New Palms from the Pacific, II*

HAROLD E. MOORE, JR.

L. H. Bailey Hortorium, Cornell University, Ithaca, New York, 14850

Specimens collected by members of the Royal Society Expedition to the Solomon Islands in 1965 and by several individuals in the Solomons and in New Caledonia represent taxa not previously described or otherwise of interest because of shifts in generic disposition. Those for which material seems adequate are described here.

BURRETIOKENTIA

Burretiokentia hapala H. E. Moore, sp. nov.

Ab Burretiokentia Vieillardii rachillis dense et longe tomentosis 14–15 mm. in diam., fructibus ovoideis ca. 16 mm. longis infra medium latissimis differt.

Stem solitary, dark green with prominent pale nodes, erect, to 10 m. high, ca. 7.3 cm. in diam. near enlarged base, ca. 5.7 cm. D.B.H., the internodes ca. 12.5 cm. long. Leaves ca. 10, spreading; sheath ca. 1 m. long, olive-green (but inner sheaths pinkish before exposure), densely covered with gray-brown tomentose scales, or brown-puncticulate where scales have been worn or rubbed off. with prominent oblique lines from petiole base toward the line opposite the petiole; petiole very short, ca. 5 cm. long above dry margin of sheath, green, concave above, convex below, where clothed with brown-centered, pale-margined, waxy scales or merely brownpuncticulate from persistent scale bases; rachis ca. 2.4 m. long, lower surface rounded and rather densely brownpuncticulate or with brownish-tomen-

face channelled with marginal grooves near base, to deltoid at apex and rather densely pale-tomentose scaly or brownpuncticulate: pinnae about 40 on each side, regularly arranged, narrowly elliptic in general outline, tapered to a strongly reduplicate base obliquely acute apex, dull green, irregularly and sparsely brown-puncticulate above, paler and densely brown-membranous-lepidote or brown-puncticulate below, the midnerve prominent and elevated above, clothed below, at least basally, with shining, brown, basifixed or medifixed, lacerate, membranous scales, secondary nerves ca. 5 on each side. prominent below and clothed basally with scales like those of the midnerve, tertiary nerves numerous, lower pinnae ca. 5.5 dm. long, 2 cm. wide, median pinnae ca. 9 dm. long, 5 cm. wide, apical pinnae ca. 3.3 dm. long, 3 cm. wide. Inflorescences 3-4 (in type) among the leaves, about twice as broad as long, densely pale-brown tomentose in all parts except at the base below the insertion of the first bract; bracts 2, green in bud (not obtained); peduncle very short, ca. 5-6 cm. long; rachis ca. 13-16 cm. long to base of terminal flowering portion; branches ca. 13–14, the lowest branches spreading, nearly as long as entire inflorescence, with short peduncular portion, divided into ca. 7 rachillae to ca. 35 cm. long, 14 mm. in diam. (in staminate bud), median branches with 2-3 rachillae, the apical 6-7 rachillae undivided, to ca. 34 cm. long, 14 mm. in diam. (including a central axis 4-5 mm. in diam. clothed with intermixed brown and white hairs to 5 mm. long). Stam-

tose scales where protected, upper sur-

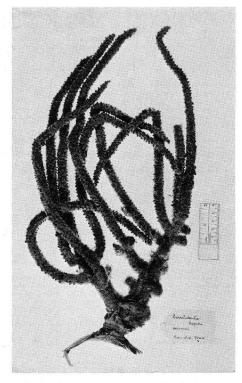
^{*}From work relating to National Science Foundation Grants GB-1354 and GB-7758. For an earlier paper, see *Principes* 10: 85–99. 1966.

inate flowers 5-5.5 mm. long, essentially symmetric; sepals 2.5-3 mm. long, about half as long as petals, broadly imbricate, glabrous except minutely fimbriate margin; petals ca. 3.5 mm. long; stamens 6, filaments sharply inflexed at the apex in bud, anthers ca. 2.5 mm. long with sterile portion in center of each locule laterally: pistillode angled-columnar, truncate, about one-half as long as stamens: pistillate flowers (from a flower remaining on an old inflorescence branch) ca. 6 mm. long; sepals ca. 3 mm. long, broadly imbricate and rounded; petals about 6 mm. long; staminodes apparently 3, dentiform. Fruit (not completely mature, from Lavoix 25) ovoid, 16 mm. long, 9 mm. in diam., drying granulose-roughened; stigmatic residue exactly apical; endocarp (from type) 10 mm, long, 8 mm, in diam, the hilar keel about as long as the lateral processes, the surface more or less roughened, the lateral processes flanking a dorsal groove; seed shaped like the endocarp, 8 mm. high, 6.5 mm. in diam.; endosperm homogeneous; embryo basal.

