetra* Ridley in Journ. Straits Branch Roy. As. Soc. nr. 41 (1903), p. 51; id. l. c., nr. 46 (1906), p. 227; id., Mater. Fl. Mal. Pen. III (1907), p. 106; id., Fl. Mal. Pen. V (1925), p. 174; *M. platyphylla* Merr. in Philipp. Journ. Sc. Sect. C. Bot. XI (1916), p. 54.

Leaf-blades oblong to oblong-linear, 3—5 times as long as broad, abruptly contracted at the base and at the top. Petiole with the leaf-sheath as long as the blade, slender, 1.5—3 mm broad. Scapes slender with about 15 mm long spikelets.

*Sumatra.* Eastern Sumatra. Locality unknown: Korthals n. 908 (type specimen. HLB 908, 253-1012, leaves 10-11 × 3-3.5 cm); Korthals 908 bis (HLB 909, 15-95 & 909, 15-96, leaves 14-24 × 4-5.5 cm); Korthals s.n. (HLB 908, 253-1033, leaves 13-21 × 4-5.5); Res. Eastcoast of Sumatra: Langkat, Batang Sarangan (Beumee n. A 491, Nov. 1927 [Bog.], leaves 21 × 4 cm, pet. 10 cm); Res. Westcoast of Sumatra: Batoe Islands (Raap n. 208, 17 Sept. 1896 & Raap n. 271, 21 Sept. 1896 [Bog.], leaves 19-32 × 4.5 cm, pet. 13 cm). The last mentioned specimens connect the variety with the typical form of the species.

*Java.* Res. Bantam: Lebak, Bodjongmanik, Goenoeng Liman (Koorders n. 40861b, 14 June 1912, very rare [Bog.], leaves 21 × 4.5-5 cm, pet. 17-20 cm).

*Borneo:* Soengei Tepaetsen (Jaheri n. 916, 1896-97 [Bog.], leaves 14-15 × 3.75-4 cm, pet. 16-24 cm).

Distribution: Borneo, Sarawak; S. E. Borneo; Malay Peninsula.

21. **Mapania petiolata** Clarke, var. **pumila** Uitt. nov. var.

Differt a forma typica speciei habitu pumilo, foliis pusillis, scapis gracillimis, spicula anguste oblonga parva.

Borneo orientalis: In Provincia Samarinda dicta, in ditione occidentale, cui nomen West-Koetai, prope Kemoel, alt. 1200 m, vulgatissima in silva primaeva. Legit F. H. Endert n. 3557, 26 IX 1925 (Typus varietatis in herb. Bogoriense, Buitenzorg).

The type-collection consists of 7 specimens. The stem is 20-10 cm high, densely foliate. Blades 5 (3-8) cm long, 1-2 cm wide, with a 1.5-3 cm long acumen and 0.5-3 cm long petioles, gradually merging into the long and narrow sheaths. Scapes 5-10 cm long, filiform, about 0.5 mm in diameter. Spikelets about 1 cm long.

British North Borneo: Mt. Kinabalu (J. & M. S. Clemens n. 30064, in woods near Dallas, at about 1000 m, Nov.-Dec. 1932 [Bog.] leaves 7-13 cm long; J. & M. S. Clemens n. 27028, at about 1000 m, near Dallas, 10 XI 1931 [Bog.], leaves up to 16 cm long).

To this variety belongs a plant, cultivated in the Buitenzorg Gardens and collected in Borneo by Dr. Nieuwenhuis as n. 1993. Its leaves are 11-19 cm long and 6-9 mm broad.

Very aberrant is a specimen cultivated in the Buitenzorg Gardens under n. XI B (XI) 14. Its leaves are up to 50 cm long and 6-13 mm wide, but the pseudopetiole is hardly differentiated.

A specimen from Sarawak (Nat. coll. n. 990 [Bog., L.]), distributed by the Manila Bureau of Science, probably connects this variety with the typical form of the species. Its leaves are 4-18 cm long and 1-3 cm wide. The acumen is up to 4 cm long and the broad leafsheath is sharply distinct from the petiole. Both specimens seen were sterile.

