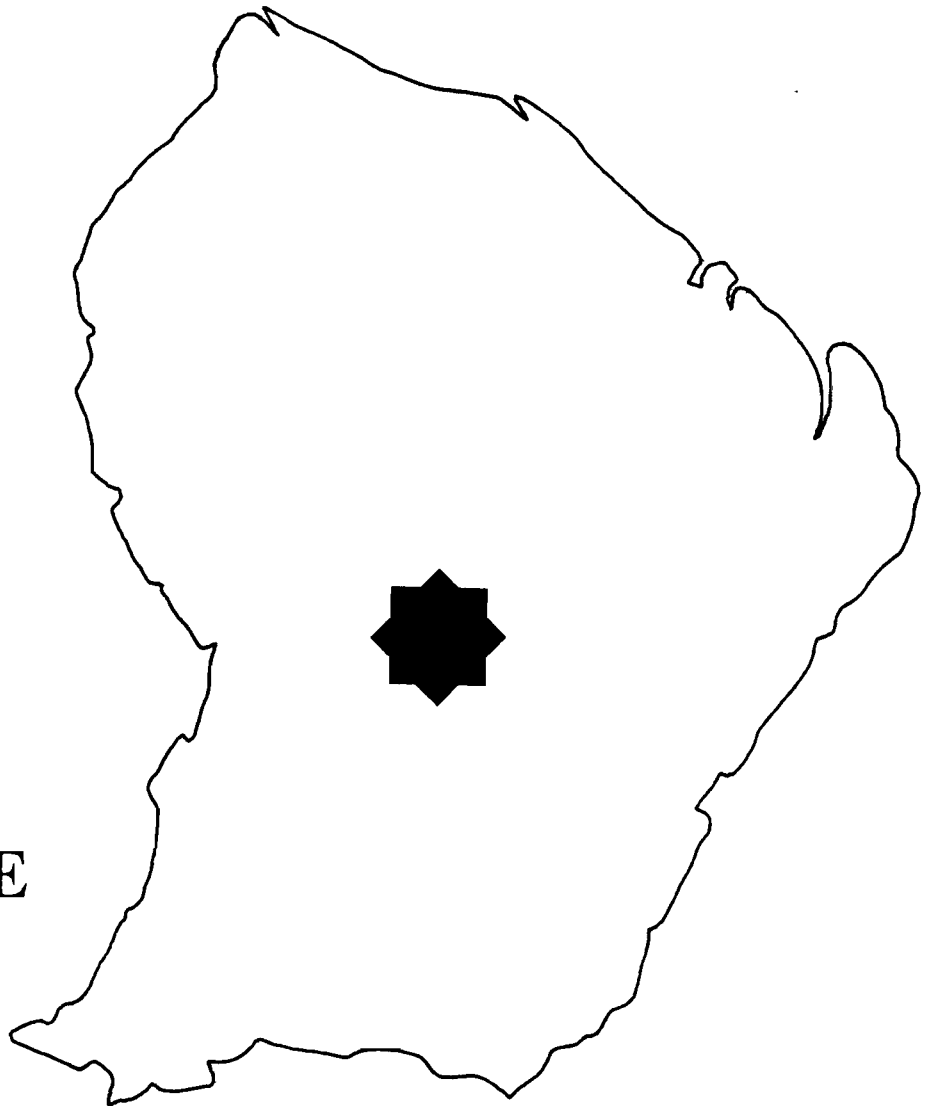


**FLORA OF CENTRAL
FRENCH GUIANA**



ARECACEAE

FLORA OF CENTRAL FRENCH GUIANA

[file: FLORSAÜL]

ARECACEAE (PALM FAMILY)

Jean-Jacques de GRANVILLE

Small to large, multi- or single-stemmed, armed or unarmed, monoecious and pleioanthic (at least in our species) plants. Trunk usually erect, unbranched, very slender to massive, sometimes climbing or subterranean ("stemless" palms), ringed by leaf scars, sometimes with persisting decaying leaf-sheaths at top. Roots often forming a \pm important mass at base, bearing small, conical, white pneumatorrhizae. Leaves small to very large, spirally arranged, forming a crown (except in climbing species); sheath tubular, fibrous, usually splitting opposite to petiole, sometimes forming a crownshaft; petiole usually terete, canaliculate or grooved above; blade pinnate or entire or irregularly pinnatisect, the pinnae linear or lanceolate, often sigmoid, acuminate, with a midrib and several parallel secondary veins. Inflorescences single or few, axillary, inter- or infrafoliar, usually branched (to 1-3 order), sometimes spicate; peduncle with prophyll flattened and keeled and one enlarged peduncular bract, sometimes woody, persistent or caducous; rarely few smaller bracts; rachillae \pm slender, bearing many flowers. Flowers unisexual (in our species), solitary or in triads, spirally arranged on rachilla, sessile or short stalked, sometimes inserted in pits; calyx annular or urceolate and lobed, or with 3 sepals \pm connate at base; corolla urceolate or with 3 petals, valvate or imbricate; stamens 3 to many; ovary superior, usually 3-celled, with a single, anatropous ovule in each cell, but usually 1 fertile cell only. Fruit a drupe, 1- (rarely 3-) seeded; epicarp smooth or setose; mesocarp fleshy, \pm fibrous; endocarp thin, woody, with 3 pores; seed with endosperm homogeneous to ruminant.

CHECKLIST OF SPECIES

Astrocaryum

- A. gynacanthum* Martius
- A. murumuru* Martius
- A. paramaca* Martius
- A. sciophilum* (Miquel) Pulle

Bactris

- B. acanthocarpoides* Barbosa Rodrigues
- B. aubletiana* Trail
- B. brongniartii* Martius
- B. elegans* Barbosa Rodrigues & Trail
- B. floccosa* Spruce
- B. gasipaes* Humboldt, Bonpland & Kunth
- B. gastoniana* Barbosa Rodrigues
- B. geonomoides* Drude
- B. humilis* (Wallace) Burret
- B. maraja* Martius
- B. oligocarpa* Barbosa Rodrigues
- (*) *B. "pliniana"* Henderson & de Granville
- B. raphidacantha* Wessels Boer
- B. simplicifrons* Martius

Desmoncus

- D. macroacanthos* Martius

Euterpe

- E. oleracea* Martius
- E. precatoria* Martius

Geonoma

- G. baculifera* (Poiteau) Kunth
- G. deversa* (Poiteau) Kunth
- G. euspatha* Burret
- G. maxima* (Poiteau) Kunth
- G. stricta* (Poiteau) Kunth
- G. umbraculiformis* Wessels Boer

Hyospathe

- H. elegans* Martius

Jessenia

- J. bataua* (Martius) Burret
- subsp. *oligocarpa* (Grisebach & H. Wendland) Balick

Maximiliana

- M. maripa* (Correa de Serra) Drude [not collected]

Oenocarpus*O. bacaba* Martius***Orbignya****O. sagotii* Trail ex Im Thurn***Socratea****S. exorrhiza* (Martius) H. Wendland***Syagrus****S. inajai* (Spruce) Beccari

(*) taxa not yet published

GENERIC CLASSIFICATION (from Uhl & Dransfield 1987)

All genera found in the area of Saül belong to the subfamily ARECOIDEAE.

