# FLORAE MALESIANAE PRECURSORES XVII
# NOTES ON MALAYSIAN AND SOME S. E. ASIAN CYPERACEAE V [1])

by

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## I. MAPANIA HOLTTUMII

**Mapania holttumii** Kern, nom. nov. — *Mapania insignis* Holttum, Gard. Bull. Sing. 11, 1947, 293, non Sandwith, Kew Bull. 1933, 496.

When publishing the name *Mapania insignis* for a species occurring in the Malay Peninsula, Holttum overlooked the existence of the earlier homonym *Mapania insignis* Sandw. for a different species from British Guyana. I therefore propose to replace the illegitimate binomial by that of *Mapania holttumii.*

## II. SOME NOTES ON PARAMAPANIA

No doubt it is one of the great merits of Uittien to have recognized the close relationship existing among a number of species formerly referred to *Mapania, Thoracostachyum,* or *Hypolytrum.* He created for them a new genus, *Paramapania,* in Rec. Trav. Bot. Néerl. 32, 1935, 184—192, certainly a coherent group, though difficult to characterize in a satisfactory way. As I can not claim acquintance with the extra-Malaysian members of the tribe *Mapanieae,* I follow Uittien in crediting generic rank to *Paramapania* for the time being. A future monographer of the *Mapanieae* will first of all be confronted with the question as to which of the numerous genera created in the course of time can be maintained. Very likely a definite solution will be unattainable by herbarium study only.

The flowers of *Paramapania* are in structure very similar to those of *Thoracostachyum* and *Mapania,* but generally somewhat more reduced as the third (anticous) hypogynous scale is usually lacking and consequently there are only two stamens. When the third scale is present it is as a rule smaller than the upper ones and sterile. However, occasionally there may be a stamen in its axil, usually less developed than the other two. The relatively coarse brown spinules on the keel of the two outermost (lateral) scales are characteristic of *Paramapania,* the corresponding scales in *Mapania* and *Thoracostachyum* being softly ciliate on the back. From *Thoracostachyum* and *Mapania* sect. *Cephaloscirpus* the species of *Parama-*

[1]) Part I in Reinwardtia 2, 1952, 97—130; II in Reinwardtia 3, 1954, 27—66; III in Blumea 8, 1955, 110—169; IV in Reinwardtia 4, 1956, 89—97.

*pania* may readily be distinguished by the lateral leafless scapes. However, it is practically impossible to distinguish between *Paramapania* and the scapigerous species of *Hypolytrum* and *Mapania* by their habit alone. Especially some African *Hypolytra* (e. g. *H. nudicaule* Cherm. from Madagascar) are very similar in habit to *Paramapania parvibractea* (Clarke) Uitt., but the number of hypogynous scales is that of *Hypolytrum*, i. e. reduced to two. As a rule the spikelets and flowers in *Mapania* are much larger than in *Paramapania*, and the fruits more drupaceous by the fleshy or spongy thick exocarp. *Mapania monostachya* Uitt. is very similar to *Paramapania gracillima* (Kük. & Merr.) Uitt. by its very narrow leaves and spikelets only 6—10 mm long, but the flower-structure and the drupaceous fruit are distinctly those of *Mapania*.

**1.** *Paramapania attenuata* S. T. Blake, J. Arn. Arb. 28, 1947, 210, is said to be most nearly allied to *P. longirostris* (Kük.) Uitt., but to differ from it by the glumes twice as long, the flowers slightly smaller than the glumes, and the indistinctly 3-angled (not 6-angled) nut passing gradually (not abruptly) into the relatively shorter beak. However, "glumae ... 1.5 mm longae" in Uittien's description of *Paramapania rostrata* (Elm.) Uitt. [= *P. longirostris* (Kük.) Uitt.] in Rec. Trav. Bot. Néerl. 32, 1935, 189, is obviously a printer's error for 2.5 mm. In the specimens examined I found the glumes 2½—3 mm long, 1½—1¾ mm wide. To me the rather young nuts in the type of *Paramapania attenuata* (*Brass 12930*) do not differ from those of *P. longirostris*. I therefore refer *Paramapania attenuata* to the synonymy of *P. longirostris*.

**2.** *Paramapania lucbanensis* (Elm.) Uitt. was based on *Mapania lucbanensis* Elm., the type collection of which is Elmer 9116 from Lucban, prov. of Tayabas, Luzon. Uittien did not see this collection, to which his binomial nomenclaturally belongs. I saw a specimen of it in the Edinburgh Herbarium and have no doubt that it belongs to *Paramapania parvibractea* (Clarke) Uitt., as could already be presumed from Elmer's description (inflorescence 3 by 5 cm, lower peduncles divaricate, nut nearly 2 mm long, 1 mm thick). The name *Mapania lucbanensis* Elm. and the binomials based on it must therefore be referred to the synonymy of *Paramapania parvibractea*.

However, Uittien intended the name *Paramapania lucbanensis* for Ramos BS 23642, from Lake Polog, prov. of Sorsogon, Luzon, distributed by the Bureau of Science as *Thoracostachyum lucbanense* (Elm.) Kük., apparently a different plant. Uittien distinguished it from the other species of *Paramapania* by the nut 3 mm long and suddenly contracted into a stipe. I find the nuts only 2—2½ mm long (stipe and beak included), and the plants with their dense stellate inflorescences and long conical rostrum of the fruit hardly different from the Bornean collections of *Paramapania radians* (Clarke) Uitt. The nuts are slightly different in shape, but I doubt whether they are well developed. Besides, *P. parvibractea* and *P. radians* are very closely related and possibly only racially distinct. To me it seems undesirable to distinguish a third entity, for which moreover a new name would be required.

**3.** Some *Paramapania* collections from the Malay Peninsula (Johore) were described by Uittien as *P. johorensis*. This was done mainly on ac-

count of the 6 hypogynous scales and the simple inflorescence. Uittien distinguished them from *P. radians* by the peduncled spikelets, the shorter acumen of the leaves, and the subglobose fruit. In 1936 he referred also Teysmann 6280 from P. Lingga to *P. johorensis* with the remark that it differs from the Johore specimens in having only 5 hypogynous scales and a more compound inflorescence. Then he distinguished *P. johorensis* from *P. parvibractea* solely by the terete, globose, stipitate nut of the former. Recently some *Paramapania* specimens were collected in Central Sumatra, but I am unable at present to decide whether they belong to *P. johorensis* or not.

**4.** In Brass 27935 from Papua the flowers are about 3 mm long, distinctly longer than is usually the case in *Paramapania parvibractea*. There are 6 hypogynous scales, 3 stamens with anthers about 1 mm long, and in some flowers 4 stigmas. Also in Nielsen 221 from Fiji (the only extra-Malaysian *Paramapania* I have seen) the flowers are almost 3 mm long, but here I found only 5 scales and 2 stamens. It seems advisable to consider both collections forms of the widely distributed polymorphic *Paramapania parvibractea*.

The synonymy of *Paramapania radians* and *P. parvibractea* and a survey of the specimens examined are given below.

**5. Paramapania radians** (Clarke) Uitt., Rec. Trav. Bot. Néerl. 32, 1935, 188 & 200 — *Mapania radians* Clarke in Ridl., J. Str. Br. R. As. Soc. 46, 1906, 226; Kew Bull. add. ser. 8, 1908, 53; Merr., En. Born. 1921, 65 — *Hypolytrum radians* (Clarke) Ridl., Fl. Mal. Pen. 5, 1925, 170, excl. pl. malacc. — *Paramapania lucbanensis* Uitt., Rec. Trav. Bot. Néerl. 32, 1935, 190, quoad specim. cit., non *Mapania lucbanensis* Elm.

BORNEO. Br. N. Borneo, dist. Temburong, Sungei Belalong, ½ mile above Kuala Belalong, 200 ft: *Smythies, Wood & Ashton San 17066* (L). — Sarawak, Matang: *Ridley 12342* (K, *type*; BM, PNH, SING); Dulit, near Long Kapa, 500—600 m, on rock in primary forest on spur of mountain: *Richards 1475* (K, U); Puak: *Ridley 12329* (SING); Siul: *Ridley s.n.* (SING). — NE. Borneo, Nunukan, N of Tarakan, brookvalley near old forest-garden, primary Dipterocarpaceae forest: *W. Meijer 1886* (BO, L, PNH). — Br. N. Borneo, Sandakan, Bongaya R.: *Ridley s.n.* (SING); Sandakan and vicinity, in damp forest: *Ramos 1392* (K, US), *1497* (US).

PHILIPPINES. Luzon, Lake Polog, prov. of Sorsogon: *Ramos BS 23642* (BM, BO, BRI, GH, K, L, SING, US). — Mindanao, Zamboanga Dist., Mt Tubuan: *Ramos & Edaño BS 36625* (K).