Much like the two last-mentioned specimens is Teysmann n. 11591 [Bog.].

from West Borneo, Pontianak, Landak, near Parit Demak. In this specimen too the leaves are densely crowded, 17-21 cm long, up to 2.75 cm wide, with a very short petiole (about 1 cm) and 2 cm wide, nearly obovate, sheaths; sterile.

Rather aberrant and perhaps diseased is another sterile specimen, collected by Teysmann, somewhere in Borneo (n. 11002), with narrower and longer leaves and petioles and blackish brown, up to 6 cm long and 3 cm wide sheaths.

## VII. ON MAPANIA, SECT. HALOSTEMMA CLARKE.

The section *Halostemma* was founded by Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 681 and based upon 5 species, viz. 1. *M. silhetensis* Clarke; 2. *M. palustris* „Benth."; 3. *M. Kurzii* Clarke; 4. *M. andamanica* Clarke; 5. *M. multispicata* Clarke. If weexclude the last mentioned species, which is *Hypolytrum humile* (Steud.) Boeck., only two of them had been published before (1 and 2), both as *Pandanophyllum palustre* Steud. or its variety *silhetana* Kurz. It is obvious, that we should regard *M. palustris* as the type-species of the section. In his enumeration of the Cyperaceae in Kew Bull. Add. Ser. VIII (1908), he added, besides two african species, 4 more asiatic ones, viz. *M. longispica* Ridl., *M. debilis* Clarke, *M. radians* Clarke and *M. baccifera* Clarke. The first one is treated in this paper as a variety of *M. Kurzii* Clarke; the third one has been made the type-species of my new genus *Paramapania* and the last mentioned species belongs to another section (see p. 279). Since 1908 eight more species have been described, which belong to this section. *M. valida* Ridl. has been overlooked bij Clarke and *M. albescens* Clarke was placed in the wrong section. As so many changes have taken place, a new synopsis of this section will not be superfluous. The african species are left out of consideration here. The four bornean species with very narrow leaves: *M. debilis* Clarke, *M. gracilipes* Merr., *M. flagellaris* Uitt. and *M. angustifolia* Uitt. are dealt with in Rec. Trav. Bot. Neerl. XXXII (1935), p. 197-199, also in Med. Bot. Mus. en Herb. n. 17 (1935); *M. inopinata* Uitt., with petioled leaves, was described in this volume, p. 151. In the following pages I shall confine myself to the third group of species, namely those which are very closely related with *M. palustris*. The numbers in the following key refer to the critical remarks and the descriptions of the new species.

1a. Spikelets 25—100 in a dense semiglobose head ..... 2
b. Spikelets less numerous ..... 3

2a. Spikelets straw-coloured. Style trifid. 1. **M. palustris** (Steud.) VIII.
b. Spikelets brown. Style usually bifid. 2. **M. Foxworthyi** Merr.
3a. Spikelets straw-coloured ..... 4
b. Spikelets reddish-brown ..... 11. **M. Kurzii** Clarke.
4a. Spikelets 2—3 cm long ..... 5
b. Spikelets 1—2 cm long ..... 9
5a. Lateral nerves sharply prominent above, impressed beneath. Scapes in anthesis up to 5 cm long, in fruit up to 18 cm. ..... 4. **M. affinis** Merr.
b. Lateral nerves hardly distinct above, indistinct beneath. Scapes longer ..... 6
6a. Spikelets 3 cm long, more than 10 in a head. 5. **M. grandiceps** Kük.
b. Spikelets 2—2.5 cm long, 1—6 in a head ..... 7
7a. Leaves subcoriaceous. Spikelets ovoid. 7. **M. sinensis** Uitt.
b. Leaves coriaceous or very coriaceous. Spikelets oblong .. 8
8a. Leaves very coriaceous. Bracts of the head narrow triangular. ..... 6. **M. silhetensis** Clarke.
b. Leaves coriaceous. Bracts of the head broad triangular. 3. **M. javana** Uitt.
9a. Leaves coriaceous, gradually narrowed to the top .... 10
b. Leaves subcoriaceous, rather abruptly ending in a slender tail. ..... 8. **M. banahaensis** Elmer.
10a. Leaves green. ..... 9. **M. andamanica** Clarke.
b. Leaves very pale, glaucescent. 10. **M. albescens** Clarke.

