

fruit dark purple, divaricate or lightly ascending, 1.5 cm. plus long, abruptly narrowed to a short beak, 10–12 mm. thick when dry, retaining the calyx-cup; seed filling the pericarp, albumen much ruminated.

Mexico, state of Oaxaca, about 1200 m. altitude.

Reinhardtia gracilior, Burret, in Notizbl. Bot. Gart. Berlin, xi, 555 (1932).

Cespitose, about 1 m. tall; caudex arundinaceous, 6 mm. thick, rings 3 cm. asunder: leaves small, thin, somewhat lighter colored underneath, about 20 cm. long, deeply furcate with 2 segments on either side of which the terminal pair is much the larger, primary nerves 10, lower segments about 11 cm. long and 18 mm. broad, strongly dentate, primary nerves 3: spadix in axil of leaves, about 1.5 dm. long, the branching or floral part about 1 dm. long, rachillæ 4, simple, bearing flowers spirally, staminate and pistillate together, upper ones staminate: fruit 15 mm. long, black, elliptic-oblong, not rostrate but remains of stigma apparent, albumen not ruminated.

British Honduras, Stann Creek Valley at 100 m. altitude.

† **Reinhardtia spinigera**, spec. nov. Fig. 81.

Palma erecta humilisque a *R. elegante* differens folii costa media sparsis deflexis spinis albida basi 3–5 cm. longis, foliolis latilanceolatis, tenuibus, 3–4 cm. latis ad vel super medium, 2–3.5 dm. longis, valde multinervatis, ad basin angustatis, apice angustissimo vel etiam filifero, spadiceis rachillis paucis et solis 1.5–1.8 dm. longis, petalis minus conspicuis, fructibus parvo majoribus crassioribusque et abruptius acuminatis.

Erect, 2 to about 3 m. tall, apparently with habit of *R. elegans* from which it differs in bearing white-based deflexed scattered spines 3–5 cm. long on the midrib of the leaf, and in the following characters: leaves thin in texture, bright green to luminous; leaflets broad-lanceolate, 3–4 cm. broad at or above the middle, 2–3.5 dm. long, strongly many-nerved, narrowed to base, apex long-tapering and very narrow or the point filiferous, rachillæ of spadix few and short and only 1.5–1.8 dm. long, petals much less conspicuous on the rachis, fruits a little larger and thicker and more abruptly pointed.

Mexico, northeastern Oaxaca, near Latani, District of Choapam, in dense forest at 1600 m. altitude, *R. E. Schultes* 866.

10. OTHER PALM STUDIES

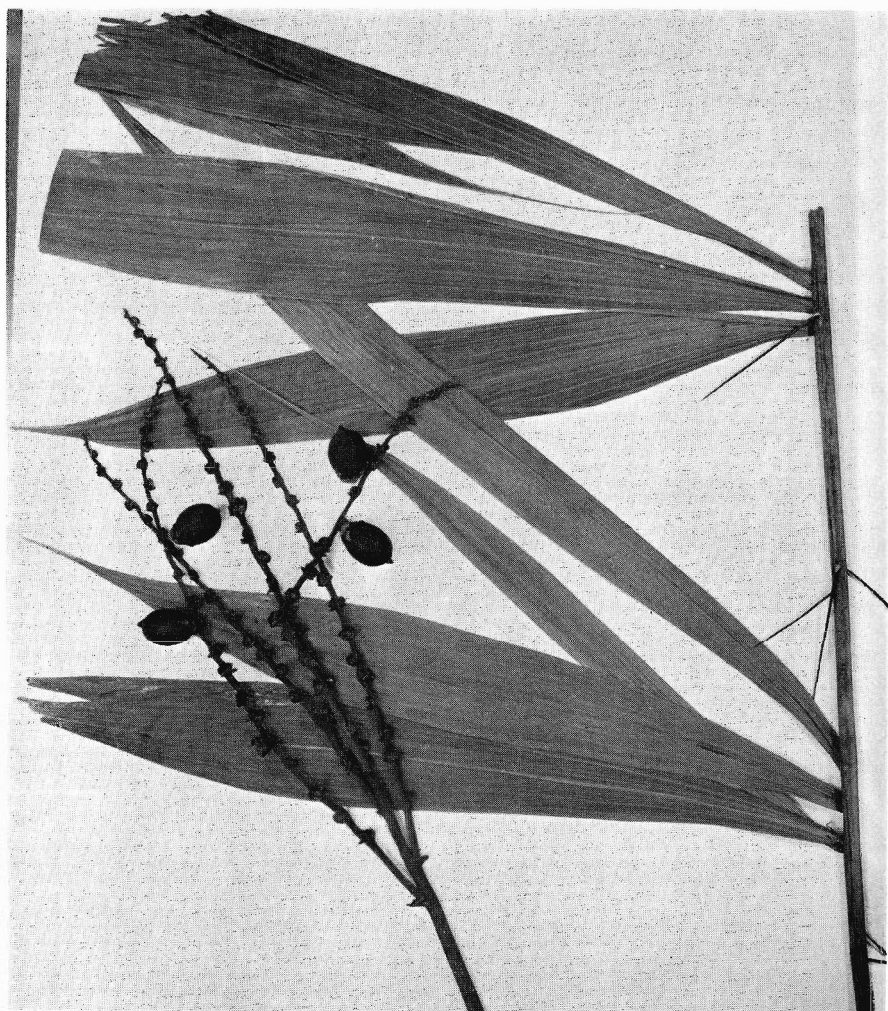
by H. E. Moore, Jr.