**6. Paramapania parvibractea** (Clarke) Uitt., Rec. Trav. Bot. Néerl. 33, 1936, 143; S. T. Blake, J. Arn. Arb. 28, 1947, 209 — *Hypolytrum parvibractea* Clarke, Kew Bull. 1899, 114 — *Mapania montana* Laut. & K. Sch. in K. Sch. & Laut., Fl. Schutzgeb. 1900, 189 — *Hypolytrum parvibracteatum* Clarke, Kew Bull. add. ser. 8, 1908, 51; Valck. Sur., Nova Guinea 8, 1912, 709; Ridl., Trans. Linn. Soc. II, 9, 1916, 243 — *Mapania lucbanensis* Elm., Leafl. Philip. Bot. 2, 1909, 573 — *Hypolytrum parvibracteatum* var. *quadriglumatum* Valck. Sur., Nova Guinea 8, 1912, 709, t. 116 — *Hypolytrum quadriglumatum* Valck. Sur., l. c., nom. inval. — *Thoracostachyum montanum* (Laut. & K. Sch.) Valck. Sur., op. cit., 710; Kük., Bot. Jahrb., 59, 1924, 54; Ohwi, Bot. Mag. Tokyo 56, 1942, 209 — *Thoracostachyum lucbanense* (Elm.) Kük. ex Merr., Philip. J. Sc. 11, 1916, Bot. 258; En. Philip. 1, 1923, 132, p.p. — *Hypolytrum radians* Ridl., Fl.

Mal. Pen. 5, 1925, 170, quoad specim. malacc., non *Mapania radians* Clarke — *Paramapania johorensis* Uitt., Rec. Trav. Bot. Néerl. 32, 1935, 191; ibid. 33, 1936, 141 — *Paramapania lucbanensis* (Elm.) Uitt., Rec. Trav. Bot. Néerl. 32, 1935, 190, haud quoad specim. cit. — *Paramapania amboinensis* Uitt., op. cit., 191, f. 4 — *Paramapania montana* (Laut. & K. Sch.) Uitt., op. cit., 200, nom. inval. — *Thoracostachyum parvibractea* (Clarke) Kük., Bot. Jahrb. 69, 1938, 261, nom. vix valid.

SUMATRA. Central Sumatra, Air Putih, E of Pajokumbuh, on steep wet bank: *Alston 14383* (BM); Tandjong Pauh, along road to Pakan Baru, 400 m, forest on poor sandy soil: *W. Meijer 4611* (L). — P. Lingga, Sungei Tanda: *Teysmann 6280* (BO); 700 m, forest: *Bünnemeijer 6915* (BO).

MALAY PENINSULA. Kelantan, ridge above Sungai Tekal, near Gua Ninik, 1500 ft, in a pool: *Henderson SF 19431* (SING, US). — Johore, Gunong Belumut, S. slope, 2500 ft, in valley: *Holttum SF 10989* (K, *type* of *P. johorensis* Uitt.; SING); Gunong Panti, 2000 ft: *Ridley 4144* (BM, SING).

PHILIPPINES. Luzon, prov. of Tayabas, Infanta-Siniloan trail: *Ramos & Edaño BS 29177* (US); Mt Binuang: *Ramos & Edaño BS 28469* (US); Lucban: *Elmer 9116* (E, *type coll.* of *Mapania lucbanensis* Elm.); Laguna prov., Cagayalan: *Edaño PNH 6480* (PNH). — Samar, Bagacay, Concord: *Sulit PNH 6308* (L, PNH, SING). — Mindanao, Zamboanga dist., Malangas: *Ramos & Edaño BS 37414* (US).

MOLUCCAS. Talaud Islands, Pulu Karakelong, 170 m: *Lam 2757* (BO). — Morotai, G. Sangowo, 50 m: *Kostermans 7808* (BO, L). — Ceram, Central Ceram, northern plain, common: *Stresemann 218* (L); East Ceram, Kp. Kiandarat, G. Kilia, 60 m: *Buwalda 5630* (BO, K, L, PNH, SING); between Waru and Masiwang, 0—100 m, primary forest: *Kornassi 982* (BO). — Ambon: *Brooks 17748* (BO), *Forsten s.n.* (L), *Robinson 1889* (K, L, US); Latua: *Boerlage 464* (BO, L); Way Jua, 200—300 m: *Kornassi (exp. Rutten) 1164* (BO, L); G. Saluhutu, 400 m, forest: *van der Pijl 703* (BO); *Rant 650* (BO); Hutumuri: *Teysmann* s.n. (L 909. 18—241).

NEW GUINEA. Western New Guinea, Sorong, Kp. Baru, scattered in forest: *Djamhari 353* (BO, K, L); 20 m: *Main 377* (BO); Ramoi, *Beccari PP 346* (FI); Patema, Nabire, 300 m, in rain-forests fringing Bumi R.: *Kanehira & Hatusima 12363* (BO); Mamberamo R., Albatros bivouac, 75 m: *Docters van Leeuwen 9652* (BO, K, L, SING); Rouffaer R., 250 m, on steep slopes in the forest: *Docters van Leeuwen 10452* (BO, GH, K, L, U); Idenburg R., Bernhard Camp, 150 m, frequent in rain-forests of lower mountain slopes: *Brass 13842* (BO, BRI, L); near Prauwen-bivouac: *Lam 792 & 802* (BO); 120 m, very common in the forest on the hills: *Lam 830* (BO, K, L); 200 m: *Lam 959* (BO, K, L); N of Depapre, 100 m: *Lam 7818* (L); east slopes of Cycloop Mts, 575 m, occasional floor plant in tall forest: *Brass 8944* (BRI); Cycloop Mts, pass to Netar, 400—600 m, roadside: *Meijer Drees 45* (BO); Mt Carstensz: *Kloss s.n.* (BM, K). — Northeastern New Guinea, Sepik, Yellow R.: *Womersley 3938* (BO); Morobe Dist., Sattelberg to Quembung mission, 3200 ft, forest trail: *Clemens 984* (L); Quembung mission, 2500 ft, forested hills: *Clemens 1210* (L); Wareo, 2000 ft, forest trail: *Clemens 1367* (G, L). — Southeastern New Guinea, Fly R., 528 mile Camp, 80 m, common forest floor plant, sporadic on ridges: *Brass 6706* (U); Fly R.: *d'Albertis in 1877* (FI); Mt Scratchley: *Giulianetti s.n.* (K, *type*; see Fl. Mal. I, 1, 1950, XXI); Kokoda, forest: *Cheesman 103* (K); Kubuna, Centr. Division, 100 m, uncommon forest floor plant: *Brass 5669* (L); Dieni, Ononge Road, Centr. Division, 500 m, sporadic on rain-forest floor: *Brass 3931* (BRI); Koitaki, 1500 ft, forest: *Carr 12553* (L). — P. Gebeh: *Teysmann s.n.* (BO). — Japen-Biak, Sarurai near Serui: *Aet & Idjan 18* (BO, K, L). — Islands near the S. E. coast: *Armit in 1884* (MEL); Normanby Island, Waikaiuna, 30 m, in a ravine in rain-forest: *Brass 25623* (L); Sudest Island, Mt Riu, W. slopes, 300 m, locally common in rain-forest undergrowth: *Brass 27935* (L).

FIJI. Viti Levu: Waidoi: *Nielsen 221* (C).

## III. HYPOLYTRUM NEMORUM

**Hypolytrum nemorum** (Vahl) Spreng., Syst. 1, 1825, 233 — *Scirpus anomalus* Retz., Obs. 5, 1789, 15, non *Hypolytrum? anomalum* Steud., 1855

— *Schoenus nemorum* Vahl, Symb. Bot. 3, 1794, 8; En. 2, 1806, 227 — *Hypolytrum latifolium* L. C. Rich. in Pers., Syn. 1, 1805, 70 — *Hypaelyptum nemorum* (Vahl) Beauv., Fl. Owar. 2, 1810, 13.

The synonymy of this species up to 1825 is given above.

In the Copenhagen Herbarium there are two sheets marked by Vahl respectively "*Schoenus nemorum*-Beera Kaida Rheed. 12 f. 58" and "*Schoenus nemorum*-Beera Kaida Hort. Mal. p. 12, pag. 109 Tab. 58". Vahl's descriptions of *Schoenus nemorum* in Symbolae Botanicae and Enumeratio Plantarum were certainly based on these specimens, which originate from India and belong to what is generally known as *Hypolytrum latifolium* L. C. Rich. Sprengel transferred Vahl's name to *Hypolytrum*. The correct name of the species in *Hypolytrum* therefore is *H. nemorum* (Vahl) Spreng. Clarke and others referred this binomial — wrongly with the authority "(Vahl) Beauv." — to an African *Hypolytrum*, the correct name of which is *H. purpurascens* Cherm. (see Nelmes, Kew Bull., 1955, 69—71). Probably because Clarke in the Flora of British India 6, 1894, 678 cites "Rheede Hort. Malab. xii. t. 58" in the synonymy of *H. wightianum* Boeck., Nelmes l. c. supposed *Schoenus nemorum* Vahl might be the earliest binomial for *Hypolytrum wightianum* Boeck. This is certainly not the case, as the specimens in Vahl's herbarium do not belong to *H. wightianum*.

