

in six perpendicular lines of phyllotaxy. It is seen that the petiole breaks off about midway, and the expanded base remains attached to the bole until destroyed by decay and storm. This tree was 7-8 m. tall; bole 4 dm. diameter midway and 5 dm. at base. Spines on the petioles of *A. mexicana* are the longest I know in the genus although not very stiff and sharp; they sometimes exceed 4 inches (10 cm.) in length. I have not seen trees with prominently tumid bole.

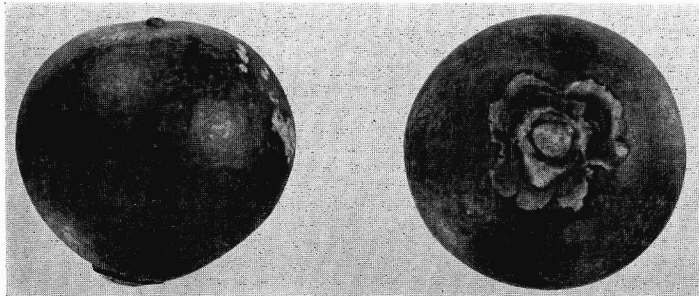
† 4. *Acrocomia panamensis*, spec. nov. Figs. 265, 272.

*A. vinifera?*, Bailey, Gent. Herb. iii, 62, figs. 41, 42, 43, 44 (1933).

Species Rei Publicæ Panamæ: § Tectocomia: arbor ad 7 vel interdum 8 m. alta, bases petioli persistentes, truncus pæne vel valde inermis, non ventricosus: petiolus 4 cm. vel plus latus, tomentosus pilosusque, multis spinis, 2-10 cm. longis; pinnæ circa 2 cm. latæ, nitidæ glabræque supra, infra glaucæ hirsutæque, costa et nervi prominentes: spatha 1 m. longa, acuminata, tomentosa spiniferaque; spinæ 3-4 cm. longæ; pedunculus spiniferus: fructus globosus, plerumque 3.5 cm. diam., caducis, brevibus capillis; calyx multum explanatus, applanatus.

Tree 4-8 m. tall, trunk heavily covered at first and even up to flowering size with persistent spiniferous bases of dying leaves, later marked by rugged irregular notches or steps as the old boots rot away but many of the spent leaves from the crown still hanging prone: living erect or spreading leaves 10-15, pinnæ well spaced; petiole plano-convex, 4 cm. or more across, it and the rachis bearing many black sharp spines 2-10 cm. long, surface covered with floccular tomentum and stiff or spinescent short hairs; pinnæ on main part of vigorous leaves 2 cm. or somewhat more broad at middle, glossy and glabrous above, under surface gray and puberulent with points or flecks and thinly hirsute with short loosely distributed hairs, midrib very prominent as also about three lesser ribs on either side and other thinner veins between: main spathe about 1 m. long, gradually long-pointed, soon pendent, closely roughly tomentose, provided with many short black spines especially along the median section that range from 5 mm. to 3 cm. long; peduncle heavily set with brown-black pubescent-margined spines to 3 or 4 cm. long, surface furfuraceous but weathering smooth, rachis becoming glabrous, rachillæ many and strongly divaricate:

fruit essentially globular but usually a little shorter endwise, 3.5 to nearly 4 cm. cross-wise diameter, while fresh covered with lanate floccules and short crooked hairs that are



274. FRUITS NATURAL SIZE of *Acrocomia belizensis*.

soon caducous and leave a smooth attractive creamy surface with greenish tinge, old fruits taken from the ground having lost this character and become discolored; fruiting calyx much enlarged and applanate, the 3 conspicuous inner elements extending more than 1 cm. from point of attachment.

Panama and Canal Zone on the Pacific side, still growing natively in the region about Balboa and Panama City, often remaining in private premises after the land has been otherwise cleared sometimes as very small but productive trees on poor land; probably the grass fires destroy the seedlings. Paul H. Allen writes me that he has "seen groves of them on the way to the village of Ocu, and many scattered specimens in the hills about Santiago, in Veraguas Province." Type collection *Bailey 552* near Panama City; supplemented by *Allen 2213*, *H. H. Bartlett & Tobias Lasser 16977*. Fig. 272 is from photograph by H. H. Bartlett.

† 5. *Acrocomia belizensis*, spec. nov. Figs. 273, 274.

Species Honduræ Britannicæ: § Tectocomia: ab *A. mexicana* differt partibus gracilibus, spinis minoribus; petiolis angustioribus multi-costatis; pinnis multis et fere 1 cm. vel minus latis, satis viridibus, subter nec glaucis nec pubescentibus sed cum sparsis capillis appressis: spatha dense lanata et multis nigris spinis 2-6 cm. longis tecta; axibus spadiceis maturis lævibus nitidisque: fructu parvo, fere 3 cm. diam., glabro.

Differs from *A. mexicana* in parts more slender, spines much smaller, pinnæ much narrower and not gray or pubescent underneath but only with few very small appressed hairs, petiole and rachis bearing many very small prickles with hairs on the surface, spadix very slender at anthesis, main axis and rachillæ smooth and glossy at maturity, fruit smaller, shining, only slightly flattened endwise. Trunk and stature not recorded: pinnæ very numerous on long slender shallowly furrowed but not flattened rachis mostly less than 1 cm. broad but sometimes to 2 cm., gray and dull, midrib and many side-veins prominent, glabrous except for a few points and appressed hairs underneath; main spines on rachis to 9 cm. long, and spinescent scattered hairs conspicuous, base of petiole 3 cm. or less broad and inclosed in cloth-like hairy sheath 5 cm. and more across: main spathe to 20 cm. broad, thick and heavy, densely invested with fibrous wool and covered with numberless flat very sharp black spines 2-6 cm. long, axis of spadix glabrous, not spiny, nitid; flowers small: fruit 3 cm. or a little more cross diameter, briefly flattened at poles, more or less glossy but surface rough.

British Honduras, formerly known as Balize or Belize, and in this geographical sense the specific name is applied to the present gru-gru. The tree produces abundant fruit when the bole is only ten or twelve feet or less high and is still densely covered with old leaf bases. El Cayo district, Pine Ridge, Duck Run, *Bartlett 11561* (type); Corozal district, *Gentle 631*, called Suba; Maskells, *Mr. and Mrs. Arthur Langlois*.

6. *Acrocomia glaucophylla*, Drude, in Martius, Fl. Bras. iii, II, 392, t. 84 (1882).

Trunk invested with persistent bases of petioles, but its dimensions and