† **Attalea Allenii**, H. E. Moore, spec. nov. Fig. 82.

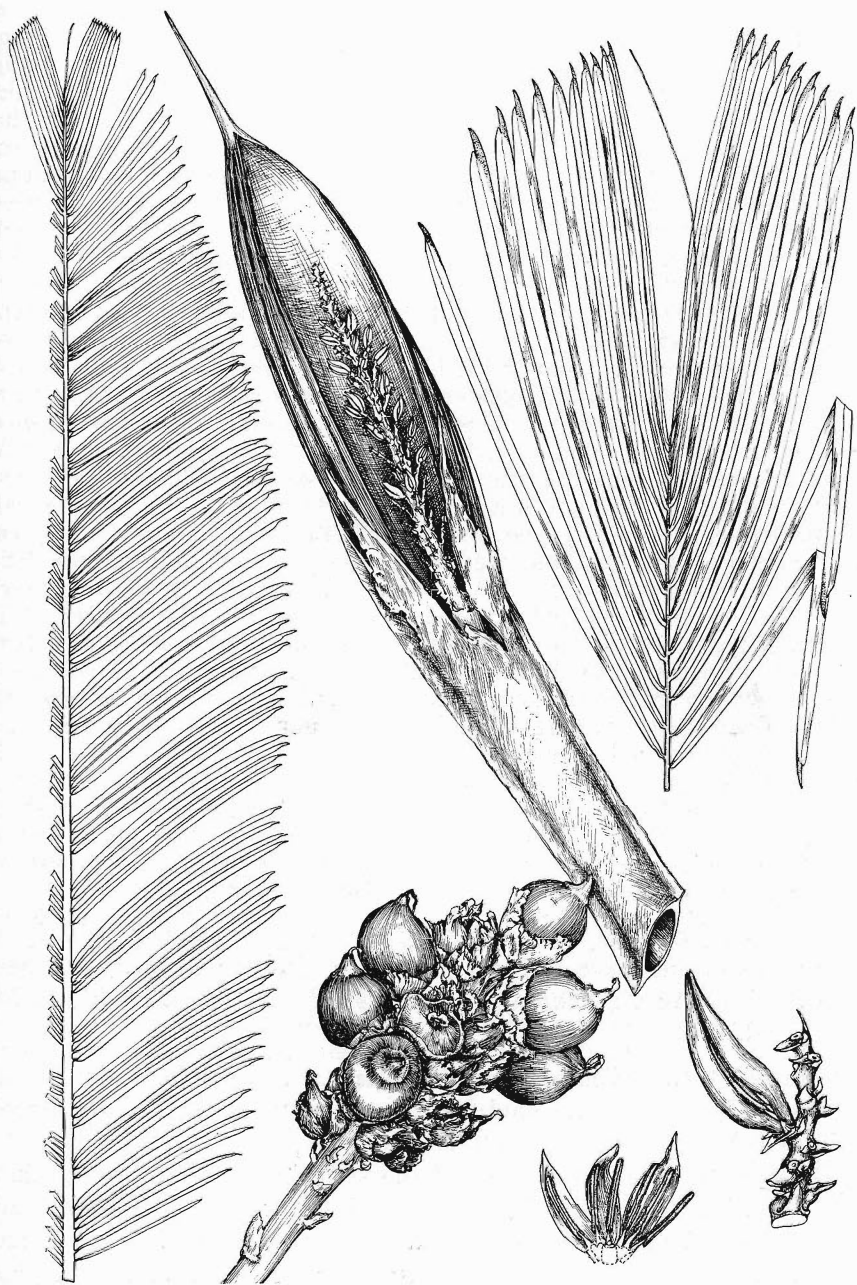
Planta acaulis: folia interrupte pinnata, ca. 5 m. longa; pinnæ lineares apice bidentatæ, glabræ, griseo-virides, utrinsecus 85–87, terminales 9–10 plus minusve regulariter dispositæ apicibus coherentes, reliquæ liberæ in

