

# New Palms from the Pacific, III\*

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Many palms of New Guinea are incompletely described—only flowering material or only fruiting material may be known and vegetative parts may be only partially represented or described in notes. It is often difficult, therefore, to determine whether recent and often much more complete specimens represent undescribed species or not. For the genera *Heterospathe* and *Licuala*, however, sufficient information is now available to permit the publication of a number of new species with reasonable certainty that they are distinct. Most of the following descriptions are taken from specimens collected by Leonard J. Brass whose interest in palms, as expressed in detailed notes, photographs and ample collections, has contributed greatly to our knowledge of the family in New Guinea.

## HETEROSPATHE

*Heterospathe* Scheffer and *Ptychandra* Scheffer were described as monotypic genera in the same publication in 1876 and have hitherto been separated on the basis of the number of stamens and nature of the pistillode in staminate flowers, the nature of fibers or sclerosomes in the mesocarp of the fruit, and the nature of the inflorescence. Both have conspicuously pedunculate inflorescences which bear two unequal bracts, the lower (prophyll) being short, ancipitous, open at the apex, the upper much exceeding the lower, terete, rostrate, and enclosing the inflorescence nearly until anthesis. In *Heterospathe*, the inflorescence is usually borne among the leaves while

in *Ptychandra* it often does not mature until the subtending leaf has fallen.

These genera could be distinguished with some facility so long as the species were few but recent collections from New Guinea, and in particular the taxa described below as *Heterospathe annectens* and *H. pulchra*, combine supposedly distinctive characteristics so that I am no longer able to maintain separate genera. Still a third genus, *Barkerwebbia*, was erected by Beccari in 1905 but was abandoned by him two years later (*Nova Guinea* 8: 205. 1907) in favor of *Heterospathe*.

The several novelties that follow are therefore described as species of *Heterospathe* and several species of *Ptychandra* are transferred. Remaining species of *Ptychandra* are insufficiently known or are doubtfully distinct, hence are not transferred. An emended generic description is provided but a satisfactory key to all species cannot yet be provided. As here circumscribed, the genus consists of 20 or more species distributed from the Philippine Islands to Micronesia, Amboina, Batjan, Ternate, New Guinea and the Solomon Islands.

***Heterospathe*** Scheffer, Ann. Jard. Bot. Buitenzorg 1:141, 143, 162. 1876.

*Ptychandra* Scheffer, Ann. Jard. Bot.

Buitenzorg 1:140, 143, 160. 1876.

*Barkerwebbia* Beccari, *Webbia* 1:281. 1905.

Solitary or sometimes caespitose, unarmed, dwarf to moderate-sized, monocious palms with stems creeping or erect. Leaves reduplicate pinnate; sheath splitting abaxially and not forming a well defined crownshaft; pinnae acute

\*For earlier papers, see *Principes* 10: 85-99, 1966; 13: 67-76, 1969.

to acuminate with prominent elevated midnerve and often thickened marginal nerves. Inflorescences interfoliar or infrafoliar at anthesis; peduncle prominent, bearing 2 unequal bracts; lower bract (prophyll) persistent, attached near the base and completely encircling the peduncle, not congenitally open but splitting abaxially, more or less dorsoventrally flattened with sharply ancipitous margins, open apically; upper bract attached below or sometimes above the middle of the peduncle, terete, rostrate, enclosing the inflorescence in bud, conspicuously exceeding the lower bract, splitting abaxially and caducous or marcescent as the inflorescence matures; rachis short to elongate, bearing only a few simple rachillae or several prominently pedunculate branches which may be simply branched or twice-branched; ultimate rachillae slender with sessile or slightly depressed, spirally arranged triads of a pistillate flower and 2 staminate flowers subtended by a spreading lip-like bract throughout the rachillae, or with paired or solitary staminate flowers toward the apex of the rachillae; bracteole of the staminate flowers small, bracteoles surrounding the pistillate flower 2, explanate to cupular and imbricate. Staminate flowers slightly to markedly asymmetric; sepals 3, broadly imbricate and rounded, more or less keeled dorsally and gibbous basally; petals 3, valvate, usually about twice as long as the sepals, prominently lined when dry, acutish, one usually somewhat larger than the others; stamens 6-36 or more, distinct, the filaments subulate and strongly inflexed at the apex, anthers oblong in outline, dorsifixed and versatile at anthesis, laterally dehiscent by longitudinal slits; pistillode either small and conic, or columnar, prominent, nearly as long as the stamens, sometimes with an expanded apex: pistillate flowers with 3 broadly imbricate

and rounded sepals; petals 3, broadly imbricate with briefly valvate apices; staminodes 3, dentiform; pistil unilocular, uniovulate, the ovule lateral at top of locule, pendulous, hemi-anatropous, ovary short, soft, expanded upward into a thicker styler region below 3 recurved short stigmas. Fruit globose to ellipsoid, small to large; stigmatic residue excentrically apical or subapical to lateral; exocarp smooth but drying granular over short sclerosomes in the thinly fleshy mesocarp, this with flattened anastomosing fibers against the thin operculate endocarp which is shining inside and not adherent to the seed; seed globose to ellipsoid, attached apically and laterally by the elongate hilum extending nearly the length of the seed; raphe branches simple to anastomosed; endosperm ruminant; embryo basal.