1. **Mapania palustris** (Hassk. ex Steud.) Villar in Naves et Villar, Nov. App. Fl. Philip. (1880), p. 309; C. B. Clarke in Hook f., Fl. Brit. Ind. VI (1894), p. 681, crediting Bentham with the authorship of the new combination, though Benth. in his Gen. Pl. III (1883), p. 1056 only indicated *Pandanophyllum* as a synonym of *Mapania*, without actually publishing the new name. Clarke overlooked the first publication of Hasskarls nomen nudum by Steudel and he took a specimen of *M. macrocephala* (Gaud.) Schum. in the British Museum, collected by Teijsmann in the Moluccas, for the genuine *Pandanophyllum palustre* Hassk. from Java. This specimen was sent by Teijsmann to H. F. Hance, who gave it to the British Museum in 1887 (n. 14065). On the label is written: „*Pandanophyllum, Hass. palustre Haszk. N. O. Cyperaceae. Java. Accepi a cl. Teijsmann, a 1867.*"; Clarke in Journ

Linn. Soc. 34 (1898), p. 95; id., Ill. Cyp. (1909), Tab. CIX; Ridley in Journ. Straits Branch Roy. As. Soc. nr. 23 (1891), p. 15; id., Mater. Fl. Mal. Pen. III (1907), p. 103; id., Fl. Mal. Pen. V (1925), p. 172; Merril in Philipp. Journ. Sc. Sect. C. Bot. IX (1914), p. 267; id., Philipp. Fl. Pl. I (1923), p. 132; Pfeiff. in Bot. Arch. XII (1925), p. 449, figg. 7, 34, 51; Uitt. in Rec. Trav. Bot. Neerl. XXXII (1935), p. 194, also in Med. Bot. Mus. en Herb. Utr. n. 17; *Pandanophyllum palustre* Hassk., Cat. Pl. Hort. Bog. (1844), p. 297 (nomen); Zollinger, Syst. Verz. I (1854), p. 61 (nomen); Moritzi, Syst. Verz. Zoll. (1845—1846), p. 99 nomen); Steud., Syn. II (1855), p. 134; Miq., Fl. Ind. Bat. III (1855), p. 334; Boeck. in Linnaea XXXVII (1871—1873), p. 137; *Pandanophyllum palustre* var. a *Malesica* Kurz in Journ. As. Soc. Bengal XXXVIII, part 2 (1869), p. 78; *Lepironia palustris* Miq., Ill. Fl. Arch. Ind. (1871), p. 63, Pl. XXV.

Type-specimen: Zollinger n. 929 [BM., Br.].

*Java:* Res. Bantam: Bodjongmanik, G. Liman (Koorders n. 40834b 14 VI 1912 [Bog.], vernac. name: *Harashas);* Res. Batavia: Goenoeng Karang Gantoengan, north of Poentjak, near Buitenzorg (Backer n. 6300, 31 XII 1912 [Bog.]); Tjanten, south of Leuwiliang (Backer n. 26005, 2 IX 1918 [Bog.]); Goenoeng Salak, above Waroengloa (v. Steenis n. 135, 21 XII 1927 [Bog.]); Goenoeng Salak, Tjiapoes (Bakhuizen v. d. Brink n. 4049, 22 VIII 1920 [Bog.]); Goenoeng Paniisan, at 650 m (Bakhuizen v. d. Brink n. 6151, 9 XII 1923 [Bog.]); without locality: Zippelius s.n. [L.]; Bot. Gard. Buitenzorg, cultivated: coll. unknown [U.].