Tribe IRIARTEEAE	Subtribe IRIARTEINAE	<i>Socratea</i>
Tribe ARECEAE	Subtribe EUTERPEINAE	<i>Euterpe</i> <i>Oenocarpus</i> <i>Jessenia</i> <i>Hyospathe</i>
Tribe COCOEAE	Subtribe BUTIINAE	<i>Syagrus</i>
	Subtribe ATTALEINAE	<i>Orbignya</i> <i>Maximiliana</i>
	Subtribe BACTRIDINAE	<i>Bactris</i> <i>Desmoncus</i> <i>Astrocaryum</i>
Tribe GEONOMEAE		<i>Geonoma</i>

KEY TO GENERA

1. Trunk supported by cone of prickly stilt roots. Pinnae praemorse at tip. Inflorescence with 5-6 peduncular bracts. *Socratea*.
1. Trunk without prickly stilt roots. Pinnae acute or acuminate at tip or blade entire or divided into few broad segments. Inflorescence with 1-2 peduncular bracts.
 2. Climbing lianas. Leaf rachis extended into flagellum bearing retrorse hooks. *Desmoncus*.
 2. Non-climbing trees or shrubs. Leaf rachis not extended into flagellum.
 3. Plants usually \pm spiny. Margins of blade with minute, hardly visible, bristles or "setae" (presence detected by moving finger from tip to base of leaflets).
 4. Plants always heavily armed with black, flattened \pm winged spines. Blade white or whitish pruinose beneath. Inflorescence with one to few pistillate flowers at base of rachilla, the staminate flowers densely aggregated on apical part. *Astrocaryum*.
 4. Plants generally armed with round or slightly flattened spines. Blade green beneath. Inflorescence with pistillate and staminate flowers intermixed on lower half of rachilla, the apical part usually with staminate flowers only. *Bactris*.
 3. Plants unarmed. Margins of blades without bristles.
 5. Plants medium sized to tall, either "stemless" or with trunk $>$ 4 cm diam. Leaves $>$ 2 m long.
 6. Plants "stemless" (the stem subterranean). Blade regularly pinnate. *Orbignya*.
 6. Plants with well-developed stems. Blade regularly or irregularly pinnate.
 7. Plants tall, with single stem. Inflorescence in shape of "horse-tail", the peduncular bract caducous.
 8. Pinnae at regular intervals along entire rachis, the central ones $>$ 7 cm in width; blade whitish, waxy beneath. Seeds with endosperm ruminant. *Jessenia*.
 8. Pinnae at regular intervals toward apex, \pm in clusters toward base, the central ones $<$ 7 cm in width; blade green, \pm shiny beneath. Seeds with endosperm homogeneous. *Oenocarpus*.
 7. Plants variable in size and habit. Inflorescence never in shape of "horse-tail", the peduncular bract persistent.
 9. Plants tall, slender, the stem single or in clusters, with mass of reddish, aerial roots at base. Pinnae in regular intervals along rachis, oriented in single plane. *Euterpe*.
 9. Plants tall or medium sized, the stem single, without mass of reddish, aerial roots at base. Pinnae in clusters along rachis, oriented in several planes.
 10. Plants robust, trunk $>$ 15 cm diam. Petiole $>$ 1.5 m long, the blade $>$ 130 pairs of pinnae. *Maximiliana*.
 10. Plants medium sized, trunk \leq 15 cm diam. Petiole $<$ 1 m long, the blade $<$ 130 pairs of pinnae. *Syagrus*.
 5. Plants small, trunk $<$ 4 cm diam. Leaves $<$ 2 m long.
 11. Leaf sheath tubular in young as well as in old leaves, never split opposite to petiole. Inflorescence usually with $>$ 10 slender simple rachillae. Flowers not in pits. *Hyospathe*.
 11. Leaf sheath split opposite to petiole in old leaves. Inflorescence either with $<$ 10 rachillae or rachillae branched. Flowers in pits. *Geonoma*.