**Heterospatha annectens** H. E. Moore,  
*sp. nov.*

Caulis solitarius ad 12 m. altus; folia ca. 1.5 m. longa pinnis utrinque 30; inflorescentia inter vel infra folia bractea supera pedunculo infra medium inserta, rhachidi ca. 2.5 cm. longa rachillis 3; flos masculus 6 mm. altus staminibus 15 pistillodis ovoideo-conico; fructus ruber obovoideus ca. 18 mm. altus 12.5 mm. in diam.

Stem solitary, 10-12 m. high. Leaves short, arched, on a typical plant averaging 1.5 m. long (including sheath and petiole to 54 cm. long), old leaves merely clasping at the base; sheath and petiole on type each about 24 cm. long, the sheath rather densely lepidote with appressed, brown-membranous scales outside, petiole lepidote to brown-punctulate below, brown-punctulate above; rachis 9-10 dm. long, densely brown-membranous lepidote; pinnae probably more or less 30 on each side, regularly arranged, evenly tapered to an acute or acuminate, obliquely and briefly toothed

apex, the midnerve and 2 submarginal nerves elevated above, densely brown-punctulate on nerves and surface below, the midnerve with large, brown, membranous, basifixed scales at least in basal portion, basal pinnae 34 cm. long, 0.7 cm. wide, middle pinnae 55 cm. long, 2.1 cm. wide, apical pinnae 18.5 cm. long, 1.4 cm. wide. Inflorescences several, among and immediately below the leaves, 5-6 dm. long; lower bract inserted ca. 5 cm. from the base, ancipitous, upper bract inserted ca. 10.5 cm. above the lower and only slightly below the middle of the peduncle, marcescent; peduncle 32 cm. long, clothed with brown and white scales having twisted marginal hairs; rachis short, ca. 2.5 cm. long, with 3 stout stiff rachillae to 28 cm. long, 4 mm. in diam., these glabrous or glabrescent; triads subtended by acute reflexed bract to 1.5 mm. long, bracteoles of pistillate flowers ca. 1 mm. high. Staminate flowers ca. 6 mm. long, yellowish (?), asymmetric; sepals 2.5-3 mm. long; petals 4-5 mm. long, ca. 3.5 mm. broad, strongly nerved when dry; stamens 15; pistillode trifid-conic, about one-half as long as stamen-filaments: pistillate flowers seen in bud only, the perianth in fruit with sepals 2.5 mm. high, petals 5 mm. high, staminodes 3. Fruit red when ripe, obovoid, 18 mm. high including cupular perianth (when not completely mature), 12.5 mm. in diam. (but probably wider when mature), with prominent excentrically apical stigmatic residue; immature seed brown.

Specimens examined. NEW GUINEA. PAPUA: Milne Bay District; Rossel Island, occasional in forests of south slopes, Mt. Rossel, alt. 700 m., October 14, 1956, *L. J. Brass 28409* (A, type).

*Heterospathe annectens* in several ways bridges the differences once thought to exist between *Heterospathe* and *Ptychandra*, resembling the first

in habit and small inflorescence borne among or below the leaves, resembling the last in numerous stamens, short pistillode and rather large fruit. For this reason the epithet *annectens* (linking, joining) was chosen.

This species, like *H. delicatula*, has a once-branched inflorescence with few rachillae but differs in caulescent habit, in the essentially glabrous rachillae, in larger staminate flowers probably of yellowish color, 15 stamens and large fruit. The numerous stamens or large fruit clearly distinguish it from *H. humilis*, *H. elegans*, and *H. Versteegiana* which may have once-branched inflorescences and upper bracts inserted high up on the peduncle.

***Heterospathe Clemensiae*** (Burret) H. E. Moore, *tr. nov.*

*Ptychandra Clemensiae* Burret, Notizbl. Bot. Gart. Berlin **13**:468, 1937; **15**:10. 1940.

