

which respect the fruits agree with fruits of *C. dulcis* at Kew. I have never seen similar fibres in the fruits of any true *Geonoma*."

In Burret's treatment this species becomes *Calyptrogyne robusta*.

† **Calyptronoma Kalbreyeri**, trans. nov.

Calyptrogyne Kalbreyeri, Burret, in Engl. Bot. Jahrb. lxxiii, 137 (1930).
Colombia.

† **Calyptronoma synanthera**, trans. nov.

Geonoma synanthera, Martius, Hist. Nat. Palm. ii, 13, t. 13 (1823).
Calyptrogyne synanthera, Burret, l. c. 137.

Peru.

† **Calyptronoma Weberbaueri**, trans. nov.

Calyptrogyne Weberbaueri, Burret, l. c. 139.
Peru.

With these removals, *Calyptrogyne* remains with six species ranging from southern Mexico to Costa Rica. *Calyptronoma* has a rather unusual distribution in the Greater Antilles and on the continent in Colombia, Amazon Valley of Brazil, and Peru; we need further studies of the South American species. We have a comparable case of disconnected distribution in *Aiphanes*, discussed in the second part of this Fascicle (Article 8).

Only twice have I seen a manac palm in cultivation. One was in the Promenade Garden, Georgetown, British Guiana, where a tree in fruiting condition was growing in 1921; it was apparently the Jamaican species. The other is in one of the botanic gardens in Havana.

Key to the Antillean manacs or Calyptonomas.

- A. The big-fruited manac: dry mature entire fruit 12-17 mm. long (although variable), laterally somewhat compressed, the largest transverse diameter about 10 mm., prominently wrinkled; seed 9-11 mm. long and 6 mm. or more thick, free from its envelope or mesocarp: rachillæ very densely flowered, the sulci standing 4 or 5 mm. asunder on any continuous face, the lip prominently divaricate and about as long as the cavity: peduncle (of spadix) with or without collar but bearing scale-like bracts toward apex and strongly compressed sidewise when dry; primary spathe relatively small and chartaceous, about 40 cm. or less long and 4 or 6 cm. broad when dried: pinnæ dull green, the leaf-rachis distinctly ridged and grooved throughout its length on the under side (or toward the base strongly convex).—Jamaica. 1. *C. Swartzii*
- AA. The middle-fruited manac: dry mature fruit 8-10 mm. long and 6-7 mm. thick, not evidently laterally compressed, wrinkled; seed about 7 mm. long and 5 mm. or less thick, attached to its envelope: rachillæ relatively open-flowered, the sulci about twice as far apart on any face as in A, lip not as long as cavity and the axis therefore smoother-looking: peduncle lacking a collar but perhaps bearing small separated bracts; primary spathe much as in A: pinnæ mostly glossy on upper face when mature, the rachis flat or essentially so on the upper side (or only mildly convex toward base).—Cuba. 2. *C. dulcis*

Banks of streams, wet woods, about marshes, often in moist ravines in mountains, well distributed in Cuba, as in Pinar del Rio, Habana, Santa Clara, Oriente; Isle of Pines.

Type locality, Province of Habana, western Cuba, *Wright no.* 1865.

It is a characteristic tree of arroyos and mountain streams in lower and middle altitudes. In Cuba it has been said, "Donde hay manaca hay agua y buena," which being translated means that where one finds manaca one also finds water that is good. The word *dulcis* (sweet) refers to the edible flowers, used in comfits.

† 3. ***Calyptronoma quisqueyana***, spec nov. HISPANIOLAN OR QUISQUEYAN MANAC. Figs. 86, 89, 92, 94.

Magna arbor valida ad 10 m. alta; truncus 3-4 dm. in diam. crasse annulatus: frondes pinnatæ, 3 m. vel longæ; pinnæ ad 1 m. longæ 7 vel 8 mm. latæ, valde costatæ: spadix matura ad 1 m. longa, pedunculus annulatus; spatha prima 8-12 cm. lata, anceps; rachillæ aperte floreatæ, costatæ in longitudine cum siccæ: fructus 5-6 mm. longus, partes florales caducæ, mesocarpium paucis validis lineis parallelis in uno latere; semen pericarpio aptum.

Stout stocky tree to 10 m. tall, trunk closely ringed, 3-4 dm. in diameter above base, supporting a broad heavy head of leaves 3 m. or more long: pinnæ to 7 or 8 mm. broad, dull above and lighter green underneath, to 1 m. long, ribbed and grooved, glabrous or midrib underneath somewhat scaly and not much more prominent than the several lateral ribs, long-attenuate, the rachis strongly angled in section and ridged in center above: spadix large and heavy, at first lying in the trough on the upper side of the great petiole, this trough 6 dm. to 1 m. long and sharp-edged and 2 dm. across at base, spadices soon declined but held on trunk by expanded bases after the leaves fall; peduncle 6 dm. long, stout and mostly nearly terete, bracts few or none but collar evident; rachillæ rather loosely flowered, drying into angled strands; permanent or primary spathe woody or very stiff, to 8-10 or 12 cm. broad and 2-edged: fruit small, about 5 or 6 mm. long when ripe and mature, parallel-ribbed nearly to top on one side, the dry floral envelopes usually not adherent to it when it falls; seed adherent in its case.

Hispaniola (*Quisqueya* of the aborigines), along streams and in wet places in mountains in both Haiti and Santo Domingo; apparently local.

Type locality, Morne Saut d'Eau, Chaine des Matheux, Ouest, Haiti, *Bailey 229, 229a*, beyond and above Ville Bonheur in threads of a mountain stream.

It has been supposed this is the palm intended in *Geonoma? Plumeriana*, Martius (*Palmetum Orbignianum*, 34, 1847); but neither the diagnosis in Martius, taken from Plumier, nor the published picture in Plumier's *Nova Plantarum Americanarum Genera*, 1703, represents the present