gregibus alternis vel plerumque suboppositis dispositæ, 28-70 cm. longæ, 3-40 mm. latæ, nervis primariis singulis: spadix staminatus simpliciter ca. 50-ramosus, pedunculo 8 cm. longo, cymbis duabus, cymba exterior 30 cm. longa, 4 cm. lata, dense ferrugineo-lepidota, cymba interior 35 cm. longa, rostrata rostro 7 cm. longo, rachi 16 cm. longa, rachillis 1-1.5 cm. longis; flores 6-8 ad rachillam biseriati, calyce minuto, petalis lanceolato-apiculatis, 11-13 mm. longis, 2-3 mm. latis, staminibus 6: spadix pistillatus simplex, pedunculo 34 cm. longo, rachi 10 cm. longa fructibus ca. 25: fructus (immaturus) sessilis, ovoideus, rostratus, 5 cm. longus, 3 cm. latus, dense ferrugineo-lepidotus.

Acaulescent: leaves 12-15, about 5 m. long; petiole 80 cm. long, convex,



81. *REINHARDTIA SPINIGERA*. Small palm of southern Mexico, singular in its genus by bearing spines. Nearly one-half full size.



82. *ATTALEA ALLENII*. Diagrammatic leaf $\times \frac{1}{21}$; terminus of leaf $\times \frac{1}{6}$; staminate and pistillate spadices $\times \frac{1}{8}$; staminate rachillæ $\times 2$; staminate flower $\times 1\frac{1}{2}$.

dull, fulvous and densely ferrugineous-lepidote dorsally, concave, lustrous, fulvous and glabrous ventrally, 2.5 cm. diameter at base, 2 cm. diameter at apex; sheath not seen; rachis 3.3 m. long, terminating in a slender round flexuous awn about 35 cm. long, dorsally convex, dull and densely ferrugineous-lepidote, ventrally bicanaliculate and medially ridged, the ridge lustrous, fulvous, glabrous, disappearing apically, the canaliculæ dull gray-green; pinnæ interruptedly pinnate, linear, glabrous, gray-green above, paler below, the margins narrowly ferrugineous-lepidote, the upper broadly so on the under surface toward the bidentate unilaterally caudate apex, 85-87 on each side of the rachis, the apical 9-10 more or less regularly spaced, separated basally, coherent at the apex forming two broad lobes about 10 cm. wide at the terminus of the rachis, the lower and median in alternate to mostly opposite or subopposite groups of 2-5 at intervals of 5-10 cm., 28-70 cm. long, 3-40 mm. wide, with 1 primary nerve, 4-5 secondary nerves and innumerable transverse nervelets: spathes produced at ground level, the fruiting clusters often so low in the leaf-axil as to be half buried in the ground (fide Allen); staminate spadix about 50-branched; peduncle 8 cm. long; cymbæ 2, the outer 30 cm. long, 4 cm. wide, two-edged fulvous and densely ferrugineous-lepidote outside, lustrous, glabrous and ferrugineous within, the apex short and rounded, the inner canaliculate-striate, blackish, 35 cm. long with a flattish apical rostrum 7 cm. long; rachis 16 cm. long, included in the cymba, rachillæ 1-1.5 cm. long, bearing 6-8 flowers in two ranks subtended by ovate to lanceolate bracts 1.5-2 mm. long; flowers pale in drying, calyx minute, the sepals deltoid, 1 mm. long, petals valvate, lanceolate-apiculate, flat, 11-13 mm. long, 2-3 mm. wide, very shortly connate at the base, stamens 6, the filaments 1 mm. long, the anthers straight, 6 mm. long; pistillate spadix unbranched; peduncle about 34 cm. long, 1 cm. diameter; cymbæ not seen; rachis 10 cm. long; old flowers and young fruit about 25, crowded and sessile on the rachis, subtended by broad-based acute bracts 4-15 mm. long; immature fruit ovoid, 2-celled, 5 cm. long, 3 cm. diameter, rostrate, with a rostrum 1 cm. long, subtended by elongate erose cupular perianth; exocarp fibrous, densely ferrugineous-lepidote, appearing smooth, 1.5 mm. thick; mesocarp thin, fibrous; endocarp osseous, 1 mm. thick; seeds unknown.