Burret listed a number of Clemens collections in 1940 additional to the type to which the following may be added, both identified by him:

NEW GUINEA, TERRITORY OF NEW GUINEA: Morobe District; Ogeram nang, 6000 ft., 24 Feb. 1937, *Clemens 5478* (A); Yunzaing, 4500 ft., 20 June 1937, *Clemens 6566* (A).

***Heterospathe delicatula*** H. E. Moore, *sp. nov.*

Palma acaulis; folia 1-1.8 m. longa pinnis utrinque 18-21; inflorescentia inter folia erecta ad 8 dm. alta rhachidi tomentoso-lepidota 1.5-10 cm. longa rachillis tomentosis 3-5 ad 20 cm. longis; flos masculus purpureus 3.5-4 mm. altus staminibus 8-9 pistillodio ovoideo-conico; fructus subglobosus 10 mm. altus 8 mm. in diam.

Stems not produced above ground, probably prostrate. Leaves few, ascending, 1-1.8 m. long on flowering plants;

sheath lepidote with small, scattered, light brown, membranous scales, split about halfway to the base opposite the petiole, 10–22 cm. long, the margin fibrous; petiole 29–54 cm. long, rounded and with scattered, minute, pale scales below, convex and essentially glabrous above; rachis 48.5–91 cm. long, lepidote or punctulate above and below; pinnae 18–21 on each side, regularly arranged except the approximate basal pairs, acuminate, the midnerve and 2 secondary nerves near the margins prominent and elevated and membranous-lepidote or merely punctulate above, nerves and surface more or less densely brown-punctulate below and the midnerve with large, brown, membranous, basifixed scales at least in the basal portion, basal pinnae 15–22 cm. long, 0.4–0.7 cm. wide, middle pinnae 20–34 cm. long, 1.5–2.8 cm. wide, apical pinnae 10–16 cm. long, 0.7–1.7 cm. wide. Inflorescences interfoliar, erect, 68–80 cm. high; lower bract 16–19 cm. long, sparsely brown lepidote, upper bract prominently brown lepidote, terminated by a flat rostrum 3–4 cm. long, exceeding the lower by 33–38 cm. and exceeding the peduncle, this densely ferruginous-tomentose-lepidote at least when young; rachis ferruginous- or brown-tomentose-lepidote, 1.5–10 cm. long, with 3–5 rachillae, these 10–20 cm. long, tomentose like the rachis and bearing triads of flowers at intervals of ca. 3 mm.; triads subtended by a prominent acute bract ca. 1 mm. high; bracteoles surrounding the pistillate flowers brown, erect, to ca. 1 mm. high. Staminate flowers purple in bud, 3.5–4 mm. high, acute; sepals ca. 1 mm. long, more or less rounded; petals 3–3.5 mm. high, nerved when dry, asymmetric, angled and more or less acute at the apex; stamens 8–9; pistillode trifid-conic, ca. one-half as long as the stamens; pistillate flowers seen in bud only, the perianth

in fruit of petals 4 mm. long, sepals 2 mm. high; staminodes 3–4. Fruit red at maturity, subglobose, ca. 10 mm. high, 8 mm. in diam. when dry, 10 mm. diam. when fresh, with excentrically subapical stigmatic residue, drying granular; seed brown, 6.5 mm. high, 6 mm. in diam.; endosperm ruminant.

Specimens examined. NEW GUINEA. PAPUA: Milne Bay District; common in oak forest, north slopes of Mt. Dayman, Maneau Range, alt. 1150 m., June 22, 1953. *L. J. Brass 23005* (BH, type; A, isotype).

The epithet is taken from the dwarf habit and small inflorescences which, like those of *H. annectens*, are only once-branched into few rachillae. In this respect, these two species differ from those previously described except *H. humilis*, *H. elegans* and *H. Versteegiana*, all of which have the upper bract inserted well above the middle of the peduncle and staminate flowers with 6 stamens. *Heterospatha delicatula* differs from *H. annectens* in its acaulescent habit, somewhat smaller purple staminate flowers with only 8–9 stamens, in the smaller fruit, and in the much more slender, tomentose rachillae.

***Heterospatha glabra*** (Burret) H. E. Moore, *tr. nov.*

*Ptychandra glabra* Burret, Notizbl. Bot. Gart. Berlin 11:713. 1933.

The type of this species was collected in flower by E. Mayr (n. 611) in the Cyclops Mountains, West Irian, in 1928. A somewhat more recent collection of fruiting material collected by Brass appears to belong here. The fruits are red, subglobose, 15 mm. high, 13–14 mm. in diam. with excentrically apical stigmatic residue. The Brass specimens cited below differ from the description of the type in that rachillae are sparsely brown-lepidote in flower, but the correspondence is otherwise so good that

the present disposition seems reasonable. Brass's field notes state that collections were made in mossy forest, where common in gullies and on sheltered slopes as an intruder from lower levels.