Specimens examined. NEW CALEDO-NIA: in gallery forest along stream in *Melaleuca* savanna, on road to Parari from Balade, alt. ca. 350 m., 8 April 1964, *H. E. Moore, Jr., R. Barets, L. Chevalier & L. Lavoix 9324* (BH, holotype); same locality, 20 Sept. 1965, *L. Lavoix 25* (BH).

Burretiokentia hapala (from hapalus—soft to the touch) was thought at first to be a species of Basselinia, despite its robust habit, because of the very densely woolly rachillae in which the staminate buds appear to be sunken. The actual axis is, in fact, rather slender, measuring only 4–5 mm. in diameter, but the long hairs which obscure the axis and all but the tips of the flowers make it appear much thicker. It is the long hairs that suggest the epithet.

Examination of staminate buds and



1. Inflorescence of Burretiokentia hapala, branches partially trimmed, showing woolly rachillae (Moore et al. 9324, BH). Photo by Howard H. Lyon.

dissection of one fruit recovered from a fallen inflorescence, together with additional immature fruits from Lavoix 25, show that the correct genus for this striking palm is the previously monotypic Burretiokentia. This second species is readily distinguished from Burretiokentia Vieillardii by the woolly (Fig. 1) rather than glabrous (Fig. 2) rachillae; by the fruit (Fig. 3a) which is ovoid and attenuate toward the apex (when not perfectly mature) rather than nearly globose when fresh (Fig. 40); and by the endocarp and seed with the adaxial keel higher than the lateral ridges (Fig. 3b-d) rather than lower (Fig. 4q, s).



2. Burretiokentia Vieillardii with inflorescences in several stages (Moore et al. 9334).

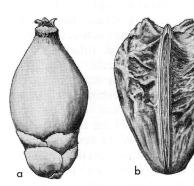
CLINOSTIGMA

Two undescribed species of *Clinostigma* were among palms collected by members of the Royal Society Expedition to the Solomon Islands in 1965. The genus had not previously been reported from these islands but is readily recognized by its usually scopiform, two-to three-times (rarely simply) branched

inflorescence, massive tall trunk, sometimes with stilt roots developed, large leaves having pinnae covered below with minute scales, and above all in the structure of the staminate flower with its acute, usually keeled sepals, asymmetric acute petals, 6 stamens with filaments inflexed at the apex, and a small, ovoid or conic-ovoid, briefly to deeply trifid pistillode much shorter than the stamens.

Fourteen names are recognized in the genus at present as representing species, though the number will probably be reduced when taxa in Samoa and the Fiji Islands can be properly studied. The distribution is unusual for palms: Bonin Islands (C. Savoryanum), Caroline Islands (C. carolinense, C. ponapense), Samoa (C. onchorrhynchum, C. Powellianum, C. savaiiense, C. samoënse, C. Vaupelii, C. Warburgii), Fiji Islands (C. exorrhiza and C. Smithii, which may not be distinct), the Banks Group of the New Hebrides (C. Harlandii), and now the Solomon Islands with C. Gronophyllum and C. haerestigma described below.

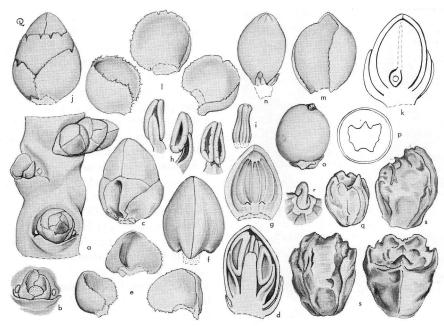
Specific differences, so far as material permits an understanding of them, lie chiefly in the size and shape of fruit, position of the stigmatic residue in fruit, and in the seeds. Fruits of the two species described here are not completely mature, and though the endocarp prob-







3. Burretiokentia hapala. a, fruit × 2½; b-d, endocarp in adaxial (b), lateral (c), and abaxial (d) views × 4. (a from Lavoix 25; b-d from Moore et al. 9324, BH).