Panama, Province of Colón, very common in heavy virgin forest, averaging in some places 10-15 to the acre, Rio Viejo, vicinity of Puerto Pilon, altitude 10 m., February 2, 1947, *Paul H. Allen 4103* (Herb. Mo. Bot. Gard.).

Named for the collector whose critical notes and ample specimens have contributed much to the study of American palms and who correctly indicated this species as new to Panama.

The extremely short rachillæ of the staminate spadix, the staminate flowers with 6 stamens and the apparently unbranched pistillate spadix set *Attalea Allenii* apart from *A. acaulis*, Burret, and *A. exigua*, Drude, the two other acaulescent species of subgenus *Euattalea* having the pinnæ grouped along the rachis.

Pittier 4237 in the United States National Herbarium is probably re-

ferable here. The collection consists only of a complete leaf in thirteen sections taken in forests at Loma de la Gloria, near Fató (Nombre de Dios), altitude 10-104 m., Province of Colón, Panama, July and August 1911.

† *Hyospathe concinna*, H. E. Moore, spec. nov. Fig. 83.

Arbor gracilis ad 3 m. alta, caules 1 cm. crassi, nodis obliquis: folia simplicia, in ambitu obovata, bifurcata, ca. 50 cm. longa, 21.5 cm. lata rachis apice, supra glabra, subtus nervis lepidota, rachi 30 cm. longa, nervis primariis utrinsecus 17-18: spadix simpliciter 8-ramosus, pedunculo 4.7 cm. longo, rachi 5.5 cm. longa, rachillis 15-18 cm. longis; flores rosei, flores staminati elongati, pedicellati, calyce minuto trilobato, petalis linearis 3-4 mm. longis, staminibus 6 conspicue biseriatis, flores pistillati sessiles ovoidei, calyce trilobato, petalis ovatis 2-2.6 mm. altis, pistillo obconico 2 mm. longo, stigmatibus minutis sessilibus, subterminalibus: fructus ignotus.

Caulescent, slender, about 3 m. high (fide Allen), the trunk 1 cm. thick, glabrous, the nodes oblique, the internodes 2-2.5 cm. long: leaves simple, bifurcate; sheath very sparsely lepidote, closely striate, 15 cm. long; petiole 12 cm. long, convex below, flattish above, sparsely lepidote, striate; rachis 30 cm. long, not extended in a free tip; blade obovate in outline, bifurcate more than one-third its length, 21.5 cm. wide at apex of rachis, 50 cm. long on outer margin, 21 cm. long on inner margin, the free lobes lanceolate, somewhat falcate, glabrous above, sparsely brown-lepidote on the nerves below; primary nerves 17-18 on each side, secondary and tertiary nerves thin and inconspicuous: spadix 8-branched; spathe rings 3, the one spathe seen closely striate, glabrous, 23 cm. long, 1 cm. wide; peduncle 4.7 cm. long, expanded at the base and encircling the trunk; rachis 5.5 cm. long; rachillæ simple, 15-18 cm. long, 1 mm. thick, divaricate to ascending and somewhat flexuous, granular-puberulent: flowers pink (fide Allen), in groups of 3 along the rachis, a single pistillate between 2 staminate; staminate flowers in bud elongate on pedicels 1.4-2 mm. long, calyx minute, granular, 0.8 mm. high, 3-lobed, the lobes acute, petals valvate, nearly linear, 3-4 mm. long, glabrous, stamens 6, 2-ranked, those opposite the petals longer and partially adnate to the cylindric pistillodium; pistillate flowers in bud ovoid, sessile, calyx cupular, 3-lobed, sparsely granular-puberulent, about 1.6 mm. high, petals ovate, imbricate, 2-2.6 mm. long, pistil 2 mm. long, the stigmas minute, sessile, terminal or subapical: fruit not known.

Panama, Province of Coclé, vicinity of El Valle de Anton, altitude about 600 m., December 8, 1938, *Paul H. Allen 1202* (Herb. Mo. Bot. Gard.).

Hyospathe concinna is closely related to *H. Schultzæ*, Burret, of Ecuador and *H. simplex*, Burret, of Colombia. From the former it is distinct in the larger leaf, larger spadix with long rachillæ and the longer pedicellate