Specimens examined. NEW GUINEA. WEST IRIAN: 15 km. S. W. of Bernhard Camp, Idenburg River, 1800 m. alt., Jan. 1939, *L. J. Brass 12119* (A); *12139* (A).

***Heterospathe glauca*** (Scheffer) H. E. Moore, *tr. nov.*

*Ptychandra glauca* Scheffer, Ann.

Jard. Bot. Buitenzorg 1:160. 1876

*Ptychosperma Musschenbroeckianum*

Beccari, Malesia 1:53, 100. 1877

(*'Musschenbroeckiana'*).

The name *Ptychosperma Musschenbroeckianum* is placed in synonymy here on the authority of Beccari in manuscript edited after his death by Martelli (*Nuovo Giornale Botanico Italiano* ser. 2, 42: 74, 78. 1935). The type of *Heterospathe glauca* is from Batjan Island, that of *P. Musschenbroeckianum* from Ternate, and there are minor differences in the number of stamens and of staminodes noted by Beccari.

***Heterospathe lepidota*** H. E. Moore, *sp. nov.*

Ab *Heterospathe Versteegiana* sepalis floris masculi et feminei castaneo-vel ferrugineo-lepidotis et pinnarum nervis secundariis submarginalibus non brunneo-punctulatis differt.

Solitary, to 5.5 m. high, the stem 4 m. high, 5 cm. in diam. at base, 7.5 cm. in diam. under leaves. Leaves 2.5 m. long, 7.5 dm. broad, with ca. 35 pairs of pinnae; sheath short, ca. 20 cm. long, sparsely dark-brown appressed-lepidote where protected, with fibrous margin produced opposite petiole; petiole ca. 55 cm. long, sparsely to very sparsely brown appressed-lepidote above

and below; rachis similarly lepidote; pinnae slender, not prominently brown-punctulate below, with few large brown scales on midnerve below, the midnerve and submarginal secondary nerves prominent and elevated above, basal pinnae ca. 45 cm. long, 1 cm. wide, middle pinnae ca. 62 cm. long, 2.5 cm. wide, apical pinnae ca. 36 cm. long, 1.5–2.7 cm. wide. Inflorescences interfoliar, to 1 m. long, erect in flower with drooping top, more clearly drooping in fruit; peduncle ca. 85 cm. long, densely brown-punctulate basally to densely ferrugineous-lepidote-tomentose apically; lower bract (not seen) inserted near the base, upper bract inserted ca. 52 cm. above the base, marcescent with tubular base remaining; rachis densely ferrugineous-lepidote-tomentose, with 12–15 branches, the lower and middle branches at least again once-branched into densely ferrugineous-lepidote-tomentose rachillae to 36 cm. long, 2–3 mm. in diam., densely flowered, the triads subtended by a very low bract; bracteoles subtending the pistillate flower low. Staminate flowers yellowish, ca. 3 mm. long; sepals 1.2 mm. high, rounded and ferrugineous-lepidote dorsally; petals glabrous, 2.4–2.8 mm. long; stamens 6; pistillode cylindrical, as long as stamens in bud; pistillate bud with sepals ferrugineous-lepidote dorsally. Fruit red, drying roughened, ellipsoid-ovoid with excentrically apical stigmatic residue, 1.5–1.7 cm. long when dry, 1 cm. in diam.; seed ovoid, light brown, rounded at apex, 9 mm. high, 8 mm. in diam.

Specimen examined. NEW GUINEA. PAPUA: Northern Division; on steep slope of ca. 10 m. deep gully, fairly open to sun, ca. 2 km. N. E. of Sangara homestead (ca. 10 km. W. of Popondetta), alt. 200 m., August 7, 1953. *R. D. Hoogland & J. S. Womersley 3241* (A, type).

Vernacular name: *soriki* (Orokaiva language, *mumuni*).

*Heterospathe lepidota*, so named because of its lepidote sepals, is similar to *H. Versteegiana* but differs in its vestite sepals and in its pinnae with conspicuously elevated secondary nerves toward the margin of the upper surface and little or no brown punctulation on the lower surface. It clearly belongs with that group of species which Beccari at one time called *Barkerwebbia*, including in addition to the above two, *H. elegans* and *H. humilis*.

**Heterospathe Muelleriana** (Beccari)

Beccari in Martelli, Nuov. Giorn. Bot. Ital. ser. 2, **42**:50, 74. 1935.