## IV. SCIRPUS SIAMENSIS

**Scirpus siamensis** (Clarke) Kern, stat. nov. — *Scirpus squarrosus* L. *var. siamensis* Clarke in Hosseus, Beitr. Fl. Siams, Beih. Bot. Centralbl. 27, 1910, 460; Camus in Lecomte, Fl. Gén. I.-C. 7, 1912, 134 — *Lipocarpha tenera* (non Boeck.) Camus, op. cit., 143, quoad specim. cit. — *Scirpus chinensis* Osb. *var. siamensis* (Clarke) Raymond, Nat. Canad. 84, 1957, 124.

I have no hesitation in crediting specific rank to this taxon. The plant is stouter than *Scirpus squarrosus* L. and differs moreover by the following characters: involucral bracts usually 3, patent to reflexed, the longest one up to 15 cm; spikelets larger, 4—5 mm wide, stramineous; glumes oblong, the body slightly longer than 1 mm, conduplicate, keeled, with a hyaline auricle on both sides at the top, and 2—3 fine nerves on both sides of the midrib, the awn $1^1/_3$—$1^1/_2$ mm long, slightly longer than the body; style longer, about $^2/_3$ mm (stigmas included); nut somewhat larger, about $^2/_3 \times ^2/_5$ mm; leaves $1^1/_3$—$1^1/_2$ mm wide, the upper side with a conspicuous spongy tissue.

*Scirpus squarrosus* L. is characterized by: involucral bracts usually 2, the lower one erect as though continuing the stem; spikelets very small, 2—3 mm wide; glumes obovate-cuneate, the body slightly shorter than 1 mm, somewhat concave, almost flat, not keeled, not auricled, with almost nerveless sides, the awn about $^1/_2$ mm long, shorter than the body; style very short, about $^1/_6$ mm long (stigmas included); nut about $^1/_2 \times ^1/_3$ mm; leaves up to 1 mm wide, not spongy.

SIAM. Wang Djao, 100 m, savannah forest, frequent but not dominant: *Hosseus 101* (P, *type coll.*).

LAOS. Près de Sala de la Sè-Bang-Fai, prov. de Savannakhet: *Poilane 28198* (sec. Raymond, l. c., non vidi).

TONKIN. Environs de Hanoï, près le grand lac: *d'Alleizette in 1908* (L).

COCHIN CHINA. Gnia tom: *Thorel s.n.* (P).

## V. ELEOCHARIS SUNDAICA

**Eleocharis sundaica** Kern, spec. nov. — *Fig. 1.*

Herba perennis, rhizomate brevi longe stolonifero, stolonibus ad 4 mm diametro, (haud semper?) apice tuberiferis. *Culmi* validi, dense fasciculati, erecti, teretes, laeves, septis propriis magnis nullis, sed cellulis tenuissimis numerosissimis modo medullae completi, in sicco rugulosi, obsolete striati, 65—85 cm alti, 3—6 mm crassi. *Vaginae* 2, laxiusculae, membranaceae, pallide virides vel stramineae, basi saepe fuscescentes, ore oblique sectae obtusae muticae, vagina summa 10—15 cm longa. *Spicula* cylindrica, apice subacuta, densiflora, 1—$2^1/_2$ cm longa, 4—6 mm crassa. *Glumae* late ovatae vel suborbiculares, apice late attenuatae vel rotundatae, concavae, ecarinatae, tenuiter pluristriatae, stramineae, marginibus latis hyalinis brunneo-punctatis, intus marginibus brunneo-zonatae, c. 4 mm longae, (3—)4 mm latae; gluma infima caulem amplectens, sterilis, glumae reliquae fertiles. *Setae hypogynae* 5—6, firmae, retrorse scabrae, 2(—3) nuce distincte longiores stylopodium aequantes, ceterae nuce paullo breviores vel paullo longiores. Stamina 3; antherae non visae. Stigmata 2; *stylopodium* persistens triangulare, complanatum, cellulosum, c. $^3/_4$ long. nucis aequans, basi annulo subtoroso nuce subaequilato instructum, $1^1/_3$—$1^3/_4$ mm longum, basi $1^1/_2$ mm latum. *Nux* late elliptica vel late obovata, apice subtruncata, biconvexa, marginibus leviter costata, nitida, maturitate castanea, c. 2 mm longa, $1^2/_3$—$1^3/_4$ mm lata, utroque latere cellulis extimis transverse oblongis c. 30-seriatis leviter reticulata.

LESSER SUNDA ISLANDS. Alor, "Merjak", S of Naumang, 450 m, lining the lake, abundant, May 16, 1938: *Jaag 1190* (L, *type*; ZT); vern. name: mólüta.

This new species belongs to ser. *Mutatae* Svens., which comprises about twenty very closely related taxa usually treated on specific level. Up to the present the following *Mutatae* have been recorded for the Malaysian area: *Eleocharis dulcis* (Burm. f.) Henschel, s. l., *E. acutangula* (Roxb.) Schult., *E. spiralis* (Rottb.) R. & S., *E. philippinensis* Svens., and *E. ochrostachys* Steud. Of these the species described above is most nearly related to *E. spiralis*, differing in the terete (not triquetrous) stems, the larger, not almost truncate glumes, the larger nuts crowned by a much stouter style-base and with the external cells transversely oblong (not linear), and the longer and firmer hypogynous bristles. The simplest differentiating character is offered by the shape of the stems, but as in *Scirpus*, the taxonomic value of this shape (terete or triquetrous), is sometimes illusory. Of greater value is the type of cellular reticulation of the nut, generally considered most important for specific delimitation in *Eleocharis*.

Apparently still closer is the affinity to two extra-Malaysian species, both with terete stems and the same type of nut and style-base, but with the epidermal cells of the nut isodiametric and in about 20 rows on each face. *Eleocharis cellulosa* Torr. from the West Indies, Central America, and the Southern United States is much more slender and has smooth bristles about reaching the top of the style-base. *Eleocharis brassii* S. T. Blake from Queensland has longer spikelets, ovate glumes about 5 by $2^1/_2$ mm, and the longest bristles about as long as the nut proper.

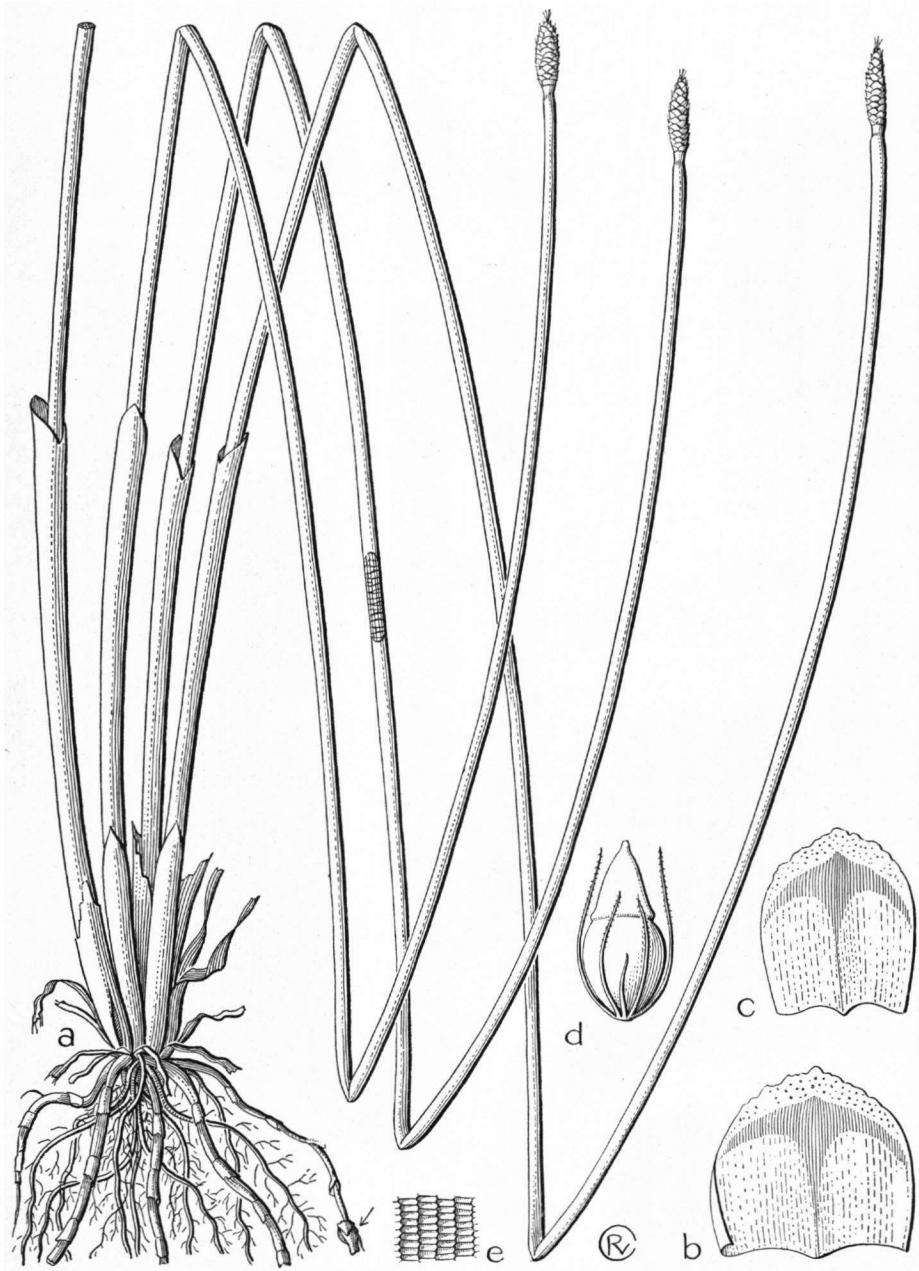


Fig. 1. *Eleocharis sundaica* Kern — a. Habit, × 5/8; b—c. glumes, × 6; d. nut, × 6; e. surface of nut, strongly enlarged. — From *Jaag 1190*.