4. Burretiokentia Vieillardii. a, portion of rachilla with triads in several stages \times 2; b, triad with flowers removed \times 2; c, staminate bud \times 4; d, staminate bud in vertical section \times 4; e, staminate sepals \times 4; f, staminate bud with sepals removed \times 4; g, staminate petal, interior view \times 4; h, stamens in three views \times 4; i, pistillade \times 4; j, pistillate bud \times 4; k, pistillate bud in vertical section \times 4; l, pistillate sepals \times 4; m, pistillate petal \times 4; n, pistil and staminodes \times 4; o, fruit \times 1; p, fruit in cross-section \times 1; q, endocarp \times 1; r, operculum of endocarp \times 2; s, seed in lateral, adaxial and abaxial views \times 2. (From material of Moore et al. 9334 preserved in liquid.)

ably has attained its mature shape and size, the seeds have not fully formed.

Clinostigma haerestigma is immediately separable from all other species in the genus by its fruit with stigmatic residue basal, scarcely exserted from the persistent perianth. Remaining species have the stigmatic residue lateral or excentrically apical and may be divided into two groups. The fruits are large (12–22 mm. high) and markedly longer than broad in C. carolinense, C. onchorrhynchum, C. ponapense, C. savaiiense, C. Savoryanum.

The fruits are smaller (11 mm. high or less) and nearly or quite as broad as high in a second group which includes C. exorrhiza (C. Seemannii, C. Thurstonii, Exorrhiza Wendlandiana), C.

Harlandii, C. Powellianum, C. samoënse, C. Smithii, C. Vaupelii, C. Warburgii, and C. Gronophyllum described here.

It is difficult to make adequate comparisons between C. Gronophyllum and species so poorly known as many of the above. The Fijian taxa and C. Harlandii, closest geographically, differ from C. Gronophyllum in smaller fruits 3.5-6 mm. in diameter with stigmatic residue excentrically apical. Among the Samoan taxa, C. samoënse and the doubtfully distinct C. Vaupelii have fruits with the stigmatic residue at or near the center of one side; C. Warburgii has smaller fruits 6 mm. in diameter and leaves with spreading pinnae. Clinostigma Powellianum has fruit very similar to that of C. Gronophyllum and borne on similarly thickened rachillae but neither flowers nor habit have been described. Species of Clinostigma have very limited distribution. It seems unlikely that C. Powellianum and C. Gronophyllum are identical despite lack of clear differences. I am taking the risk, therefore, of describing C. Gronophyllum essentially on the basis of its geography though the nature of the leaves, of the little-branched inflorescence, and of staminate sepals are all unusual for the genus as it is known today.

Clinostigma Gronophyllum H. E.

Moore, sp. nov.

Caulis solitarius ad 21 m. altus radicibus adventitiis ad 1.8 m. longis; folia arcuata pinnis subarcuatis utrinque 37–38 subtus dense brunneo-lepidotis; inflorescentiae rami 13–18 indivisi vel furcati; fructus subglobosus 9 mm. in diam. residuo stigmatum laterali.

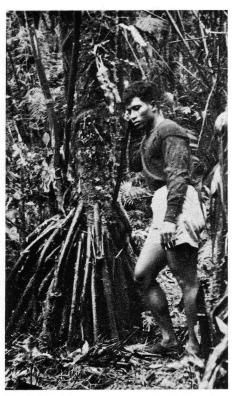
Trunk solitary, massive, stately, to 21 m. high, 22.5-27.5 cm. in diam., developing stout stilt roots 1.3-3.8 cm. in diam. up to 1.8 m. from the base, the upper stem waxy-glaucous, weathering smooth, lower stem developing elongate lenticel-like fissures. Leaf-sheath tubular. 0.9-1.5 m. long, green at maturity?, waxy violet or amethyst in young leaves enclosed in outer mature sheaths (i.e. before exposure), the younger inner sheath yellow; petiole 3 dm. long; rachis 2.1-2.7 m. long, slightly arched, with scattered, minute, pale-margined, browncentered scales on lower surface; pinnae 37-38 on each side, rather stiffly angled upward from the rachis, subarcuate with drooping tips, the central ones ca. 1.17 m. long, 4-4.5 cm. wide, gradually tapered to an acuminate apex, this often frayed and more or less bifid, glabrous with prominent midnerve and 2 secondary nerves on each side above, the midnerve, secondary nerves and numerous tertiary nerves below rather densely lepi-