*Sumatra.* Res. Westcoast of Sumatra: L. Kota, Soengai Koeriman, at 900 m (Bünnemeijer n. 3253, 24 VI 1918 [Bog.] affected by insect larvae and with abnormally developed spikelets, up to 4 cm long sterile); Agam, near Brani (Bünnemeijer n. 3138, 20 VI 1918 [Bog.], poorly developed, leaves only 2 cm broad); Loeboeksikaping, Ophir district, south-west of Taloe (Bünnemeijer n. 151, 12 IV 1917 [Bog.], diseased); Padang, Abita, near Ajer mantjoer, at 360 m (Beccari n. 100, Aug. 1878 [L.], inflorescence substituted by a lump of galls, containing pupae).

*Borneo.* East Borneo: West-Koetai, near Long Poehoes, at 1000 m (Endert n. 4920, 14 XI 1925 [Bog.]); West Borneo: Sintang, Goenoeng Kenepai (Hallier n. 1877, 1893—94 [Bog.]); locality unknown: Nieuwenhuis n. 961 (Cultivated in the Bot. Gard. at Buitenzorg [Bog.]); British Borneo: Kinabalu, near Tenompok, at 5000 ft. (Clemens n. 28209, 3 II 1932 [Bog.]).

2. **Mapania Foxworthyi** Merr. in Philipp. Journ. Sc. Sect. C. Bot. XI (1916), p. 53; I have not seen the type-specimen (Foxworthy n. 392), but another plant from the same locality, which corresponds very well with the description, but for the leaves, which are slighly broader (2.75 cm). The scape is 80 cm long and the style is bifid. Sarawak, Mount Poi (J. & M. S. Clemens

n. 20158 [Bog.]). A third specimen, collected in Sarawak by Clemens (n. 21848 [Bog.]) has some resemblance in the colour of the spikelets, but they are 4 cm long. The style is trifid and the leaves are 3.25 cm broad. If it is not diseased, it will probably be a new species. Clemens n. 40041 too belongs probably to this species. The spikelets are for the greater part eaten away by insects and substituted by 5 mm long, oblong-linear cocoons, containing pupae. It is found in the Colombon basin, Numeruk creek, at 4000 ft., 18 Aug. 1933 [Bog.].

3. **Mapania javana** Uitt. nov. spec. *Mapaniae palustri* affinis, sed foliis basi complicatis dorso plerumque rotundatis nec carinatis, scapis praelongis plerumque 50—70 cm longis, capite ovoideo e spiculis paucis (3—5) majoribus, facile 2 cm longis, 1 cm latis composito. Patria: Java, Res. Preanger. Typus: Backer n. 22937, cuius pars altera in herb. Lugd. Bat., altera in Bog. conservatur.

*Java.* Res. Preanger: Tjidadap, south of Tjibeber, alt. 900—1000 m (Backer n. 22937, 9 IX 1917 [Bog., L.]; Winckel n. 17818b, 1 XI 1923 [Bog.]; Backer n. 22756, 17 VI 1917 [Bog.]; Bakhuizen v. d. Brink n. 2941, 4 IV 1917 [Bog.]); East Java: without locality (Ploem s.n. [L.]).

Kurz, l.c. (1869) described this species together with a specimen from Silhet (*M. silhetensis* Clarke) and another from Singapore (*M. Wallichii* Clarke) as *Pandanophyllum palustre* var. *Silhetana.* Miquel mentioned it in his Ill. Fl. Arch. Ind. (1871), p. 63 as „une variété à capitules oblongues". Hasskarl may have meant this species with his nomen nudum *P. palustre*, which would account for the „spiculis 3—5" mentioned in his generic description. Be that as it may, the first description (by Steudel) indicates Zollinger n. 929 as the type of *P. palustre* and this specimen claims therefore the name *Mapania palustris* (Hassk. ex Steud.) Vill.