For the related species no tubers have been recorded, except for *E. dulcis*, which produces conspicuous edible tubers.

Throughout *Eleocharis* specific delimitation presents great difficulties. The question whether the taxa discussed above all represent linneons must be left open here.

## VI. THE IDENTITY OF FICINIA FOLIACEO-BRACTEATA PFEIFF.

The name *Ficinia foliaceo-bracteata* was published in "Revision der Gattung Ficinia Schrad." by H. Pfeiffer, 1921, 35. *Ficinia* is an African genus, hence Pfeiffer's remarks "Habitat. incognit., ? Java (herb. Lugd. Bat.)" and (p. 10) "Das Indigenat von *F. foliaceo-bracteata* Pfeiff. in Java ist .... sehr verdächtig. Ob dies isolierte Vorkommen auf Einschleppung aus Südafrika beruht oder, was mir die grössere Wahrscheinlichkeit zu haben scheint, nicht eher auf einem Irrtum bei der Zusammenstellung des herb. Lugd. Bat., ist nicht zu sagen."

The type in the Rijksherbarium (labelled "*Ficinia longebracteata* spec. nov." by Pfeiffer) is certainly from Java. It was collected in the lake near Tjilankahan (Banten) by Kuhl & van Hasselt, and undoubtedly belongs to *Cyperus cephalotes* Vahl, a species not uncommon in Western Java. Obviously Pfeiffer mistook the corky tissue at the base of the nut for the gynophore occurring in *Ficinia*, with which it has nothing to do. Already Bentham, J. Linn. Soc., Bot. 15, 1877, 509, stated that this tissue is "nothing more than a cellular and rather hard thickening of the pericarp, below and more or less round the seed-bearing cavity." A very accurate description of it was given by Clarke, in J. Linn. Soc., Bot. 21, 1884, 25—28.

## VII. TETRARIA IN MALAYSIA

**Tetraria borneensis** Kern, sp. nov. — *Fig. 2.*

Herba perennis, valida, glabra, $1^1/_2$—2 m alta. *Rhizoma* lignosum, breve, crassum. *Culmi* erecti, rigidi, obtuse trigoni, striati, laeves, per totam longitudinem distanter foliigeri, basi 5—6, medio 2—4 mm crassi, basi incrassata vaginis castaneis plus minusve nitentibus demum in fibras dissolutis obtecti. *Folia* basalia numerosa, coriacea, culmo multo breviora, basi conduplicata, ceterum canaliculata vel plana, 4—10 mm lata, apicem versus longe gradatimque in acumen triquetrum angustata, marginibus saepiusque et in costa antrorse sabra; folia caulina 3—5, laminis brevioribus, vaginis tubulosis castaneis vel atrobrunneis, ore oblique sectis, 4—8 cm longis, apice liberis, partibusque liberis inferne paullo imbricatis. *Inflorescentia* paniculata, angusta, laxa, 40—90 cm longa, e ramorum fasciculis 4—8 distantibus constructa. Bracteae inferiores foliis caulinis similes sed breviores, 5—10 cm longae, longe vaginantes, superiores gradatim breviores. Rami inflorescentiae 2—4-ni, erecti, inaequales, ancipites, scaberuli. *Spiculae* numerosae, solitariae, breviter pedunculatae, anguste lanceolatae, acutae, biflorae, 7—8 mm longae, 1—$1^1/_2$ mm latae. *Rhachilla* recta, brevissima, haud super florem terminalem producta. *Glumae* 7, obsolete distichae, castaneae, inferiores 4 vacuae, ovatae, e carina breviter (1—2 mm) aristatae, superiores 2 floriferae, oblongae, c. 6 mm longae, apicem versus


Fig. 2. *Tetraria borneensis* Kern — a. Habit, × $^2/_3$; b. spikelet, × 8; c. glume, × 4; d. upper flower, × 8; e. lower flower, × 8; f. nut (stigmas not yet fallen off), × 8; g. anther, × 16. a. from *Purseglove P 5072*; f. from *Purseglove P 5559*; b, c, d, e, g. from *Kostermans 10737*.

asperae; gluma terminalis tenuiter membranacea, sterilis. *Flos* inferior masculinus, antheris ovarioque rudimentario, vel antheris tantum instructus; setae perigonii 2—3(—5), capillares, albidae, apicem versus minute antrorse scaberulae, c. 3 mm longae; stamina 6, filamentis ligulatis post anthesin 5—6 mm longis, antheris linearibus rufescentibus basi inconspicue auriculatis, connectivo in appendicem conico-subulatam sparse antrorse scabram c. $1^1/_2$ mm longam producto. Flos superior flori inferiori similis, sed hermaphroditus, ovario fertili instructus; stigmata 3; styli basis persistens, elongato-pyramidalis, triquetra, antrorse scabra, straminea, c. 2 mm longa. *Nux* trigona, obovata, basi attenuata, laevis, castanea, $2^1/_2$—3 mm longa, 1—$1^1/_2$ mm lata.

BORNEO. E. Borneo, Kelindjau River region, 100 m, "padang" on sandy soil, marshy, very common, a dominant in this type of vegetation, June 15, 1954: *Kostermans 10737* (L, *type*). — W. Borneo, bank of Sendabai Lakes near Tajan, Sept. 24, 1949: *Main (exp. Polak) 1716* (L). — Sarawak, Telok Assam, Bako National Park, 350 ft, heath woodland, damp hollows, May 21, 1956: *Purseglove P 5072* (L, SING), large tufted sedge to 6 ft, spikelets [very young!] golden brown; same locality, Feb. 6, 1957: *Purseglove P 5559* (L), abundant sedge to 6 ft, on padang, inflorescence brown.

The occurrence of a *Tetraria* species in the equatorial lowland of Borneo is very surprising as the genus is almost exclusively African, with its greatest development in extra-tropical South Africa. A few species occur in Australia, but up to the present none was known from Malaysia.

Unfortunately *Tetraria* belongs to an exceedingly difficult group of genera, our present knowledge of which is very imperfect. The assignment of the Bornean specimens to one of the ill-circumscribed genera has given me much trouble. There are important differences in the circumscription of *Tetraria* as given by J. M. Black (Trans. & Proc. R. Soc. S. Austr. 58, 1934, 168—169), Kükenthal (in Fedde, Rep. 48, 1940, 195—246), and Mrs Levyns (J. S. Afr. Bot. 13, 1947, 73—93). Especially the delimitation against *Costularia* Clarke is far from being well established. *Costularia* was originally based on some African species differing from *Tetraria* by the lower flower being strictly male (i. e. without a reduced pistil). Later on it was variously extended or reduced. Kükenthal, op. cit., 199, although admitting that *Costularia* and *Tetraria* are difficult to separate from each other, thinks *Costularia* can be distinguished by the longer and firmer bristles, the anthers not auricled at the base, the style-base separated from the nut by a constriction, the nut softer in texture, and the glumes exactly distichously arranged. As to the species described above, the subdistichous glumes, the short straight rhachilla, the hexandrous flowers of which the lower one is male or functionally male, the persistent conical style-base, and moreover the very delicate hypogynous bristles and the somewhat auricled base of the anthers point to a close relationship with the already known species of *Tetraria*. There are, however, strong affinities with *Costularia pilisepala* (Steud.) Kern from Borneo and New Guinea (see § XVI).

Kükenthal l. c. gives a subdivision of the genus *Tetraria* into subgenera and sections, the nomenclature of which must be corrected, as no account has been taken of Clarke's earlier subdivision in Thiselton-Dyer, Flora Capensis, 1898. Of Kükenthal's subgeneric names (Subgen. *Epi-*

*schoenus*, Subgen. *Elynanthus*, and Subgen. *Eu-Tetraria*), the second can not be maintained as it is based on *Elynanthus* Nees in Linnaea 7, 1832, 520. By monotypy the type species of *Elynanthus* is *E. compar* (L.) Nees (= *Schoenus compar* L.), a species belonging to Kükenthal's subgenus *Eu-Tetraria*. A new name will be required. Subgenus *Tetraria* (= *Eu-Tetraria* Kük.) is subdivided by Kükenthal into three sections. Sect. *Capillaceae* Kük. [op. cit. 215, type: *T. capillacea* (Thunb.) Clarke] comprises *T. crinifolia* (Nees) Clarke, the type of sect. *Aulacorhynchus* (Nees) Clarke. Likewise sect. *Aristosquamosae* Kük., op. cit. 227 (no type indicated) comprises *T. ustulata* (L.) Clarke, the type of sect. *Lepisia* (Presl) Clarke. Consequently the correct names of Kükenthal's sections are: sect. *Aulacorhynchus* (Nees) Clarke, sect. *Lepisia* (Presl) Clarke, and sect. *Tetraria*, the last one comprising *T. thuarii* Beauv., the type species of the genus (for the identity of this species see Levyns, op. cit.).