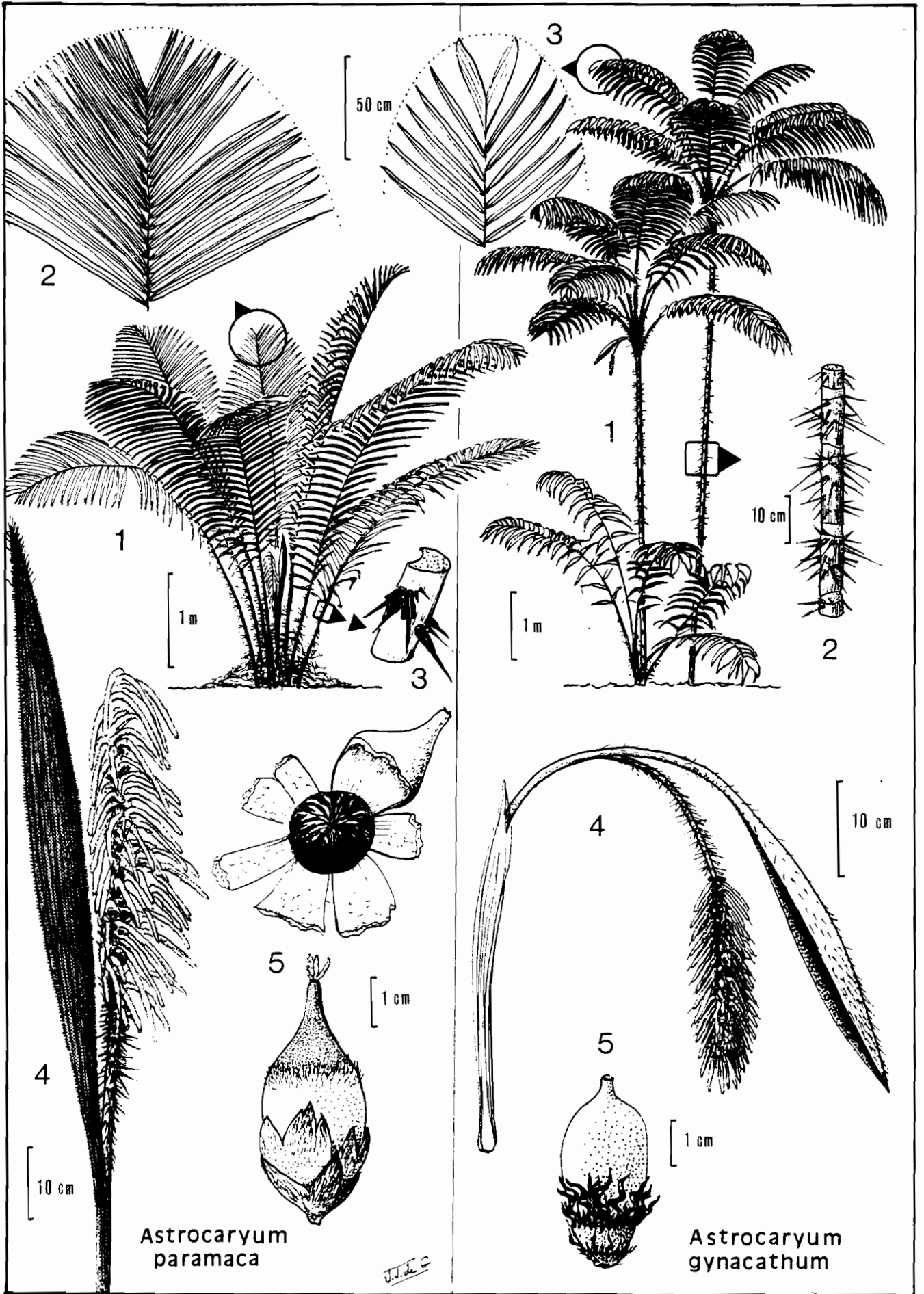
DESCRIPTION OF TAXA

ASTROCARYUM G.F.W. Meyer

Monoecious, heavily armed plants, variable in size and habit: single-stemmed understory plants with subterranean or short trunk and big leaves arranged in funnel-shaped crown; tall multi-stemmed canopy plants with single trunk; medium-sized, multi-stemmed understory plants. Leaves pinnate, with pinnae numerous, acuminate, linear lanceolate, or \pm sigmoid, arranged at regular intervals along rachis and all in single plane (at least in our species); blade white or whitish pruinose abaxially. Inflorescence usually 1-3 per plant, interfoliar, once branched, with peduncular bract spiny or hairy; rachillae numerous, densely covered with staminate flowers in distal part, with one (subgenus *Monogynanthus*) pistillate flowers at base, at least in our species. Fruits medium-sized, oblong, obovate or turbinate, brownish, often congested, rostrate at apex, sometimes dehiscent at maturity.

1. Plants without apparent stem (stem subterranean), with funnel-shaped crown. Leaf blade of fertile individuals divided into narrow pinnae to tip, the apical pinnae \leq in width than others. *A. paramaca*.
1. Plants with obvious stem, with or without funnel-shaped crown. Leaf blade of fertile individuals with apical pairs of pinnae usually united, the apical segments $>$ in width than others.
 2. Plants multi-stemmed, with umbrella-shaped crown, generally with 2-8 slender trunks, the trunks $<$ 10 cm diam., conspicuously armed with rings of flattened spines. Leaf sheaths not persistent. *A. gynacanthum*.
 2. Plants with single stem and funnel-shaped crown, the trunks \geq 10 cm diam., unarmed. Leaf sheaths persistent.
 3. Plants of understory, the trunks short, never suckering at base. Petiole with spines arranged in oblique rows, the spines of sheath not to 30 cm long. Common on well drained slopes and hill tops. *A. sciophilum*.
 3. Plants tall, the trunks tall, suckering at base. Petiole without spines conspicuously arranged in oblique rows, the spines of sheath to 30 cm long. Rare in swamp forest. *A. murumuru*.

Astrocaryum gynacanthum Martius (pl. 1). Medium-sized, multi-stemmed plants of understory, 2.5-8 m x 3.5-7 cm, with 1-5 (10) trunks, the internodes 2-20 cm long, armed under leaf scars, with rings of shiny, flattened black spines, 2-15 cm long, obliquely pointing downwards. Leaves 7-12, forming umbrella-shaped crown; sheath 10-30 cm long, fibrous at margins, densely armed with black spines; petiole 40-90 cm long, with black spines, to 10 cm long; rachis 1.5-2.3 m long, basally armed with black spines; pinnae 25-45 per side, linear-lanceolate, slightly sigmoid, acuminate, 18-75 x 1-5 cm, the apical segments much wider (5-13 cm). Inflorescence pendulous; peduncle recurved, spiny in upper half, 20-90 cm long; prophyll erect, membranous, brownish, glabrous, flattenend, 13-50 cm long; peduncular bract arching, woody, brown setose outside, pink inside at anthesis, 45-70 cm long, the upper half swollen, fusiform, spiny, \pm 25 cm long; rachis 14-25 cm long, bearing many (to 180) rachillae, 4-8 cm long. Fruits obovoid, glabrous, smooth, long-rostrate at tip, 18-20 x 28-40 mm, brownish-red and dehiscent like a flower at complete maturity; cupule with long, black, flexuous, flattened, shiny spines at margins. Fl (Oct-Dec), fr (Jan-Jul); occurs everywhere on all types of soil and drainage, never in high density. **Ti-wara**.