*Ptychandra Muelleriana* Beccari, Nuov. Giorn. Bot. Ital. **20**:177. 1888.

New collections agree with the type of *Heterospathe Muelleriana* and extend its range substantially. They also permit the addition of information on the staminate flowers which are 7–8 mm. long with (10– ) 14–15 stamens and a trifid-conic pistillode shorter than the stamen-filaments.

Specimens examined: NEW GUINEA. PAPUA: Eastern Highlands District; northeast slopes, Mt. Michael, alt. 2000 m., 9 Sept. 1959, *L. J. Brass 31484* (A). Central District; Mt. Obree, a. 1887, *W. A. Sayer s. n.* (FI, type). Milne Bay District; east slopes, Goodenough Island, alt. 1600 m., 20 Oct. 1953, *L. J. Brass 24839* (A).

**Heterospathe obriensis** (Beccari) H. E. Moore, *tr. nov.*

*Ptychandra obriensis* Beccari, Nuov. Giorn. Bot. Ital. **20**:178. 1888.

*Ptychandra? montana* Burret, Notizbl. Bot. Gart. Berlin **12**:324. 1935.

Additional collections suggest that *Heterospathe obriensis* would include *Ptychandra? montana* which Burret compared only with *Ptychandra glabra*

and *P. glauca*. I have examined types of both species and have compared other collections with them. Staminate flowers, not previously described, are 9–11 mm. long with 18–21 stamens and short conic pistillode. Fruit is variable in size, 29–35 mm. high, 22–28 mm. in diameter. The species as I now interpret it is known from the following stations in Papua.

Specimens examined. NEW GUINEA. PAPUA: Central District; Mt. Tafa, May–Sept., 1933, *L. J. Brass 4974* (isotype of *P. montana*, A); Mt. Obree, a. 1887, *W. A. Sayer s. n.* (type of *P. obriensis*, FI). Milne Bay District; mossy forest of riverbanks, gorge of Upper Gwariu River, north slopes of Mt. Dayman, alt. 2030 m., 15 June 1953, *L. J. Brass 22940* (A). District not known; Lala River, alt. ca. 5000 ft., 26 Dec. 1935, *C. E. Carr 14023* (A), 7 Mar. 1936, *C. E. Carr 16004* (BH).

**Heterospathe pulchra** H. E. Moore, *sp. nov.*

Caulis solitarius ad 10 m. altus; foliorum pinnae utrinque 40–50; inflorescentia infra folia ad 1.24 m. longa ramis in rachillas glabras glaucas 10–11 divis; flos masculus 3–4 mm. altus staminibus 6 pistillodio trifido-conico; fructus ruber globosus 8 mm. in diam.

Stem solitary, 8–10 m. high. Leaves fewer than 10, pale green; petiole and short sheath ca. 1 m. long; sheath alone ca. 35 cm. long with scattered, minute, brown, membranous, fringed scales; petiole ca. 65 cm. long, at first with pale appressed scales (at least above) becoming glabrescent or glabrous; blade ca. 2.5 m. long; rachis glabrous; pinnae probably 40–50 on each side, glabrous except for large, shining, brown, membranous scales on the midnerve below, the lower surface not or scarcely brown-punctulate, midnerve and submarginal nerves prominent above, basal pinnae

nearly 9 dm. long, 0.7 cm. wide, terminating in a loria, middle pinnae ca. 8 dm. long, 2.2 cm. wide, apical pinnae ca. 31 cm. long, 0.5 cm. wide. Inflorescences infraxillary (1 in flower, 1 in fruit), ca. 1.24 m. long; peduncle 8.4 dm. long; bracts not known; rachis not known; branches several, again once-branched into 10–11 slender, glabrous and (at anthesis) glaucous or glaucescent rachillae to 16 cm. long, 2 mm. wide; triads subtended by an acute to rounded bract; bracteoles of pistillate flowers low, rounded, brown, to ca. 1 mm. high. Staminate flowers asymmetric, 3–4 mm. high; sepals glabrous, ca. 1.4 mm. high; petals angled apically, 3–3.5 mm. high; stamens 6; pistillode trifid-conic, shorter than the stamen-filaments: pistillate bud 3 mm. high, the pistillate perianth in fruit with sepals 2 mm. long, petals 3.5 mm. long, and 3 staminodes. Fruit red at maturity, globose, with lateral stigmatic residue in upper third, 9 mm. high, 8 mm. in diam.; seed brown, 6.5 mm. in diam. with 5–6 ascending raphe-branches from the base.