4. **Mapania affinis** Merr. in Journ. As. Soc. Straits Br. 85 (1922), p. 157; id., Enum. Philipp. Pl. I (1923), p. 131.

*Borneo.* Brit. North Borneo near Sandakan (Ramos n. 1596 [K.], type-number); Locality unknown („Liang gagang"): Hallier n. 2805 [Bog.].

Merrill remarks, that the peduncles are entirely glabrous in his material, while they are always furfuraceous in *M. palustris.* This does not hold true. They are often glabrous in the last-mentioned species. The specimen collected by Hallier does not match neither in this respect.

5. **Mapania grandiceps** Kük. in Engl. Jahrb. 59 (1924), p. 55. The spikelets are somewhat larger and less numerous than in

*M. palustris*. The leaves of *M. palustris* however are sometimes even broader (up to 6.75 cm).

6. **Mapania silhetensis** Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 681; id. in Journ. Linn. Soc. 34 (1898), p. 94; *Pandanophyllum palustre*, var. *Silhetana* Kurz in Journ. As. Soc. Bengal XXXVIII, part 2 (1869), p. 78, pro parte.

Silhet (Wallich n. 4474, [K., BM.]; Assam: Luckimpore (Clarke n. 37922 [K.]).

7. **Mapania sinensis** Uitt. nov. spec. Folia tenuiter coriacea, trinervia, 3.5 cm lata, margine et apicem versus in carina serrulata, supra glauca, subtus pallide glauca, basin versus straminea pallida, apice subabrupte in acumen scabrum angustata. Scapi 25—45 cm longi, subtrigoni, 3 mm diametro, striati. Caput usque 4.5 cm latum, e 2—4 spiculis ovoideis pallide stramineis compositum, bracteis anguste triangularibus 2 cm longis suffultum. Spiculae 2.25—2.5 cm longa, 1—1.5 cm lata, glumis tenuioribus, se laxe tegentibus. Ceteroquin ut in *M. palustre*.

*China* meridionalis, prov. Kwangsi. Yao shan. Legunt S.S. Sin et K.K. Whang, in aestate anni 1928, n. IX 49 (Typus in herb. berolinense).

8. **Mapania banahaensis** Elm. in Leafl. Philipp. Bot. II, art. 29 (1909), p. 574; *M. Kurzii* „Clarke" Merr., Enum. Philipp. Pl. I (1923), p. 132, not of Clarke. I have not seen the type-specimen, but the numerous specimens seen from seven different numbers from Merrill's list are hardly different from each other.

Philippine Islands: Alabat (Merrill n. 10505 [BM., L., P., Bog.]); Palawan (Merrill n. 7220 [P., BM.]); Catanduanes (Ramos & Edano n. 30318 [P.]); Luzon (Elmer n. 15519 [U., L., P., Bog.] & n. 16222 [L., Bog., U., P.]); Polillo (Ramos n. 10248 [Bog., L.]).

9. **Mapania andamanica** Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 681; id. in Journ. Linn. Soc. 34 (1898), p. 95.

Andaman Islands: Helfer (Kew Distribution n. 6298 [K.]); Kurz [K.]; Res. Riau and Dependencies: Natoena Islands, Poelautoedjoeh, Boengoeran, Goenoeng Ranai, 700-900 m (Bünnemeijer n. 5924, 21 V 1919 [Bog.]; v. Steenis n. 1401, 15 IV 1928 [Bog.]. The leaves are brighter green than those of the specimens from the Andaman Islands).

10. **Mapania albescens** Clarke in Kew Bull. Add. Ser. VIII (1908), p. 54; Ridley in Fl. Mal. Penins. V (1925), p. 172.

Malay Peninsula: Perak (Ridley n. 7258 [K.] & n. 10317).

There is no other difference with the preceding species than the extremely pale glaucous colour of leaves and scapes.