Astrocaryum paramaca

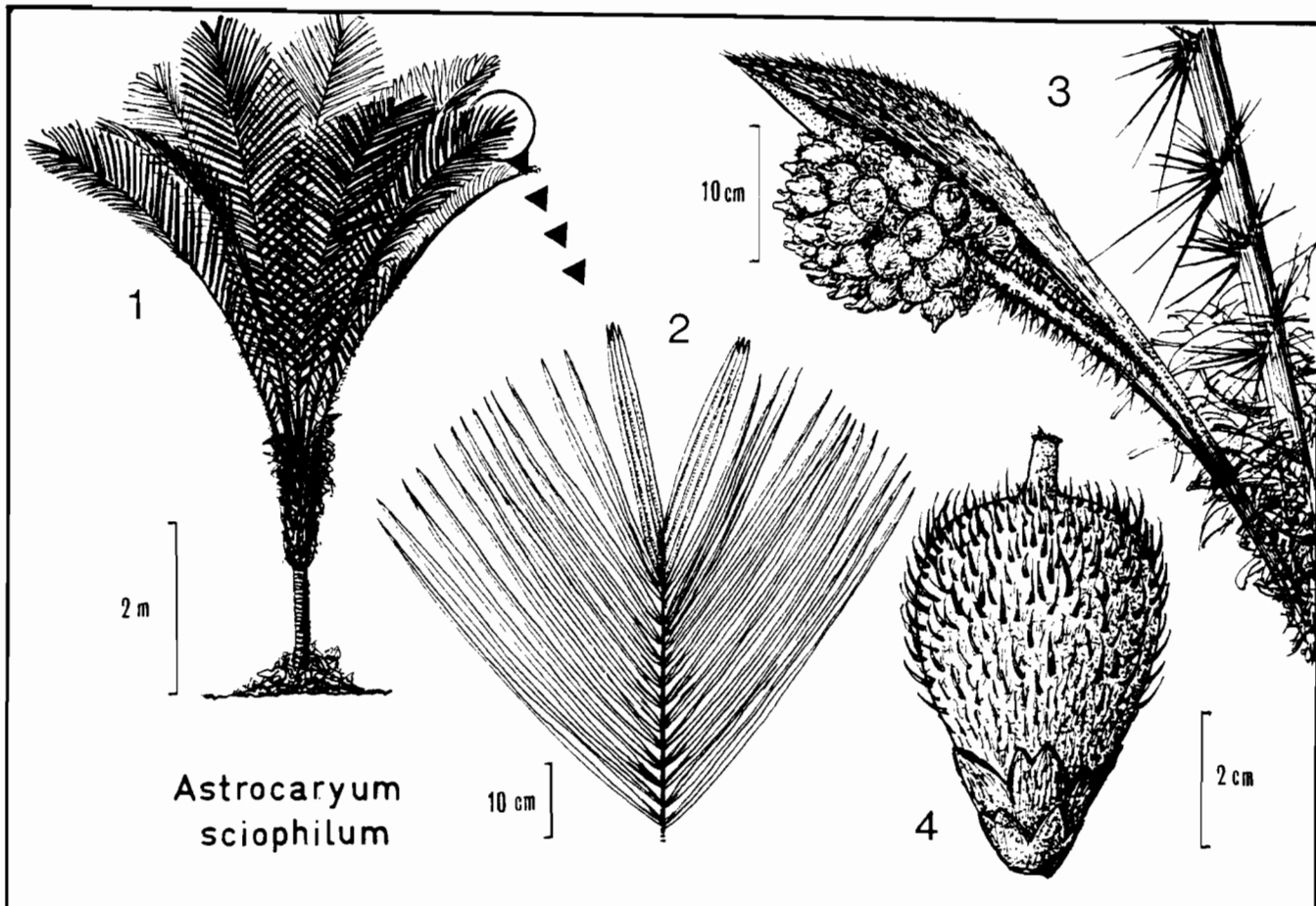
Astrocaryum gynacathum

J.J. de C.

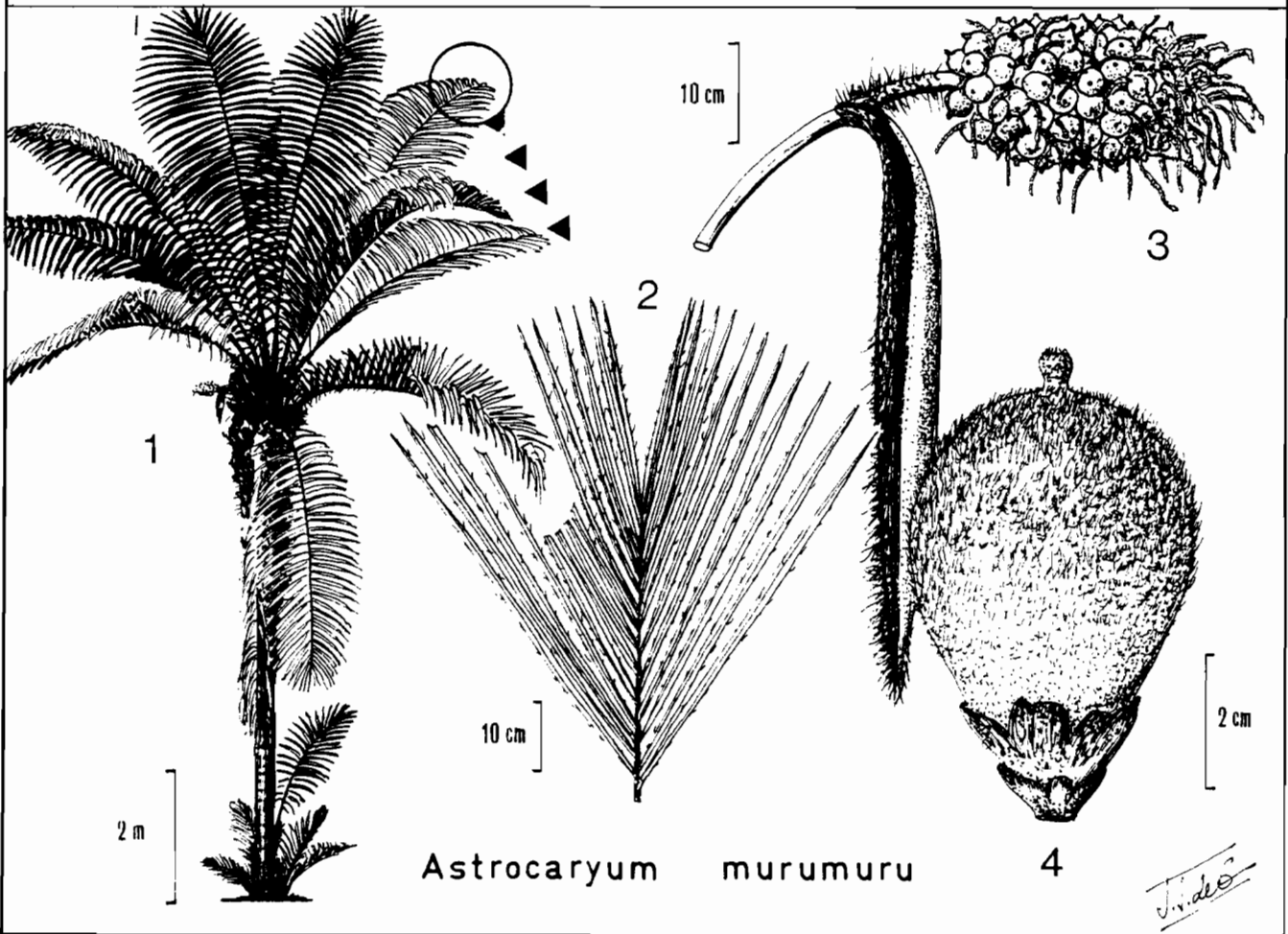
Astrocaryum murumuru Martius (pl. 2). Medium-sized to tall, single-stemmed plants, the trunk unarmed, 3-15 m x 15-27 cm, with few suckers at base. and muff of persistent dead leaf sheaths along upper part, the internodes 4-15 cm long. Leaves 10-20, in funnel-shape crown; petiole, including sheath, very fibrous at margins, 2-3 m long, brown-red shiny and concave inside, greyish-green lepidote and rounded outside, densely armed with black, flattened, spines, to 30 cm long; rachis 4-6.2 m long, spiny; pinnae 50-135 per side, straight, linear-lanceolate, with spines to 1 cm long on margins, 21-175 x 1.5-7.5 cm, the apical segments sometimes wider (to 10 cm). Inflorescences 1-3 per plant, at first erect, then curved, sometimes \pm pendulous in fruit; peduncle robust, whitish turning pale brown, arachnoid-tomentose, densely spiny on distal part, glabrous below bract, 0.8-1.7 m long, section elliptic 2.5-3.3 x 3.5-5 cm; prophyll 75-130 cm long, densely dark brown-setose, scattered with small black spines to 3 cm long; peduncular bract 65-150 cm long, inserted at 1/2 - 2/3 from base of peduncle, fusiform, arachnoid tomentose, densely covered by brown setae, intermixed toward apex with black spines to 2.5 cm long; rachis 30-70 cm long, bearing many rachillae (100-200), 8-20 cm long. Fruits obovoid to turbinate (shape of inverted cone), greyish-brown tomentose, setose, 3-4.4 x 5-8.5, with endocarp fleshy at maturity, 6-10 mm thick, edible. Fl and fr irregular, throughout year; occurs in swamp forest on alluvial soils; rare in the interior: in Saül neighbourings, mostly known from "Crique Cochon" valley.