Specimen examined. NEW GUINEA. PAPUA: Milne Bay District; Fergusson Island, common locally in heavily mossed forest of ridge crests, mountains between Agamoia and Ailuluai, alt. 900 m., June 12, 1956. *L. J. Brass 27116* (A, type).

This species is exceptional in several respects. The glabrous rachillae with a distinct glaucescence at anthesis, the combination of six stamens and trifid-conic pistillode in the staminate flower, the lack of conspicuous brown punctulation on the lower surface of the pinnae, and the small globose fruit differentiate the species from all others in New Guinea. It is noteworthy that the staminate flowers of *H. pulchra* combine the number of stamens (6) formerly attributed to *Heterospatha* and the type of pistillode (trifid-conic, shorter than

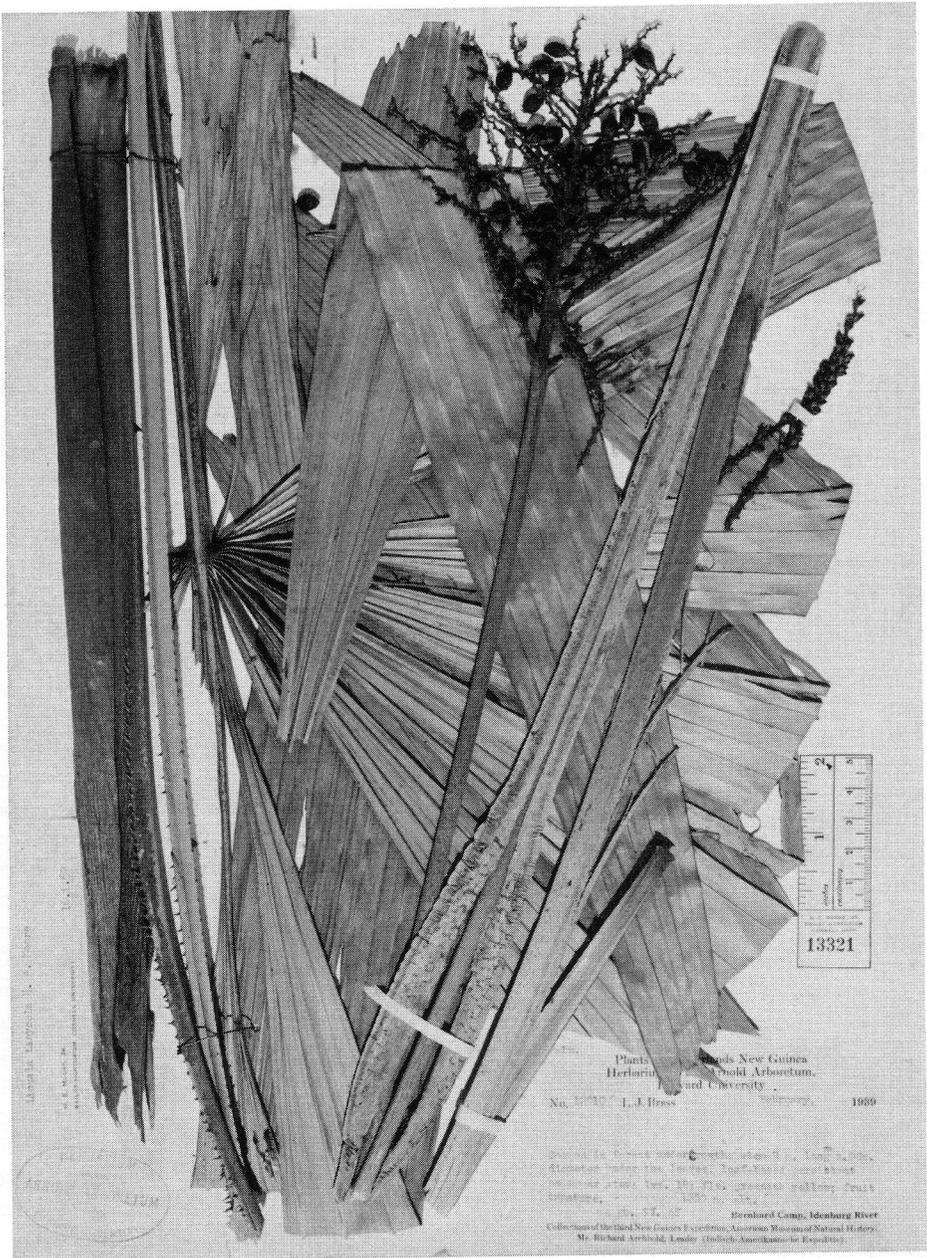
stamen-filaments in bud) formerly attributed to *Ptychandra*.