## VIII. THE IDENTITY OF CLADIUM ARFAKENSE RENDLE

*Cladium arfakense* Rendle in Gibbs, Dutch NW. New Guinea, 1917, 90, was based on two collections from NW. New Guinea, Arfak Mts, Angi Lakes, viz. Gibbs 5901 and Gibbs 5561. Both collections are preserved in the Herbarium of the British Museum, a duplicate of the latter one in the Kew Herbarium. Unfortunately the description turns out to be very inaccurate: stem with panicle 5.5 cm, spikelet 5 cm, upper 5 glumes each subtending a hermaphrodite flower, etc. Rendle did not describe the nuts, although there are many ripe ones in Gibbs 5901. These nuts show the much raised irregular ridges and the smooth basal part characteristic of *Cladium teretifolium* R. Br., to which species in my opinion Gibbs 5901 (and a part of Gibbs 5561 in BM) must be referred. Although the original description does not match any of the specimens on which it was based, it seems best to select Gibbs 5901 (BM) as the lectotype of *Cladium arfakense* Rendle, for Gibbs 5561 in the Kew Herbarium and a part of this collection in the British Museum do not at all belong to *Cladium*, but to *Lepidosperma*. Most probably they represent *Lepidosperma striatum* R. Br., which species is recorded for the same locality by Ohwi, Bot. Mag. Tokyo, 56, 1942, 207. The Gibbs specimens are very young and in this state the Australian *Lepidosperma striatum* is hardly distinguishable from the closely related *L. chinense* Nees. The latter species is only known from the coastal regions of S. China and the western parts of Malaysia [1]).

Hitherto *Cladium teretifolium* was unknown from Malaysia.

## IX. CLADIUM DISTICHUM CLARKE, C. MICRANTHES CLARKE, AND C. PHILIPPINENSE MERR.

In "Vorarbeiten zu einer Monographie der Rhynchosporoideae XIII" in Fedde, Rep. 51, 1942, Kükenthal describes three Malaysian *Cladia*, which undoubtedly all represent the same species. They are: *Cladium micranthes* Clarke (p. 153), *C. philippinense* Merr. (p. 163), and *C. disti-*

[1]) Brass 4644 from New Guinea, cited in Bull. Jard. Bot. Btzg III, 16, 1940, 306 and in Fedde, Rep. 50, 1941, 123 under *Lepidosperma chinense*, belongs to *Cladium brevipaniculatum* (Kük.) Kük.

*chum* Clarke (p. 164). Of *C. micranthes* and *C. distichum* only two collections each are cited, none of them seen by Kükenthal. Already from the descriptions the conspecific status of the three taxa could be presumed, which presumption was confirmed by the examination of the specimens in the Kew Herbarium.

There is some difficulty as to the correct name resulting from the union of the three taxa. The earliest specific epithet is *distichum*. Unfortunately the type of *Cladium distichum* is a specimen with badly deformed spikelets: besides the normal lower glumes each spikelet bears a great number of exactly distichous empty upper glumes. The same abnormality can sometimes be observed in *Rhynchospora rubra* (Lour.) Makino. Such deformed specimens of this species are sometimes mistaken for a *Cyperus* species. Although in the Code no definition of a monstrosity is given, it seems advisable to reject the name *Cladium distichum*, as "it is based on a monstrosity" (art. 67), and to accept *C. micranthes* as the correct name of the species.

As far as is known *Cladium micranthes* is restricted to Malaysia. The specimen from New Zealand cited by Kükenthal (Kirk 834) is very incomplete. It was tentatively referred to *C. micranthes* by Clarke, but in my opinion certainly does not belong there.

The synonymy and a list of the specimens examined are given below.

**Cladium micranthes** Clarke, Kew Bull. add. ser. 8, 1908, 46; Merr., En. Born. 1921, 62; Kük. in Fedde, Rep. 51, 1942, 153 — *Cladium distichum* Clarke, Philip. J. Sc. 2, 1907, Bot. 102 (specim. monstr.); Merr., En. Philip. 1, 1923, 129; Kük. in Fedde, Rep. 51, 1942, 164 — *Cladium philippinense* Merr., Philip. J. Sc. 5, 1910, Bot. 171; En. Philip. 1, 1923, 129; Kük., Bull. Jard. Bot. Btzg III, 16, 1940, 311; in Fedde, Rep. 51, 1942, 163 — *Mariscus distichus* (Clarke) Fern., Rhodora 25, 1923, 53 — *Mariscus geniculatus* Fern., l. c. — *Mariscus micranthes* (Clarke) Fern., op. cit., 54 — *Machaerina disticha* (Clarke) Koyama, Bot. Mag. Tokyo 69, 1956, 63 — *Machaerina micranthes* (Clarke) Koyama, op. cit., 64 — *Machaerina philippinensis* (Merr.) Koyama, op. cit., 65.

ARCH. IND. Without precise locality: *Waitz s.n.* (L).

BORNEO. Banjermasin: *Motley 574* (K, *type* of *C. micranthes* Clarke); Mt Kinabalu, Penataran R., 3000 ft, open scrub: *Clemens 34122* (BM); id., Penibukan, 4000—5000 ft, at edge of steep landslide, seeping ground: *Clemens 30752* (K, L, SING).

PHILIPPINES. Palawan, prov. of Palawan, Puerta Princesa (Mt Pulgar): *Elmer 12832* (BM, K, L, P); Malasgao R., Aborlan, 100 m, along stream in forest: *Edaño PNH 14094* (L); Victoria Peak, 600 m, rocks at base of waterfall: *Foxworthy BS 718* (K); Mt Gantung: *Edaño BS 77609* (SING). — Island of Paragua, E-wi-ig R., in river bed: *Merrill 758* (K, SING). — Mindoro: *Merritt FB 6724* (K, *type coll.* of *C. philippinense* Merr.). — Luzon, prov. of Tayabas, Quinatacutan: *Foxworthy & Ramos BS 13161* (K); Guinayangan: *Escritor BS 20678* (BM, K, L, P); Camarines prov., Paracale: *Ramos & Edaño BS 33476* (BM, L, SING); prov. Principe, Baler: *Merrill 1124* (K, *type* of *C. distichum* Clarke). — Sibuyan, prov. of Capiz, Magellanes (Mt Giting-Giting): *Elmer 12401* (BM, K, L). — Panay, Capiz prov., Libacao: *Martelino & Edaño BS 35429* (K). — Mindanao, Surigao prov.: *Ramos & Pascasio BS 34619* (BM, K, L, P); Davao prov., Mt. Galintan: *Ramos & Edaño BS 48867* (P).

CELEBES. Talaud Islands, P. Karakelang, 400 m: *Lam 3248* (L).

NEW GUINEA. P. Waigeo, Kambele hills ESE of Kabaré, 100 m, on border of periodically flooded riverine forest with xerophytic vegetation on leached lateritic hills: *van Royen 5421* (L).

## X. IS GAHNIA CASTANEA RIDL. DISTINCT FROM G. JAVANICA MOR.?

Originally Ridley distinguished clearly between two often confused species of *Gahnia* occurring in the Malay Peninsula. In his "Grasses and Sedges of the Malay Peninsula" (J. Str. Br. R. As. Soc. No 23, 1891, 17) he recorded *G. javanica* from Perak, Gunong Batu Puteh, Wray [887], besides an unidentified species from Perak, Maxwell's Hill, Curtis. The former actually belongs to *G. javanica*, the latter to *G. baniensis* Benl (= *G. javanica* var. *penangensis* Clarke). In his "Materials for a Flora of the Malayan Peninsula III", 1907, however, we find all collections of both species represented in the Singapore Herbarium referred to *G. javanica* var. *penangensis*. This is probably due to an error of Clarke's, who wrongly determined the Wray specimen as var. *penangensis* (see the duplicate in the Kew Herbarium). Later on Ridley realized again that conspicuous differences existed, for in 1915 he published a new species, *G. castanea* Ridl. in J. Fed. Mal. St. Mus. 6, 1915, 60, and his remark in "The dispersal of plants throughout the world" (1930, 117): "In ... *Gahnia javanica* ... the stamens apparently increase in length in some plants, but not in others" obviously refers to one of the differences between *G. javanica* and *G. baniensis*. As to *G. castanea*, based on a collection from Perak, Gunong Kerbau, Robinson, Ridley mainly stressed the chestnut-red colour of the spikelet, the accrescence of the filaments after anthesis, and the few glumes.