dote with minute, pale-margined, browncentered scales and the midnerve with prominent, irregular, brown, membranous, medifixed scales to 7 mm. long, the pinnae near the apex similar but ca. 67 cm. long, 1.5 cm. wide. Inflorescence greenish, 6-7.5 dm. long, with 13-18 undivided branches (fide Corner) or the lowest branches at least furcate in one base collected (BH); bracts 2, green, the outer ca. 7.5 dm. long, soon deciduous, the inner lanceolate, acute, entire, 6-7.5 dm. long, persistent until after flowering, then drying brownish, falling as fruit sets; peduncle ca. 7.5 cm. long, 12 mm, wide at apex, glabrous; rachis not seen complete; branches glabrous, 30-36 cm. long, ca. 3 mm. in diam, near base at anthesis, becoming somewhat thickened in fruit, ridged and angled among the spirally arranged triads which extend nearly to the flexuous minutely spinose-tipped apex, then replaced by paired or solitary staminate flowers only, the triads subtended by prominent, small, acute, nerved bracts, bracteoles subtending the pistillate flower prominent, flat, brown when dry, unequal, one higher than the bract subtending the triad. Staminate flowers cream-white when fresh; sepals narrow, elongate, acute or truncate, 4.5-5.5 mm. long, 1.5-2.5 mm. wide at base when dry, to 6 mm. long when fresh; petals asymmetric, strongly nerved, acute, ca. 5.5 mm. long, 2.5 mm. wide when dry, to 8 mm. long, 5 mm. wide when fresh; stamens 6, exceeding the petals when fresh, smaller and included when dry, filaments broad, fleshy, very briefly inflexed at the apex, anthers deeply bifid basally; pistillode short, conic-ovoid and deeply trifid when fresh: pistillate flowers greenish-white, 3-4 mm. long in bud, the perianth in fruit composed of shining, indistinctly nerved sepals ca. 3 mm. high, and duller, rather strongly nerved petals ca. 4 mm. high; staminodes



5. Clinostigma Gronophyllum at 5000 feet elevation on Mt. Popomanasiu, October, 1965, photograph courtesy Professor E. J. H.

usually 6, dentiform. Fruit (immature) subglobose but produced on one side in a prominent upturned stigmatic residue above the middle, ca. 9 mm. high including perianth, 9 mm. wide including



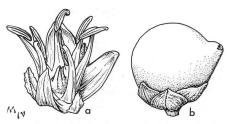
Stilt roots of Clinostigma Gronophyllum,
5500 feet elevation, Mt. Popomanasiu, October,
1965, photograph courtesy Professor E. J. H.
Corner.

stigmatic residue, 7.5 mm. thick, drying granulose; seed not fully formed.

Specimens examined. BRITISH SOL-OMON ISLANDS PROTECTORATE. GUADALCANAL: Popomanasiu, 4,700–5, 700 ft. alt., Sabatan Mt., 25 October 1965, E. J. H. Corner R. S. S. 108 (BH, holotype; K, isotype).

Professor Corner has most kindly made available photographs showing habit, as well as preserved portions of rachillae in bud, in staminate flower, and in young fruit to augment herbarium material in preparing a description.

Since Professor Corner was struck by the habital resemblance between this species (Fig. 5) and *Gronophyllum* chaunostachys as illustrated in *Principes*



Clinostigma Gronophyllum. a, staminate flower × 2½; b, fruit in lateral view × 2½.
(From preserved material of Corner R.S.S. 108, BH.)

10: 67, Fig. 5, 1967, and because the leaves are unusual among those species of *Clinostigma* which I have seen personally or in illustrations, I am using the generic name *Gronophyllum* in apposition as an epithet.

