

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 dorso-ventrally 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 periculate 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.

Heterospathe 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 supra pedunculo infra medium inserta, rhachidi ca. 2.5 cm. longa rachillis 3; flos masculus 6 mm. altus staminibus 15 pistillodio 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-puncticulate below, brown-puncticulate 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, ancapitous, 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 trifold-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; Ogeramang, 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;