It is on this *Gahnia castanea* that the opinions of cyperologists are still divided. Kükenthal treats it as a variety of *G. javanica*, whereas Benl thinks it is a good species. Benl's reasons for specific separation seem very sound, as he ascribes to *G. castanea* filaments interwoven after anthesis ("Flecht-Mechanismus", braiding mechanism). *Gahnia javanica* belongs to a quite different group characterized by the infixation of the filaments into one or more of the sterile glumes (Klemm-Mechanismus, fixing mechanism). According to Benl *G. castanea* occurs in S. China (Yunnan), the Malay Peninsula, and Sumatra (Atjeh).

It is generally accepted that Benl's various mechanisms for fruit dispersal in *Gahnia* furnish also first-class taxonomic characters. Kükenthal (in Fedde Rep. 52, 1943, 91) objects, that in the type collection of *G. castanea* the filaments are really included by the inrolled apex of a sterile glume, in other words that it can not belong to the group with braiding mechanism. In Bot. Jahrb. 75, 1950, 88, Benl returns to the question. Although admitting that occasionally one of the anthers is included by the outer sterile glume, he sticks to his opinion that *G. castanea* is distinct from *G. javanica*, as the anther can easily be detached from the enveloping glume.

After having examined numerous spikelets of the type collection of *G. castanea* and of the other collections cited by Benl, I am convinced that Kükenthal is right. In several spikelets I frequently found 1, 2 or 3 filaments included by one of the sterile glumes. The process of infixation after anthesis by hardening and inrolling of the glumes takes some time. As long as this process goes on, the filaments can easily be detached and

will detach themselves in dried specimens. This can be observed in every young specimen of *G. javanica*. Only in quite mature specimens is it almost impossible to free the filaments from the enveloping glume.

In the mature specimen of Henry 9168 from Yunnan I also find a fixing mechanism. It certainly belongs to *G. javanica*, under which species it is cited by Benl (p. 173). The same collection is cited under *G. castanea* (p. 185). The latter citation apparently refers to a young specimen in the Kew Herbarium, which in my opinion also belongs to *G. javanica*.

The widely distributed *Gahnia javanica*, growing under various ecological circumstances, is highly polymorphic. To me the numerous varieties and forms distinguished by Benl and Kükenthal are of little or no systematic value, as I am unable to find any reliable characters by which their separate treatment would be justified. As to *G. castanea* (= *G. javanica* var. *castanea* Kük.), I think it merely represents a young state of *G. javanica* not deserving nomenclatural recognition at all. The brownish colour of the inflorescence I have observed in several young specimens collected in Java, Borneo, etc.

## XI. FURTHER NOTES ON MALAYSIAN GAHNIAE

*Gahnia psittacorum* (non Labill.) Rendle in Gibbs, Dutch NW. New Guinea, 1917, 91, cited by Kükenthal in the synonymy of *G. clarkei* Benl, comprises several collections partly belonging to *G. javanica*. Gibbs 5585

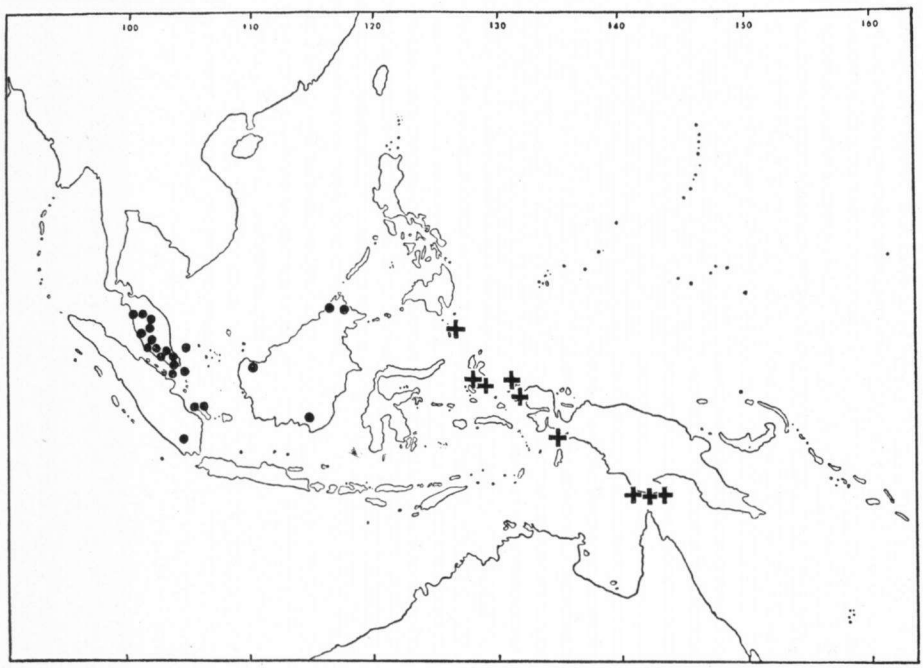


Fig. 3. Distribution of *Gahnia aspera* (R. Br.) Spreng. (+) and *G. tristis* Nees (●) in Malaysia.

in the Kew Herbarium is cited by Benl (Bot. Arch. 40, 1940, 221) under *G. clarkei*, the same number in the Leiden Herbarium under *G. tetragonocarpa* Boeck. (p. 222). The two specimens are not separable, and both belong to *G. sieberiana* Kunth (= *G. tetragonocarpa* Boeck.). Up to now I have not seen *G. clarkei* from Malaysia.

*G. trifida* Labill., "Malayischer Archipel (fide J. D. Hooker)", cited by Benl op. cit., p. 231, apparently does not occur in Malaysia. The statement was based on Hooker's Flora Tasmaniae, 1859, lxxxii, sub no 228. The occurrence in Malaysia is very unlikely, and as far as I know no material is extant.

The closely related *G. aspera* (R. Br.) Spreng. and *G. tristis* Nees are often confused in herbaria. In the former the nut is globose to ovoid, not or hardly angular, distinctly mucronate, and 3—4 mm wide, the filaments ciliate on the margins, the anthers only $1^1/_2$—2 mm long with a very short appendage of the connective ($^1/_4$ mm); in the latter the nut is elliptic, distinctly trigonous, not or hardly mucronate, $1^3/_4$—$2(-2^1/_2)$ mm wide, the filaments glabrous, the anthers 3—4 mm long with a subulate $^1/_2$—$^3/_4$ mm long appendage of the connective. In Malaysia *G. aspera* is apparently restricted to the Eastern part (New Guinea, Moluccas), *G. tristis* to the Western part (Malay Peninsula and adjacent islands, S. Sumatra, Banka, Borneo). See map. The record "*G. tristis*, Moluccas: *Gaudichaud* (P)", Benl, Bot. Arch. 40, 1940, 183, refers to a specimen of *G. aspera* in which all flowers are deformed by attack of a fungus.

## XII. THE SUBGENERIC AND SECTIONAL NAMES FOR THE MALAYSIAN RHYNCHOSPORAE

As far as we know the genus *Rhynchospora* is represented in Malaysia by 12 species, viz 1. *R. corymbosa* (L.) Britt.; 2. *R. triflora* Vahl; 3. *R. hookeri* Boeck.; 4. *R. malasica* Clarke; 5. *R. rubra* (Lour.) Makino; 6. *R. longisetis* R. Br.; 7. *R. heterochaeta* S. T. Blake; 8. *R. wightiana* (Nees) Steud.; 9. *R. submarginata* Kük.; 10. *R. subtenuifolia* Kük.; 11. *R. rugosa* (Vahl) Gale; 12. *R. gracillima* Thwaites.

In Kükenthal's system as adopted in his "Vorarbeiten zu einer Monographie der Rhynchosporoideae" they belong to two subgenera and five sections:

I. Subgen. *Haplostyleae* (Nees) Benth. & Hook
   1. Sect. *Longirostres* (Kunth (sp. 1—3)
   2. Sect. *Polycephalae* Kük. (sp. 4)
   3. Sect. *Pauciflorae* Kük. (sp. 5—10)

II. Subgen. *Diplostyleae* Benth. & Hook.
   4. Sect. *Stenophyllae* Kük. (sp. 11)
   5. Sect. *Tenues* Kük. (sp. 12)

Unfortunately only one of these names is in accordance with the rules of botanical nomenclature, as may appear from the following synonymy:

I. Subgen. *Haplostylis* (Nees) Pax in E. & P., Pfl. Fam. II, 2, 1887, 116; Kük., Bot. Jahrb. 74, 1949, 387 ("*Haplostyleae*"). — *Haplostylis* Nees, Edinb. New Phil. J. 34, 1834, 265; in Wight, Contr. Bot. Ind., 1834, 115; Linnaea 9, 1835, 295. — Ser. *Haplostyleae* Benth. in B. &

H., Gen. Pl. 3, 1883, 1059; Clarke, Fl. Br. Ind. 6, 1893, 668; Kew Bull. add. ser. 8, 1908, 117. — T.: *Haplostylis meyenii* Nees.