## LICUALA

*Licuala tanycola* H. E. Moore, *sp. nov.*

*Licualae parviflorae* similis sed floribus pedicellatis, fructu globoso-ellipsoidalibus 13 mm. longo 9 mm. in diam., foliis dense brunneo-lepidotis vel brunneo-punctulatis, inflorescentiis bracteam unicam gerentibus differt.

Stem solitary, to 2 m. high, 6 cm. in diam. below leaves, clothed in upper portion with persistent leaf-bases. Leaves ca. 18; sheath (from interior leaf) ca. 35 cm. long in entirety, ca. 17 cm. long from base to point of separation from petiole, produced in a ligule ca. 18 cm. long adaxial to the petiole, this ligule adnate ca. 12 cm. to the adaxial margins of the petiole and with a free tip ca. 6 cm. long, the ligule of coarser fibers than the basal portion of the sheath and these tending to separate, the whole reddish brown when dry and rather densely clothed with irregular, impressed patches of very thin, membranous, brown-centered, irregularly hyaline- or whitish-margined scales where protected, or merely dark-brown-punctulate with persistent scale attachments where exposed; free portion of petiole ca. 78.5 cm. long, armed with recurved to spreading teeth to 3 mm. long for ca. 50 cm. above base, unarmed apically, concave adaxially at the base becoming convex with a rounded central ridge toward the apex, rounded abaxially at the base becoming prominently ridged toward the apex, the adaxial surface essentially glabrous with occasional small, linear, brown, membranous scales, the abaxial surface with a more or less continuous cover of appressed, brown-lacerate-margined, interlocking, peltate scales where protected or rather densely brown-punctulate with persistent scale



1. *Licuala tanycola*. Photograph of Brass 13010 showing inflorescence and leaf with sheath and ligule. Photo by H. H. Lyon.

attachments where exposed, continued abaxially as a prominent costa ca. 5 cm. long and then into the central segment, terminated adaxially by a short, acute

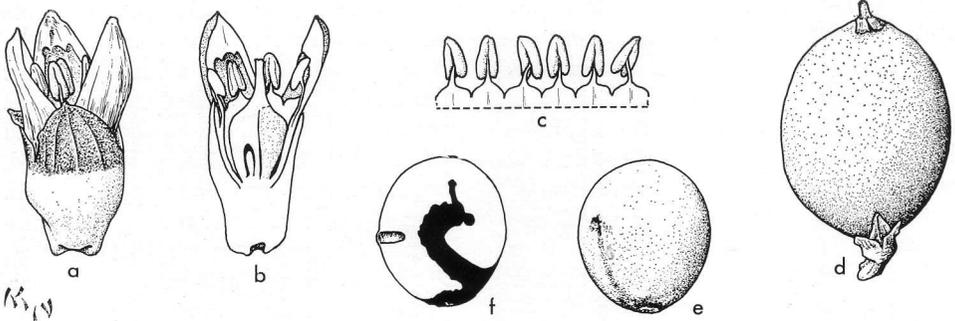
hastula 1-1.5 cm. long; segments (13- ) 17-19, densely covered below, less densely above, with minute, shining, red-brown scales, the outermost seg-

ments (21- ) 37-42 cm. long, 2-5 cm. wide at about the middle, the central on each side (41- ) 50-68 cm. long, 5-9 cm. wide, the median segment with a long slender base, 50-70 cm. long, 5.4-7.5 cm. wide, all the segments widest at or above the middle, somewhat narrowed to the obliquely toothed apex and long-cuneate at the base, the major nerves 3-5 and elevated on the upper surface. Inflorescence 1.35-1.7 m. long (in 2 complete inflorescences available); peduncle elongate, 1.24-1.4 m. long, bearing a single ancipitous bract (prophyll) to 50 cm. long or more, inserted ca. 34-45 cm. above the base, expanded apically and often splitting dorso-ventrally into two keeled valves, both peduncle and bract rather densely clothed with patches of red-brown peltate scales with irregularly woolly-lacerate margins or merely brown-punctulate with persistent scale attachments; rachis 8-22 cm. long, with 17-30 or more branches, these either all undivided or the lower few once-branched with up to ca. 20 rachillae, the rachis and flexuous rachillae densely red-brown furfuraceous at anthesis and in fruit, each branch subtended by an acute bract, those of the lowest branches up to 2.5 cm. long. Flowers greenish-yellow in life, ca. 5 mm. long when dry, solitary or very rarely paired on reddish-purple (when dry) pedicels to 3 mm. long at bases of rachillae or only 1 mm. long at or near the apex, each pedicel subtended by a minute bract; calyx ca. 3.5 mm. long, produced basally in a ring around the apex of the pedicel and adnate ca. 1 mm. to the floral receptacle, then free, with 3 acute lobes ca. 1-1.5 mm. long, the base drying pale brown externally, not nerved, sparingly clothed with minute, red-brown scales, the lobes drying red-purple with distinct nerves and essentially glabrous; corolla 4 mm. long, drying red-purple with prominent nerves, the tube 1-1.5 mm. long, the