The species is noted as common by the collector and clearly seasonal—"all palms now flowering, the flowering more or less over, and setting fruit but no ripe fruit seen." Stilt roots (Fig. 6) are very similar to those of *C. exorrhiza*. Young leaves are noted as being pinnate rather than undivided as in *Gulubia Hombronii*.

Staminate flowers (Fig. 7) appear to be large for the genus. In life, the stamenfilaments are fleshy and stout, all inserted at the same level. The elongate staminate sepals are also noteworthy—in young bud their tips curve over the petals and at maturity, one or more retains the truncate apex. Apparently the inflorescences are not much ramified. Corner notes the branches as undivided but a single base with branches clipped away shows that at least some of the lowermost branches are forked.

Clinostigma haerestigma H. E. Moore, sp. nov.

Caulis solitarius ca. 9 m. altus; foliorum pinnae plus minusve pendulae utrinque ca. 45 subtus dense brunneolepidotae; flos masculus (2–) 3.5–4 mm. altus; fructus ca. 9 mm. altus resi-

duo stigmatum basali vix ex perianthio exserto.

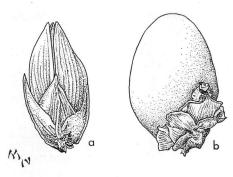
Solitary, the trunk ca. 9 m. high, 2-2.25 dm. in diam., with a green crownshaft 1.5-1.8 m. high. Leaves 12-14; petiole 7.5-9 dm. long, ca. 3 cm. wide at apex, glabrous and rounded below; rachis 2.7-3.6 m. long, glabrous at maturity below but with occasional shining, red-brown, membranous scales with fimbriate margins on or near the margin; pinnae ca. 45 on each side of the rachis, more or less pendulous, 7.5-9 dm. long, 6.2-7.5 cm, wide at center of leaf. smaller near base and toward apex of the rachis, the upper surface glabrous, lower surface densely beset with minute, shining, pale-margined, brown-centered, membranous, peltate scales along the prominent midnerve and on the single secondary and numerous tertiary nerves on each side, the midnerve with large, red-brown, irregular, medifixed scales to ca. 9 mm. long near the base. Inflorescence 0.9-1.2 m. long with spreading branches: lower bract 0.9-1.05 m. long, cordate-auriculate at the base, glabrous but with a slight glaucescence when dry, upper bract not collected; peduncle short, ca. 10 cm. long, glabrous, somewhat glaucous; rachis glabrous and somewhat glaucous, elongate, with probably more than 20 branches, the lower branches ca. 8 dm. long, again branched near the base into elongate rachillae bearing flowers in triads in the lower two-thirds, with paired staminate flowers above or the staminate flowers solitary near the very slender, minutely spine-tipped apex. Staminate flowers (2-) 3.5-4 mm. long, glabrous; sepals acute, 2-2.5 mm. long, at least the outermost acutely keeled, the margins membranous to hyaline; petals asymmetric, sometimes strongly so, to ca. 3.5 mm. long, prominently nerved when dry; stamens 6, more or less in 2 series, the 3 outer opposite the sepals and shorter than the 3 inner, the filaments subulate, elongate, inflexed at the apex in bud, the anthers narrowly oblong in outline, deeply bifid at base and apex; pistillode small, ovoid, briefly trifid; pistillate flowers seen only in bud, the perianth in fruit with strongly nerved sepals 2 mm. long and petals 3 mm. long, the bracteoles subtending the pistillate flower and fruit subequal, scarcely or not exceeding the bract and ridges subtending the triads. Fruit (immature) ca. 9 mm. high with stigmatic residue at the base and scarcely exserted from the perianth; exocarp drying granulose.

Specimens examined. BRITISH SOL-OMON ISLANDS PROTECTORATE. San Jorge: Astrolabe Harbour, frequent in the *Casuarina* forest on ultrabasic soil, 23 Sept. 1965, *E. J. H. Corner R. S. S. 2700* (K, holotype; BH, isotype).

The type collection of this species lacks leaf-sheath and has only an incomplete inflorescence. Both flowers and fruit are present and though the latter is immature, it is probably near its mature size. The staminate flowers with distinctive pistillode, the structure of the inflorescence, and the pinnae clearly identify the genus, and so distinctive is even the young fruit that I do not hesitate to describe the species.