1. Sect. *Longirostres* Kunth, En. 2, 1837, 292 [1]); Kük., Bot. Jahrb. 74, 1949, 408. — *Calyptrostylis* Nees & Mey. ex Nees, Linnaea 9, 1835, 295. — Sect. *Calyptrostylis* (Nees) Benth. in B. & H., Gen. Pl. 3, 1883, 1060. — Div. *Calyptrostylis* sect. *Aureae* Clarke, Kew Bull. add. ser. 8, 1908, 118. — Lectotype: *Rhynchospora longirostris* Ell.
2. Sect. *Echinoschoenus* (Nees) Benth. in B. & H., Gen. Pl. 3, 1883, 1060; Pax in E. & P., Pfl. Fam. II, 2, 1887, 116. — *Echinoschoenus* Nees & Mey. ex Nees, Linnaea 9, 1835, 297. — Div. *Polycephalae* Clarke, Kew Bull. add. ser. 8, 1908, 118. — Sect. *Polycephalae* Clarke in Urban, Symb. Ant. 2, 1900, 104; Kük., Bot. Jahrb. 74, 1949, 429. — T.: *Echinoschoenus triceps* (Vahl) Nees.
3. Sect. *Haplostylis*. — Sect. *Capitatae* Kunth, En. 2, 1837, 288. — *Sphaeroschoenus* W.-A. & Nees ex Nees, Nov. Act. Ac. Caes. Leop.-Car. 19, Suppl. 1843, 97. — Sect. *Haplostylis* (Nees) Benth. in B. & H., Gen. Pl. 3, 1883, 1059; Clarke, Fl. Br. Ind. 6, 1893, 669. — Sect. *Sphaeroschoenus* (Nees) Clarke, Fl. Br. Ind. 6, 1893, 668. — Sect. *Pauciflorae* Kük., Bot. Jahrb. 74, 1949, 479. — T.: *Haplostylis meyenii* Nees.

II. Subgen. *Rhynchospora*. — Ser. *Dichostyleae* Benth. in B. & H., Gen. Pl. 3, 1883, 1059. — Ser. *Diplostyleae* Clarke, Fl. Br. Ind. 6, 1893, 671; Kew Bull. add. ser. 8, 1908, 119. — Subgen. *Distylis* Pax in E. & P., Pfl. Fam. II, 2, 1887, 117. — Subgen. *Diplostyleae* Kük., Bot. Jahrb. 74, 1949, 500. — T.: *Rhynchospora alba* (L.) Vahl.

4. Sect. *Glaucae* Clarke in Urban, Symb. Ant. 2, 1900, 106; Kew Bull. add. ser. 8, 1908, 120. — Sect. *Stenophyllae* Kük., Bot. Jahrb. 75, 1950, 142. — T.: *R. rugosa* (Vahl) Gale = *R. glauca* Vahl.
5. Sect. *Campylorhachis* Benth. in B. & H., Gen. Pl. 3, 1883, 1061 [2]). — Sect. *Tenues* Kük., Bot. Jahrb. 75, 1950, 186. — Lectotype: *Rhynchospora gracillima* Thwaites.

## XIII. RHYNCHOSPORA HOOKERI BOECK.

A remarkable species, apparently often mistaken for the common *R. corymbosa* (L.) Britt., to which it is very similar in habit. It can readily be distinguished by the quite different nut suddenly narrowed at the apex into a short cylindrical neck and crowned by the narrow conical-subulate beak (the persistent style-base), which is only half as wide as the nut proper.

Kükenthal (Bot. Jahrb. 74, 1949, 427) mentions *R. hookeri* from a few Indian localities and a single one in Burma, as well as from the only Malaysian locality known (W. Java, Indramaju, forestry Plosokerep: *van*

[1]) Kunth's epithets are intended as sectional names; cf. his Enumeratio 2, p. 64 sub 13, p. 79 sub 17, p. 94 sub 19, etc.

[2]) Validly published, although provided with a question mark; cf. Code 1956, art. 33, note 1.

*Steenis 6675, 7473*). It occurs also in Siam (*Howard 27* and *Kerr 13064* in K, *Kostermans 1309, 1324* in L), Cambodia (*Poilane 15380,* P) and Tonkin (*d'Alleizette s.n. in 1908,* L). In Java it was collected away back in the last century by Korthals (L, sub nos 909.90.318 and 909.90.338, without precise locality), and in the Malay Peninsula as early as 1910: Perlis, Kanga fields: *Ridley s.n.* (SING).

## XIV. RHYNCHOSPORA RUBRA (LOUR.) MAKINO VAR. HIRTICEPS KÜK.

In *Rhynchospora rubra* the stems and leaves are usually glabrous. A specimen from Luzon *(Vanoverbergh 463)* with the stems setulose-pilose at the apex and the margins and midrib of the leaves densely ciliate was distinguished as var. *hirticeps* Kük., Bot. Jahrb. 74, 1949, 495. I have seen this remarkable variety also from the following localities:

CELEBES. S E. C e l e b e s, Rumbia, Wambukowu, 40—130 m, monsoon forest: *Elbert 3092* (L).

NEW GUINEA. S E. N e w G u i n e a, Koitaki, 1500 ft, open grassy hillside: *Carr 11910* (L, SING).

## XV. NOTES ON RHYNCHOSPORA SUBMARGINATA KÜK.

**Rhynchospora submarginata** Kük., Bot. Jahrb. 74, 1949, 498 — *Rhynchospora marginata* Clarke, Kew Bull. add. ser. 8, 1908, 89; Domin, Bibl. Bot., Heft 85, 1915, 469; non Steud., 1855 — *Rhynchospora longisetis* R. Br., Prodr., 1810, 230, p. p. — *Rhynchospora wightiana* (non Steud.) Camus, Fl. Gén. I.-C. 7, 1912, 146; Ridl. Fl. Mal. Pen. 5, 1925, 164.

1. *Rhynchospora marginata* Clarke was based on a collection of "R. Brown (in hb. Kew. Berol.); North Coast, R. Brown, n. 5993 pro parte (in hb. Mus. Brit.)". The name was replaced by *R. submarginata* Kük. because of the earlier homonym *R. marginata* Steud.

On the sheet in the Kew Herbarium the following annotation is found: "This was no doubt *part* of Bentham's *Rhync. tenuifolia,* for he has drawn the description of the nut of *tenuifolia* (nut bordered by a nervelike margin) from the present plant, whereas in the two authentic type specimens the nut is absolutely immarginate. Nor does the present plant agree with *tenuifolia* Benth. as to habit. The nut is unlike the nut of any of this group (capitate *Haplostylis*) in the Old World and I make it a sp. nova viz *Rynchospora marginata.* C. B. Clarke, May 1889."

This name was only published after Clarke's death, in 1908. The "two authentic type specimens" of *R. tenuifolia* Benth., 1878 (non Griseb., 1866 = *R. subtenuifolia* Kük.) are: N. Australia, Victoria River, *Elsey*; Queensland, Rockingham Bay, *Dallachy,* both in the Kew Herbarium. From them it is clear that Clarke's remark is wrong, for they perfectly agree with Bentham's description "hypogynous bristles 3 nearly as long as the glume, 3 scarcely longer than the nut; beak abruptly contracted at the base so as to appear stipitate" and the nuts are really bordered by a nervelike margin. One of the differences between the nuts of *R. submarginata* and those of *R. subtenuifolia* lies in the fact that in

the former the whitish margin strongly contrasts with the blackish surface, whereas in the latter the margin and the surface are more concolorous, both light brown.

Ridley, l. c., mistook *R. submarginata* for *R. wightiana* (Nees) Steud., to which it is certainly nearer than to *R. subtenuifolia*. Kükenthal, l. c., contrasts *R. wightiana* and *R. submarginata* as follows:

*R. wightiana:* Inflorescentia 1—1$^1/_2$ cm diam., bracteis 4—7 demum divergentibus vel deflexis suffulta. Spiculae 5—6 mm longae. Stylus basi cum vertice nucis aequilata linea constricta ab ea separata. Nux ex toto tuberculata et apice hispidula.