11. **Mapania Kurzii** Clarke in Hook. f., Fl. Brit. Ind. VI (1894),

p. 681; id. in Journ. Linn. Soc. 34 (1898), p. 95; Ridl., Mater. Fl. Mal. Pen. III (1907), p. 104; id., Fl. Mal. Pen. V (1925), p. 172; not of Merr., Enum. Philipp. Pl. I (1923), p. 132; *M. longispica* Ridl. in Journ. Straits Br. Roy. As. Soc. n. 44 (1905), p. 205; id., Mater. Fl. Mal. Pen. III (1907), p. 104; id., Fl. Mal. Pen. V (1925), p. 172; *M. multispicata* Clarke in Hook. f., Fl. Brit. Ind. VI (1894), p. 682, partly; id. in Journ. Linn. Soc. 34 (1898), p. 95, partly; *M. valida* Ridl. in Journ. Straits Br. Roy. As. Soc. n. 44 (1905), p. 205, partly; id., Mater Fl. Mal Pen. III (1907), p. 104, partly; id. Fl. Mal. Pen. V (1925), p. 172, partly.

– The length of the spikelet varies between 1 cm (typical form) and 3 cm *(M. longispica)*, often in the same head. The name *M. multispicata*, intended by Clarke for the type of *Hypolytrum humile* (Steud.) Boeck. (Zollinger n. 1511) from Java, was first published by him with a description of a specimen of *M. Kurzii* (Ridley n. 1714 [K.]). The same plant is the type of *M. valida* Ridley and was determined as *M. tenuiscapa* Clarke by Clarke in 1903.

Malay Peninsula: Griffith n. 6356 [K.]; Curtis [K.]; King n. 2864 [L.]; Ridley n. 1714 [K.]; Ridley s.n. [Bog.], n. 14355 [BM.], 11424 [BM.], 11424 [BM.], 11879 [K.].

**Summary.** The genus *Pandanophyllum* Hassk. 1844 included 2 species: (1) *P. palustrie* Hassk. nom. nudum and (2) *P. humile* Hassk. nom. nudum. Hasskarls specimens are lost. According to the generic description he may have meant: (1) *Mapania javana* Uitt. and (2) *Hypolytrum humile* (Steud.) Boeck. It is proposed to reject the name *Pandanophyllum* as a nomen dubium and to give the name *Pandanoscirpus* to the section *Pandanophyllum* sensu Clarke of the genus *Mapania*, which includes neither of these species. *Mapania palustris* (Steud.) Vill. should be taken as the type of the section *Halostemma* Clarke. Critical notes and keys to the East Indian species of these sections are given.

VIII. A NEW CAPITULARIA FROM THE SOLOMON ISLANDS.

**Capitularia foliata** Uitt. nov. spec. A *Capitularia involucrata* Valck. Sur. caulibus robustioribus basi foliatis, inflorescentia plurispicata, bracteis aristatis primo visu diversa.

Rhizoma lignosum repens, 1 cm crassum, squamis tectum. Culmus robustus, 85 cm altus, pentagonus, lateribus valde excavatis, foliorum modo sed indistinctius reticulato-rugosus, basi vaginis nonnullis pallide spadiceis nitidis foliisque praeditus, apice inflorescentia