The epithet haerestigma, from the Latin haereo (to stick or cleave to) and stigma, is chosen because the stigmatic residue remains close to the perianth that once surrounded the pistil, growth having been almost completely unilateral (Fig. 8). It is this feature that distinguishes Clinostigma haerestigma from other species of the genus. The stigmatic residue in other species is near or above the middle, sometimes excentrically apical, with the exception of C. carolinense which is distinguished by its large fruit (15 mm. long) with stigmatic residue 5–7 mm. above the base.

Stilt roots are a prominent feature of some Clinostigma species—C. exorrhiza



8. Clinostigma haerestigma. a, staminate flower in bud × 7½; b, fruit in three-quarter view × 3½. (From dried material of Corner R.S.S. 2700, BH.)

of Fiji, for example—but were not noted for *C. haerestigma* by the collector. Other species, moreover, are perhaps more frequent at higher elevations, often on mountain ridges. Thus, it is somewhat exceptional to find one apparently near sea-level and on ultrabasic soil.

DRYMOPHLOEUS

The material described below as Drymophloeus lepidotus agrees with the genus Rehderophoenix Burret, previously thought endemic to the Solomon Islands, in all details except the pistillode of the staminate flower which is ovoid-attenuate as in many other ptychospermate palms rather than short and trifid as in species earlier assigned to Rehderophoenix. The pistillode may vary substantially in flowers of a single inflorescence (in Brassiophoenix, for example), and by itself scarcely seems a stable basis for distinguishing a genus. Rehderophoenix otherwise agrees well with Drymophloeus with which it is here united. Two species of Coleospadix earlier noted as belonging here (Gentes Herbarum 8: 299, 1953) are also transferred. Drymophloeus as so modified extends from Halmahera, Ceram, Amboina, to New Guinea, the Solomons, and possibly to Fiji and Samoa.

Drymophloeus lepidotus H. E. Moore, sp. nov.

Caulis solitarius ad 9 m. altus; foliorum pinnae anguste obovatae ad apicem oblique truncatae subtus dense lepidotae; floris masculi stamina 37–45 et pistillodium ovoideo-attenuatum; fructus ruber anguste ovoideus 14 mm.

longus 7 mm. in diam.

Trunk solitary, to ca. 9 m. high, 7.5-10 cm. in diam. Leaf-sheaths densely floccose-lepidote where protected, the scales with red-brown centers and white cottony margins, becoming red-brownpuncticulate with persistent scale attachments where exposed; petiole with a rather dense cover of brown-black-centered, pale or dark, lacerate-margined, membranous scales above and below where protected, or merely dark-puncticulate where exposed, rounded abaxially, slightly convex adaxially; rachis with small, dark, membranous, basifixed. entire or lacerate scales, especially above, or only dark-puncticulate when exposed or aged; pinnae narrowly obovate in general outline, apparently regularly arranged along the rachis, very densely covered below on all the nerves with minute, shining, narrowly pale-margined, brown scales and with elongate, dull to shining, brown, twisted, basifixed or medifixed, membranous scales to 10 mm. long on the principal nerves toward the base, glabrous above except for a few large scales on the principal nerves near the base and sparser, minute, dark brown scales on the midnerve. intermediate principal nerve, and margins especially toward the base, median pinnae ca. 53 cm. long on the upper margin, probably ca. 9 cm. wide at the middle (none complete), cuneately tapered to the base, narrowed toward the obliquely lobed and minutely toothed apex, subapical pinnae ca. 25 cm. long, 3.3 cm. wide with nearly truncate apices, apical pinnae ca. 15 cm. long, 3 cm. wide,