Astrocaryum paramaca Martius, (pl. 1). "Stemless" plants of understory, with stem subterranean, in shape of saxophone. Leaves 10-15, erect in typical funnel-shaped crown, acting as litter collector; petiole, including sheath, 1.1-1.5 m long, green, almost terete, canaliculate above, armed with black, flattened spines, the spines basally winged, 2-10 cm long, \pm clustered in groups; rachis 3-4.7 m long, abaxially armed with same spines but smaller; pinnae 75-100 per side, straight, linear-lanceolate, 22-110 x 1-4 cm, the apical segments not wider. Inflorescence 1 (rarely 2) per plant, erect between leaf bases; peduncle straight, terete, green, 0.6-1.5 m long, the upper part densely armed with black spines, 2-5 cm long; prophyll \pm 60 cm long, densely brown setose outside; peduncular bract 70-130 cm long, inserted at 1/2-2/3 from base of peduncle, fusiform, densely brown velvety setose, with few black spines at tip; rachis 20-70 cm long, armed with black spines to 1.5 cm long, bearing many rachillae, 12-15 cm long. Fruits brown, oblong-ellipsoidal, with rostrum to 1 cm long, smooth to spinulose on upper part, but early glabrescent, 1.5-2 x 3-4 cm, dehiscing like flower at complete maturity, exposing bright yellow mesocarp and black endocarp; cupule with black setae. Fl (Jul-Dec), fr (Jan-Jun); very common in forest understory, mostly on well drained clayey soils, often found in very high density, in particular on "Plateau la Douane" and along "Crique Limonade" trail. **Counana.**

Astrocaryum sciophilum (Miquel) Pulle, (pl. 2). Medium-sized, robust, single-stemmed palm of understory, with trunk short, erect, 0.5-5(10) m x 10-17 cm, usually covered by dead leaf sheaths, the lowest part sometimes bare, unarmed, ringed with close, prominent leaf scars. Leaves 8-15, erect in typical funnel-shaped crown acting as litter collector; petiole, including sheath 0.7-1.5 m long, almost terete, dark green, strongly armed with slightly flattened, black spines, 1-25 cm long, clearly disposed in lateral oblique rows, 3-5 cm apart; rachis 3.5-5.2 m long, with spines arranged like on petiole, but fewer and smaller; pinnae 70-95 per side, linear lanceolate, subcoriaceous, plicate, 38-140 x 0.5-7.5, the apical segments much wider (6-20 cm). Inflorescences 1-2 per plant, at first obliquely erect between leaf bases, arching at top when fruiting; peduncle terete, yellowish to brownish-green lepidote, 0.6-1.5 m long, the upper part densely armed with black prickles 0.5-3 cm long; prophyll 70 cm long, flattened, abaxially setose, hidden by leaf sheaths; peduncular bract 60-75 cm long, inserted at \pm 2/3 from base of peduncle, the upper part fusiform; coriaceous, dark brown tomentose, densely armed with black prickles, 5-15 mm long; rachis 10-25 cm long with many rachillae, 6-12 cm long; infrutescence in dense, subglobose head; fruits 2.5-4 x 4-7 cm, turbinate, densely congested, greyish-brown, the rounded apical part covered by black, curved spines, 5-12 mm long, with rostrum 5-8 mm long; cupule to 2.5 cm high, pale brown, with minute, adpressed setae. Fl (Aug-Dec), fr (Mar-Sep); common on well drained soils on granite bedrock, forming fairly dense populations on hill tops and slopes ("Mont Belvédère", "Montagne la Fumée", trail to "Roche Bateau"). **Mourou-mourou.**



Astrocaryum sciophilum



Astrocaryum murumuru

J. J. J. J.

BACTRIS N.J. Jacquin ex Scopoli

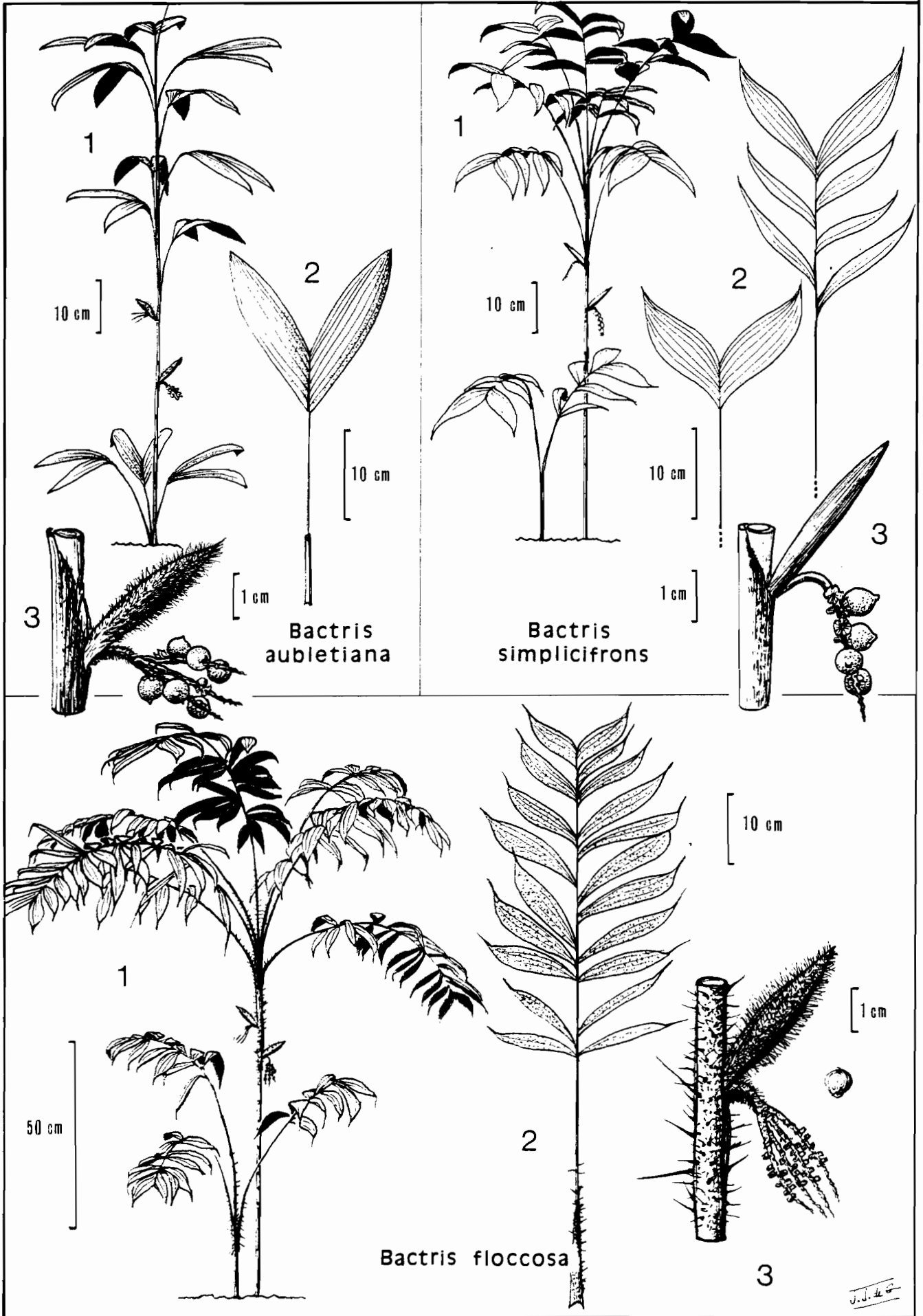
Small to medium sized, multi-stemmed, generally armed, monoecious plants of understory; the trunks slender, sometimes very short, rarely solitary and inconspicuous. Leaves usually spiny on sheath and petiole; the blade pinnate, sometimes entire and bifid in the smallest species; when pinnate, leaflets are disposed at irregular intervals forming clusters along rachis (except in *B. raphidacantha*). Inflorescences 1-2(4) per plant, interfoliar or infrafoliar, once branched, sometimes bifurcate or simple, with peduncular bract spiny or setose, rarely glabrous; the pistillate flowers in triads with 2 staminate flowers or scattered among male flowers, either all along entire rachilla or restricted to base, the distal part bearing pistillate flowers only. Fruits small, usually globose, orange to red and setose, or black and smooth at maturity, one-seeded.