*R. submarginata:* Inflorescentia 6—10 mm diam., bracteis 3—4 (ima

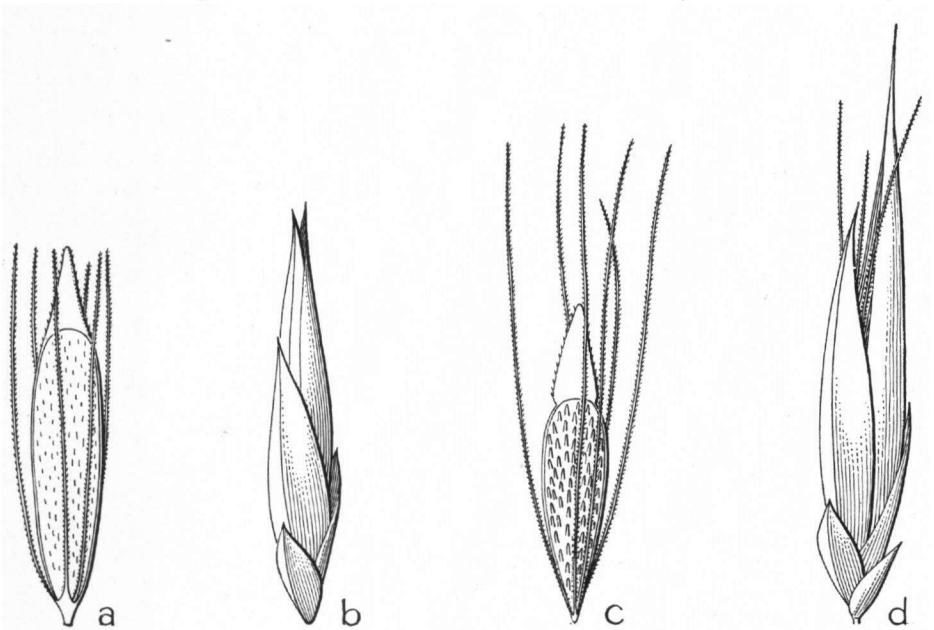


Fig. 4. a—b. Nut and spikelet of *Rhynchospora submarginata* Kük.; c—d. nut and spikelet of *R. wightiana* (Nees) Steud. — All × 10.

ad 10 cm longa erecta culmum continuante) suffulta. Spiculae 5 mm longae. Basis styli cum nuce aequilata ad humeros ejus decurrens. Nux per faciem totam breviter hispida haud tuberculata.

It may be remarked that no value can be attached to the number of involucral bracts, the lowest bract in *R. submarginata* is not always erect and can reach a length of 20 cm, the spikelets in *R. wightiana* are up to 8 mm long, and the style-base in the latter species is only slightly (sometimes hardly) contracted at the base. A character of great value is furnished by the length of the nut-bearing (5th) glume and the next lower one: in *R. submarginata* they are about equal in length, in *R. wightiana* the former is about 2 mm longer than the latter. As a consequence the spikelet in *R. wightiana* is somewhat gaping and the hypogynous bristles are soon exserted from the glumes, and visible from the

outside, whereas in *R. submarginata* the spikelet remains closed, the glumes completely hiding the (shorter) bristles. As a rule the upper flower in *R. submarginata* is more reduced than in *R. wightiana.* In the former species it consists of 1—2 stamens without any trace of bristles or a pistil, in the latter one there are 2 (very rarely 3) stamens, often some short bristles and very rarely a strongly reduced pistil. The stems in *R. submarginata* are usually stouter and more distinctly compressed, and the leaves broader than in *R. wightiana.*

*Rhynchospora submarginata* var. *tonkinensis* Kük. may represent an extremely stout form, also collected in the Malay Peninsula *(Nauen SF 35854).*

The only Malaysian record of *R. submarginata* cited by Kükenthal, is that of var. *glabrinux* Kük.: nut 4 mm long, quite glabrous, somewhat concave on both sides. — Papua: Lake Daviumbu, Middle Fly River, on floating islands, *Brass 7705.* I have not seen this collection, but from the description I greatly doubt whether it can belong to *R. submarginata.*

Attention may be drawn to a mistake which has crept into literature on the distribution of sexes in at least all Malaysian members of Sect. *Haplostylis* (see e. g. Clarke, Illustrations of Cyperaceae, t. 64, f. 7 & 11). Even in the recent publications of Kükenthal's the flowers are described as follows: flos inferior hermaphroditus, superior masculus. I nearly always find the lower flower female, without any trace of an androecium (in *R. rubra* exceptionally a single stamen is present), the upper one (in *R. rubra* sometimes two) male, very rarely functionally male (with an abortive pistil), quite in agreement with Kunth's descriptions in his Enumeratio of 1837 and those of Nees's (in Nov. Act. Ac. Caes. Leop.-Car. 19 Suppl., 1843, 97 & 101).

A peculiar character in all Malaysian *Haplostylis* species, which fell into oblivion after the publication of Kunth's admirable Enumeratio is found in the shape of the anthers, which are destitute of pollen at the more or less attenuate base (see En. p. 288, sect. *Capitatae:* "antherae saepe basi attenuatae et vacuae", and under the species of this section). In later publications I found it mentioned only by Nees, op. cit., p. 99.

Both the distribution of sexes and the shape of the anthers may prove to furnish important sectional characters.

The distribution of *R. submarginata* is insufficiently known. I have seen it from India (*Wight 2911* in K), Siam (several collections in SING), Indo China (all collections cited by Camus under *R. wightiana*), Australia (Brown's type collection), and the following Malaysian localities (all in SING if not otherwise indicated):

MALAY PENINSULA. Setul, heath: *Ridley 14814, 14815* (also in K). — Wellesley, Aor Gading: *Burkill 6593*, one of the weeds of the rice-lands which is ploughed in as green manure. — Perak, Sungai Kepar Padi Test Station: *Berwick K 32.* — Trengganu: *Yapp 357* (K, L). — Pahang, heaths Kuala Pahang: *Ridley 1725.* — P. Langkawi, rice-field near Kuah: *Corner & Nauen SF 37972.* — P. Penang, Telok Kumbat (Bayan Lepas): *Nauen SF 35854.*

**2.** Of *R. wightiana* (Nees) Steud. I have seen only a single Malaysian collection:

MADURA. Pamekasan, in oryzetis exsiccatis 600—1000', 7 & 8. VI. 1858: *Zollinger 3945* (L).

## XVI. COSTULARIA PILISEPALA

**Costularia pilisepala** (Steud.) Kern, comb. nov. — *Carpha arundinacea* Brongn. in Duperrey, Voy. Coq. Bot. 2, 1829, 169, t. 30, non *Costularia arundinacea* (Vahl) Kük. — *Asterochaete arundinacea* Kunth, En. 2, 1837, 312, p.p. (quoad pl. molucc., excl. pl. nov.-caled.); Steud., Syn. 2, 1855, 155, p.p.; Miq., Fl. Ind. Bat. 3, 1856, 338, p.p., non *Schoenus arundinaceus* Vahl — *Restio pilisepalus* Steud., Syn. 2, 1855, 256; F. v. M., Descr. Not. 2, 1885, 18 — *Carpha urvilleana* Gaudich. [ex Nees, Linnaea 9, 1835, 300, nom. nud.] ex Boeck., Linnaea 38, 1874, 272 — *Lophoschoenus urvilleanus* (Gaudich. ex Boeck.) Stapf, J. Linn. Soc. Bot. 42, 1914, 180; Merr., En. Born., 1921, 63; Pfeiff. in Fedde, Rep. 23, 1927, 346, in nota — *Costularia urvilleana* (Gaudich. ex Boeck.) Kük. in Fedde, Rep. 46, 1939, 28; S. T. Blake, J. Arn. Arb. 29, 1948, 95.

*Restio pilisepalus* Steud. was based on a plant of D'Urville collected in Waigeou Island (S. Moluccas, near New Guinea). The specimen is preserved in the Paris Herbarium (P; coll. Steudel). It is not a Restionacea, but a Cyperacea, as was already stated by Masters (in DC., Mon. Phan. 1, 1878, 301) and in the Index Kewensis. It belongs to the species of which the synonymy has been given above, and in all probability to the collection on which also *Carpha urvilleana* Gaudich. ex Boeck. was based. In describing the flowers as having "perianthii laciniis 4 lanceolatis margine dense et longe pilosis; 2 planiusculis apice subdilatatis" Steudel misinterpreted their structure. Each spikelet contains 2 flowers, the lower one male, the upper one bisexual, both with 6 plumose hypogynous bristles and 3 stamens with persistent liguliform filaments.

## XVII. MISCELLANEOUS NEW RECORDS

### 1. Cyperus sphacelatus Rottb.

AUSTRALIA. Queensland, near Cairns, Dec. 1936: *J. Mauritzon & W. D. Francis s.n.* (LD). — POLYNESIA, Tahiti, presqu'île de Taravas, une plante qui envahit les pâturages: *Boubée en 1955* (P).

Previously known from tropical Africa and America, and recently introduced into Malaysia (see Kern, Reinw. 2, 1952, 107; Blumea 8, 1955, 162).

There is an old collection from Coromandel in the Paris Herbarium: *Macé s.n.*, as "*Cyperus compressus* Rottb., Vahl."

### 2. Cyperus sulcinux Clarke.

CHINA. Kwangsi, Shap-Man-Taai-Shan, near Hoh Lung village SE of Shangsze, fairly common in garden, dry sandy soil, June 29, 1933: *W. T. Tsang 22598* (S).

Previously known from India, Farther India, Malaysia, and Australia (Queensland).

### 3. Fimbristylis dipsacea (Rottb.) Clarke.

SUMATRA. Palembang, sealevel, roadside, May 1930: *Kjellberg s.n.* (S).

In Malaysia very rare, previously only known from a few localities in Madura, Bawean, E. Borneo, Luzon, Mindanao, Central Celebes, and Papua.

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