truncate and toothed at the apex. Inflorescence with 2 peduncular bracts, the lower (prophyll) ancipitous, ca. 29 cm. long, with small, pale-margined, brown. membranous scales outside, glabrous within, the upper inserted ca. 2 cm. above the lower; peduncle slender, ca. 1.8 cm. wide at insertion of lower bract, ca. 11.5 cm. long, glabrous except below the bracts where minutely brown-scaly; rachis glabrous, bearing several divaricate branches to 45 cm. long (an entire inflorescence not seen), these again once- to twice-branched into angled and often flattened rachillae 14-20 cm. long. 2-3 mm. in diam. Flowers borne in loosely spiralled to subdistichous triads in the lower one-half to two-thirds of the rachillae but toward the apex paired or often solitary staminate flowers are borne in subdistichous to distichous fashion: staminate flowers creamcolored, glabrous, ca. 5 mm, long; sepals gibbous at the base, 2.2–2.4 mm. high, 3.0-3.4 mm. wide; petals ca. 4.2 mm. high, 3 mm. wide; stamens ca. 37-45, the filaments short, anthers linear, 2.5-3 mm. long, deeply bifid at base and apex; pistillode ovoid-attenuate, about two-thirds as long as the stamens: pistillate flowers seen only in very young bud; fruiting perianth of sepals ca. 3 mm. high, 3.5-3.8 mm. wide; petals ca. 9 mm. high, 11 mm. wide; staminodes several, distinct or irregularly connate. Fruit red at maturity, yellow when incompletely mature, 2.4-2.5 cm. long. 9-10 mm. in diam., narrowly ovoid, broadest near the base and gradually tapered to a rounded-conic stigmatic residue; exocarp "pebbled" when dry from internal attachment of very short, pale fibers; seed narrowly ovoid, ca. 14 mm. long, 7 mm. in diam., the hilum round, basal, raphe-branches ascending and anastamosing from the base; endosperm homogeneous; embryo basal.

Specimens examined, BRITISH SOL-OMON ISLANDS PROTECTORATE. SAN CRISTOBAL: ultrabasic hill east of Wainoni, 1400–1600 ft. alt., 10 Aug. 1965, *G. Dennis R. S. S.* 53 (BH, holotype).

Material of the holotype is incomplete

but clearly represents a taxon distinct from the other two species of *Drymophloeus* known from the Solomon Islands. The three species may be distinguished as follows.

- 1. Pinnae not lepidote below except for membranous scales on the midnerve; staminate flowers large, 10–12 mm. long with 190–327 stamens and ovoid or subglobose, trifid pistillode; fruit broadest at or above the middle.
 - 2. Fruit broadly ellipsoid, 1.9–2.0 cm. long; flowers subdistichously arranged along slender rachillae 3–4 mm. in diam.; staminate flowers with ca. 190 stamens. Santa Ysabel

Drymophloeus litigiosus (Beccari) H. E. Moore, tr. nov.

Ptychosperma litigiosum Beccari, Malesia, 1:50. 1877 ('litigiosa').

Coleospadix litigiosa (Beccari) Beccari, Ann. Jard. Bot. Buitenzorg 2:90. 1885.

Drymophloeus oninensis (Beccari) H. E. Moore, tr. nov.

Ptychosperma litigiosum var. oninense Beccari, Malesia 1:52. 1877 ('oninensis'). Coleospadix oninensis (Beccari) Beccari, Ann. Jard. Bot. Buitenzorg 2: 90. 1885.

Drymophloeus pachycladus (Burret) H. E. Moore, tr. nov.

Rehderophoenix pachyclada Burret, Notizbl. Bot. Gart. Berlin 13:87. 1936.

Drymophloeus subdistichus (H. E. Moore) H. E. Moore, tr. nov.

Rehderophoenix subdisticha H. E. Moore, Principes 10:93. 1966.

PALM LITERATURE

(Continued from page 66)

revision in 1930 and who described many species afterward. This conservatism is all to the good when based on careful observation and has resulted in the recognition of only 75 species of *Geonoma*.

Unfortunately, conservatism at the generic level in *Calyptrogyne* has brought about an odd situation, one in which the description of the staminodial tube as digitately lobed applies only to

the subgenus *Pholidostachys* but not to subgenus *Calyptrogyne* nor to subgenus *Calyptronoma*. The reviewer is not convinced that *Calyptrogyne*, *Calyptronoma*, and *Pholidostachys* are not acceptable though related genera. Species descriptions too often fail to agree in detail with specimens which were cited as having been examined, suggesting lack of care in preparation. A more detailed review has recently appeared in *Taxon* 18: 230–232, 1969.

H. E. Moore, Jr.