1. Leaf blade pubescent on both sides. *B. floccosa*.
1. Leaf blade always glabrous on both sides.
 2. Tiny palms, the stem < 2 cm diam. Leaves, including sheath and petiole, usually < 1.5 m long.
 3. Leaves with 15-25 pairs of pinnae. *B. elegans*.
 3. Leaves with 1-12 pairs of pinnae.
 4. Leaves, including sheath and petiole, usually > 1 m long, with 7-12 pairs of pinnae clustered in groups, sigmoid and acuminate. Petiole and leaf rachis armed with black spines. *B. gastoniana*.
 4. Leaves, including sheath and petiole, usually < 1 m long, simple and bifid or with 2-6 pairs of pinnae. Petiole and leaf rachis armed or unarmed.
 5. Leaf blade simple, bifid at apex. Sheath and petiole densely armed with black spines. Leaf rachis 25-35 cm long. Fruit setose. *B. geonomoides*.
 5. Leaf blade with 1-6 pairs of pinnae. Sheath and petiole unarmed or with few small spines. When leaves simple, rachis 2-15 cm long. Fruits glabrous.
 6. Stem inconspicuous or very short, usually < 30 cm tall. Leaves forming a crown. Inflorescence erect, interfoliar. Fruits ovoid, > 1 cm long. *B. oligocarpa*.
 6. Stem slender, > 50 cm tall, at least in fertile individuals. Leaves spineless, more or less spirally distributed along upper part of stem. Inflorescence recurved, infrafoliar. Fruits globose, < 1 cm diam.
 7. Blade always simple and deeply bifid. Segments more or less elliptic and convex above. Peduncular bract setose. *B. aubletiana*.
 7. Blade either simple and deeply bifid or with 2-6 pairs of pinnae. When leaves simple, segments slightly sigmoid and flat. Peduncular bract glabrous. *B. simplicifrons*.
2. Small to medium-sized palms. Stem inconspicuous or > 3 cm diam. Leaves, including sheath and petiole, usually > 1.5 m long.
 8. Trunk 10-15 cm diam., to 20 m tall. Introduced and cultivated in gardens. *B. gasipaes*.
 8. Trunk 2-8 cm diam., < 10 m tall. Native species growing in primary forest.
 9. Trunk short with leaf scars very closed. Leaf rachis usually > 2 m long. Pinnae disposed in single plane, at regular intervals along rachis. *B. raphidacantha*.

9. Trunk well developed with leaf scars spaced, or trunk inconspicuous. Leaf rachis usually < 2 m long. Pinnae clustered in groups and oriented in several directions.
 10. Leaf sheath and petiole with yellowish or light brown, strongly flattened spines. Fruits glabrous, black at maturity.
 11. Pinnae straight, elliptic lanceolate, acuminate, glabrous on both sides. Peduncular bract brownish, spiny. *B. brongniartii*.
 11. Pinnae sigmoid, long acuminate, slightly velvety pubescent beneath. Peduncular bract dark brown, strongly velvety pubescent, with or without scattered flat spines. *B. maraja*.
 10. Leaf sheath and petiole with black or dark brown slightly flattened spines. Fruits setose, orange to red at maturity.
 12. Single-stemmed plants. Trunk usually inconspicuous, sometimes very short, < 0.5 m tall, unarmed. *B. humilis*.
 12. Multi-stemmed plants. Trunk 0.5-4 m tall, armed with rings of black spines.
 13. Pinnae sigmoid, the middle ones usually > 3 cm in width. Peduncular bract 8-15 cm long. Fruits ca 2 cm diam. at maturity. Plants growing in swamp forest. *B. pliniana*.
 13. Pinnae straight, the middle ones usually < 3 cm in width. Peduncular bract 12-30 cm long. Fruits 1-1.5 cm diam. at maturity. Plants growing on well drained slopes. *B. acanthocarpoides*.

Bactris acanthocarpoides Barbosa Rodrigues (pl. 6). Medium-sized, multi-stemmed plants of understory, 2-6 m x 3-5 cm, with 1-10 trunks, the internodes 2-9 cm long armed with 2-5 cm long black spines. Leaves 6-15, erect and arching; sheath 30-75 cm long, dark red inside, green outside, densely armed with 1-4 cm long black spines; petiole 15-120 cm long, green, terete, slightly canaliculate above, with black spines to 10 cm long; rachis 1.2-2.5 m long, basally armed with black spines; blade ragged, pinnate, with 25-40 pinnae per side, oriented in several directions and clustered in groups of 2-8 except in most distal part; pinnae straight, narrow, linear-lanceolate, 50-80 x 2-3 cm; segments of the apical pair much wider (4-8 cm). Inflorescences 1-2, interfoliar, more or less horizontally pointing; peduncle recurved, 12-25 cm long; prophyll flattened, spinulose at apex, 12-30 x 4-7 cm; peduncular bract 20-45 cm long, straight or slightly recurved, densely covered with up to 1 cm long brownish to black spines; rachis 3-5 cm long, bearing many 8-15 cm long rachillae. Fruits globose, setose, 8-15 mm diam., bright red at maturity, densely aggregated, numerous (up to 200 per infrutescence). Fl (Nov, Dec), fr (Feb-Aug); grows mostly on well drained slopes; infrequent in Saül area (only once seen, near "Eaux Claires"). **Zagrinette, ti-wara.**