lobes 3 mm. long, thick, acute, excavate on inner surface; stamen-filaments connate by their bases in a 6-lobed ring at the throat of the corolla-tube, the bases broad, not lobed, suddenly narrowed into subulate tips, anthers basifixed, sagittate, ca. 1 mm. long; pistil 3 mm. long at anthesis. Fruit red (?), globose-ellipsoid at maturity, ca. 13 mm. long, 9 mm. in diam., with abortive carpels prominent at the apex; seed globose, 7 mm. in diam., with testa intruded beyond the middle.

Specimens examined. NEW GUINEA. WEST IRIAN: common in forest undergrowth, 6 kms. southwest of Bernhard Camp, Idenburg River, 1200-1350 m. alt., February, 1939, *L. J. Brass* 13010, 13010A (holotype), 13010B, 13010C (A); occasional in rain forest of both ridges and river plains, 4 kms. southwest of Bernhard Camp, Idenburg River, 850 m. alt., March, 1939, *L. J. Brass* 13436, 13460 (A).

*Licuala tanycola*, from the Greek *tanyein* (to stretch out) and *kolon* (limb, leg) in allusion to the long peduncle of the inflorescence (Fig. 1), most closely resembles *L. parviflora* Dammer ex Beccari of subgenus *Licualella* in Beccari's monograph of the genus (*Annals of the Royal Botanic Garden, Calcutta* 13: 109-224. 1933 [1931]). I have not seen the type of *L. parviflora* (formerly at Berlin) but from the description, it becomes evident that *L. tanycola*, though similar in flower, differs in several respects. The peduncle bears only one major bract rather than the two reported for *L. parviflora* (though Beccari actually described only one), the flowering axes are more numerous from a continuing rachis, the flowers are clearly and prominently pedicellate rather than sessile, the calyx is prominently 3-lobed rather than shortly 3-toothed (Fig. 2), the fruit is globose-ellipsoid, ca. 13 mm. long, 9 mm.



2. *Licuala tanycola*. a, flower, external view  $\times 6$ ; b, flower, vertical section  $\times 6$ ; c, stamens removed from corolla-tube, abaxial (dorsal) view  $\times 6$ ; d, fruit  $\times 2\frac{1}{2}$ ; e, seed, external view  $\times 2\frac{1}{2}$ ; f, seed in vertical section showing embryo and intruded seed-coat  $\times 2\frac{1}{2}$ . (a-c from *Brass 13010A*; d-f from *Brass 13460*, both at Arnold Arboretum).

in diameter rather than exactly globose and 9 mm. in diameter, and the leaves are densely brown-lepidote or brown-punctulate on both surfaces. Beccari described the leaves of *L. parviflora* as polished on both surfaces with no reference to scales which he usually mentioned.

Superficially, *Licuala tanycola* resembles also *L. Beccariana* Furtado of Beccari's subgenus *Dammera* which has a similar long-pedunculate inflorescence, bract and pedicellate flowers. The inflorescence bears only 3-4 branches, the flowers are twice as large as those of

*L. tanycola* and possess very different stamens.

A noteworthy feature of *L. tanycola* is the prominent continuation of the leaf-sheath above the petiole and adnate to its inner face (Fig. 1). Seldom is the entire leaf-sheath collected or even noted, though it may offer important diagnostic characteristics as in *Thrinax* (Read, R. W., *A study of Thrinax in Jamaica*, Ph.D. thesis, University of the West Indies, Mona, Kingston, Jamaica, 1967). Noteworthy also is the reduction of major bracts on the inflorescence to one.

## NEWS OF THE SOCIETY

Mr. Otto Martens, immediate Past President of The Palm Society, has been awarded the Pacific Coast Nurseryman Award—the highest recognition to be paid anyone in California horticultural circles. The award is accorded to the individual having made outstanding contributions in the field of horticulture.

In presenting the award, Mr. James L. Perry, chairman of C. A. N.'s awards committee, cited Mr. Martens' efforts in

re-popularizing the use of palms in California landscapes. "In the past seventeen years, thanks mainly to Otto Martens, Californians have come to value this plant family as one of the greatest for semi-tropical landscaping. Mr. Martens promoted the use of palms. More than fifty species are now commercially available."

Keep up the good work, Otto!

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