bracteis foliiformibus involucrata terminatus. Folia longissima, linearia, acuminata, subcoriacea, viridia, glaucescentia, in planta sicca palmarum modo plicata, nervis trinis prominentibus, apicem versus acutissime tricarinatis et marginibus reflexis, minute serrulatis scabris, reticulato-venosa, usque ad 210 cm longa, 2 cm lata, apice in acumen scabriusculum fere 10 cm longum subsensim desinentia. Inflorescentia 4 cm diametro, bracteis foliiformibus 7 valde inaequilongis suffulta, inferiore longissima, 130 cm longa, basi spadiceomaculata, carinis in gibbas tres incrassatis, secunda 50 cm longa, ceteris multo minoribus. Spicae (vel forsan potius spiculae vocandae) 7, ovoideis, 2.5—3 cm longae, 1.5—2 cm latae, spadiceae, bracteārum aristis longis rigidis echinatae. Bracteae (sive glumae) subcoriaceae, 2 cm longae, parte basali fere quadrata tenuiore, albida, 1 cm longa, 1 cm vel ultra lata, parte superiore rigidiore spadicea triangulari in aristam 0.5 cm longam rigidissimam spadiceam subito contracta. Spiculae (mea sententia pro floribus habendae) androgynae, floribus masculinis monandris numerosis, fere 15, femineo uno (quem ovarium vocare mallem) centrali, 12—15 mm longae, oblongo-cuneatae, applanatae, saepe convexae. Glumae (squamellae) exteriores binae steriles, laterales, subspathulatae, cucullatae, membranaceae, albidae, apice coloratae, dorso carinatae, carina usque ad 0,5 mm alta, apice in cristam 1 mm latam coloratam minute serrulatam transeunte. Sequitur alterum glumarum (squamellarum) sterilium par, quarum altera dorsalis alteram ventralem cum tota spicula (toto flore) amplectitur. Gluma tertia, quarta ceteraeque omnes angustiores, membranaceae, pellucidae, fertiles, florem masculinum monandrum (stamen singulum) obtegentes, forsan spiraliter dispositae. Antherae lineares, 11 mm longae, 0,5 mm latae. Flos femineus centralis solitarius nudus (ovarium). Ovarium valde juvenile oblongum ovulo uno in stylum longum crassum, fere 1 mm exsertum desinens. Stigmata bina crassa 2 mm longa, minute papillosa. Fructus ignotus.

San Cristobal Island. Hinuahaoro, forest floor, alt. 900 m. Leg. L. J. Brass n. 3045, 22 IX 1932. Type-specimen in the Gray Herbarium.

This new species is quite similar to *Capitularia involucrata* Valck. Sur. in stem, leaves and spikelets, but it is more robust in all its parts, the stem is provided with very long leaves at the base, the inflorescence consists of several spikes (spikelets) and the bracts (glumes) are much larger and awned. Though both species have essentially the same structure of the spikelets (flowers) as in *Chorisandra* R.Br., I do not agree with Mr. Ridley, who in his

report on the botany of the Wollaston expedition to Dutch New Guinea (Trans. Linn. Soc. 2nd Ser. Bot. IX, part 1, p. 244) united both genera. The fact that in *Capitularia* the four outer scales of the spikelet (flower) are empty and the inner ones fertile, while in *Chorisandra* the outer ones are usually fertile and the innermost empty is perhaps not so important from a taxonomical point of view. The style of the species of *Chorisandra* is deeply bifid with long stigmatic branches. In *Capitularia* the lobes are short. The genus *Chorisandra* comprises about 5 species, natives of Australia and New Caledonia, with solitary pseudolateral spikelets and a few terete leaves at the base or leafless and with usually transversally septate stems. In *Capitularia* the leaves or at least the involucral leaves are well developed and flat, the spikelets (solitary or clustered) are terminal and the stems are continuous and 5-angled (according to Ridley, l.c., p. 245: 4-angled), a very unusual thing in Cyperaceae. I do not hesitate to separate the two genera, even when the structure of the flowers should prove to be identical, merely on account of their facies. Otherwise *Dichromena* should be included in *Rhynchospora*, *Eleocharis* in *Scirpus*, etc. and it would be impossible to distinguish the genera of the *Mapanieae* without the aid of a microscope. I am convinced that the natural groups of this tribe may be distinguished as well by means of their external characters as facies, leaves and inflorescences as by the number and position of stamens, scales and style-branches. An attempt at a clavis to the 12 genera of the *Mapanieae*, based in the first place on the leaves and inflorescences, has been given by H. Pfeiffer in Fedde, Repert. XXI (1925), p. 238—240 and in Bot. Arch. XII (1925), p. 452.