Bactris aubletiana Trail (pl. 3). Tiny, single or multi-stemmed plants of understory, 0.5-1.5 m x 4-7 mm, with 1-2 very slender, unarmed stems, the internodes 2-7 cm long. Leaves 3-10, more or less spirally arranged in the upper part of the stem; sheath glabrous, unarmed, tubular, 6-14 cm long; petiole green, slender, 5-22 cm long, usually unarmed; blade horizontally spread, deeply bifid (V-shaped), with a 3-9 cm long rachis and 2 segments, elliptic to oblanceolate, slightly convex above, 3.5-7 x 12-32 cm each. Inflorescences often several per plant, inter- and infrafoliar; peduncle 3-6 cm long, hairy, hidden by leaf sheath as well as the 3-5 cm long prophyll; peduncular bract 8-13 cm, with a 4-8 cm long, erect, visible part, densely covered with black, erect, 2-5 mm long setae; 2-3 (rarely 4) recurved rachillae, 2-5 cm long. Fruit globose, glabrous, 5-8 mm diam., orange at maturity. Fl (Dec-Apr), fr (Apr-Nov); restricted to hill slopes on granite bedrock, East of Saül ("Mt La Fumée", "Mt Belvédère", "Pic Matécho")



Bactris aubletiana

Bactris simplicifrons

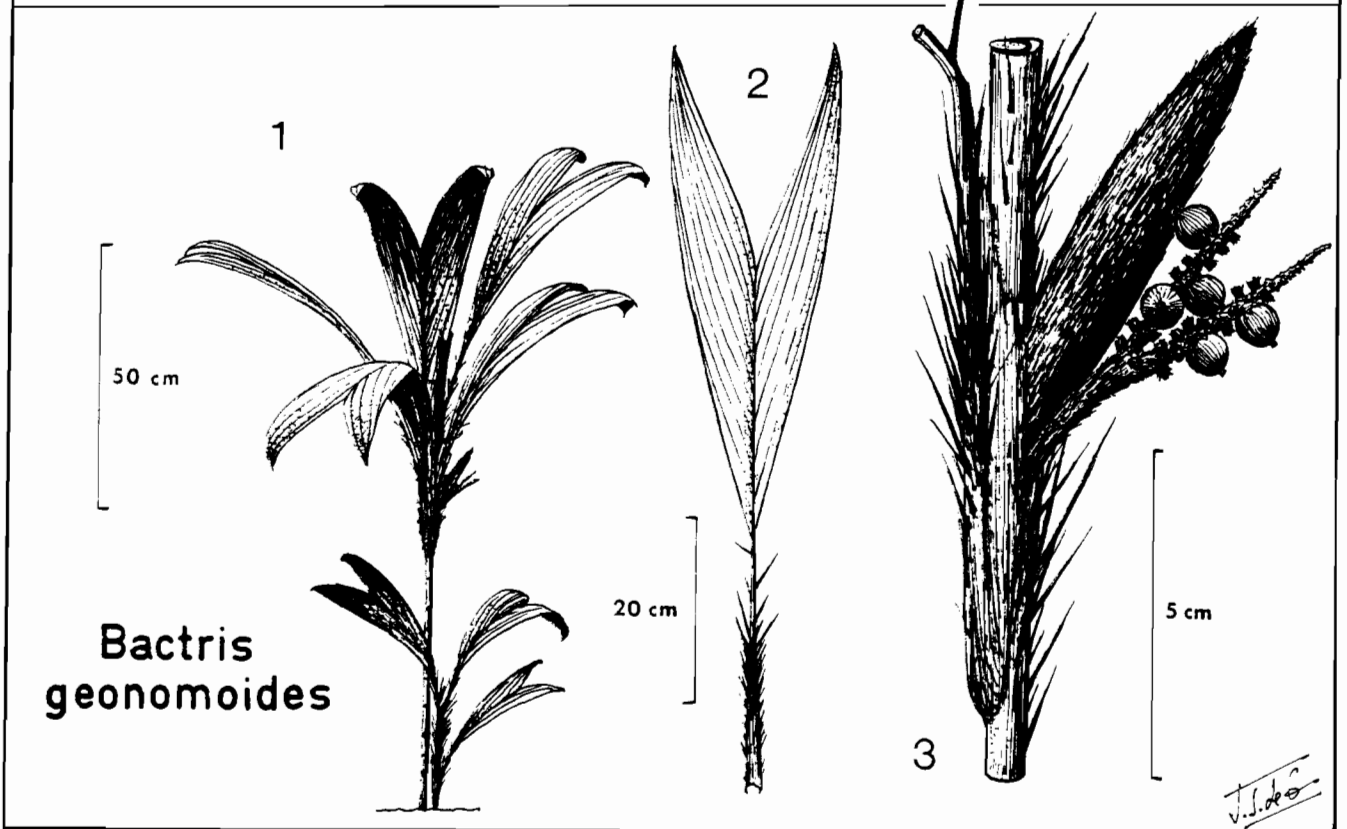
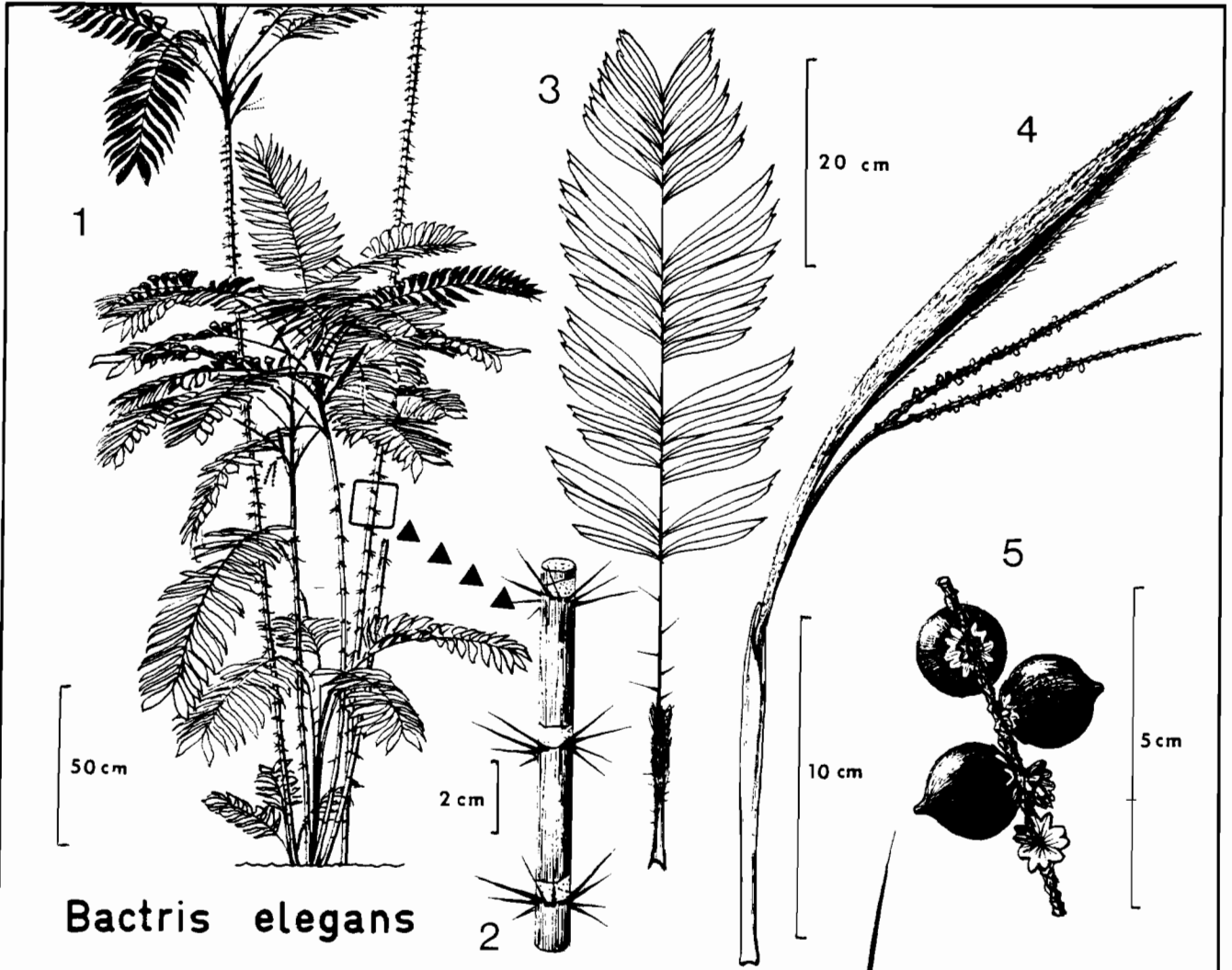
Bactris floccosa

Bactris brongniartii Martius (pl. 5). Medium-sized, multi-stemmed, coloniate plants, 2-8 m x 3-5 cm, with generally > 5 trunks, the internodes 4-15 cm long, densely armed with rings of 0.5-7 long, slightly flattened, black or brownish spines, pointing downside. Leaves 6-10, erect; sheath 30-70 cm long, green to yellowish brown, densely armed with 0.5-4 cm long, flattened, yellowish spines; petiole 30-120 cm long, green, terete, slightly canaliculate above, armed, as well as rachis, with up to 8 cm long, pale yellow but brown at tip, flat spines; rachis 1.1-2 m long; blade ragged, pinnate, with 15-37 pinnae per side, oriented in several directions and clustered in 5-7 groups of 2-9; pinnae straight, oblanceolate, slightly coriaceous, 40-85 x 2-6 cm; segments of the apical pair often wider (\pm 4-10 cm) and deeply toothed at tip. Inflorescences 1-2, interfoliar, lax, \pm horizontally oriented, then drooping when fruiting; peduncle arched, 25-45 cm long, green, usually prickly in the distal part; prophyll 10-35 cm long, flat, sometimes prickly at tip; peduncular bract straight, fusiform, 40-70 cm long, brown, scattered with 1-2 cm long, often flattened, yellowish to pale brown spines; rachis 5-10 cm long bearing 10-25 rachillae, 12-18 cm long, pale green. Fruits globose, glabrous, 12-15 mm diam., black to purplish black at maturity. Fl (Nov-Feb), fr (Mar-Sep); grows in inundated places, along streams, in half shade or in full light; in Saül area, only known from "Crique Cochon".

Bactris elegans Barbosa Rodrigues & Trail (pl. 4). Small, multi-stemmed plants of understory, 1.5-4 m x 1-2 cm, with 2-30 (or more) slender stems, forming a clump with basal shoots; internodes 2-15 cm long armed, under each leaf scar, with rings of 2-3 cm long, black spines. Leaves 4-10, erect; sheath 15 cm long, fibrous, brownish grey, \pm armed with 0.5-2 cm long, brown or black spines; petiole 15-20 cm long, green to greyish-brown tomentose, bearing up to 4 cm long, erect, yellowish to black spines; rachis 30-80 cm long, dark brown, velvety pubescent, prickly at base; blade pinnate, with 15-20 pinnae per side, all in single plane, either all at regular intervals or distributed in few groups but regularly spaced in each group; pinnae sigmoid, oblanceolate, asymmetric and bifid at apex, 10-25 x 1-3 cm; segments of the apical pair often wider and deeply toothed at tip. Inflorescence single, interfoliar, usually bifid, erect and arching at anthesis, pendulous when fruiting; peduncle 15-25 cm long; prophyll 10-15 cm long, flattened; peduncular bract 25-40 cm long, straight, fusiform, greyish to reddish-brown tomentose, with numerous 0.2-1.5 cm long black prickles; 1-3 slender rachillae, 10-15 cm long. Fruit globose, glabrous, 15 mm diam., green, turning white and becoming purplish-black at maturity. Fl and fr throughout year; grows mostly on slopes, in half shade; very rare in Saül area (only once collected near "Eaux Claires").

Bactris floccosa Spruce (pl. 3). Small, single or multi-stemmed plants of understory, 1-3 m x 6-15 mm., with 1 (rarely 2 or 3) slender, unarmed stems, the internodes 4-15 cm long. Leaves 4-8; sheath 15-35 cm long, tubular, whitish arachnoid-tomentose when young, more or less armed with small, 2-10 mm long, black prickles intermixed with few 1-2 cm long black spines; petiole 20-35 cm long, green, slender, sometimes with few black spines at base; rachis 30-45 cm long, pilose; blade, pinnate with 8-12 pinnae per side, distributed in 3-5 groups of 2-6; pinnae membranous, pilose on both sides, broadly oblanceolate-sigmoid, acuminate, 12-30 x 1.5-5 cm. Inflorescences several per plant, infrafoliar; peduncle 3-6 cm long, recurved, partly hidden by sheath, arachnoid-tomentose and setose at apex, bearing 3-9 whitish arachnoid-tomentose rachillae, 3-5 cm long each, pointing \pm horizontally when flowering and downside when fruiting; prophyll 3-6 cm long; peduncular bract 7-15 cm long, with a 6-10 cm long, fusiform, visible part, densely hirsutous by 2-10 mm long, brown, prickly hairs. Fruits globose, glabrous, 6-8 mm diam., yellowish-green (orange at maturity?). Fl and fr throughout year; infrequent but growing everywhere, mostly in submontane forest, on hill slopes and plateaus.

Bactris gasipaes Humboldt, Bonpland & Kunth). Tall, multi-stemmed plants growing in open areas, 5-20 m x 10-20 cm, with one to several trunks, the internodes 10-25 cm long, armed with black spines. Leaves 10-25, \pm drooping, forming a dense crown; sheath + petiole 1-1.5 m long, usually armed with up to 1 cm long, black spines, as well as the 2-2.5 m long rachis; blade ragged, pinnate, with 100-150 pinnae per side, clustered in groups of 2-13 and oriented in several directions; pinnae straight, narrow, lanceolate, 20-75 x 1-3 cm, with 3-6 mm long



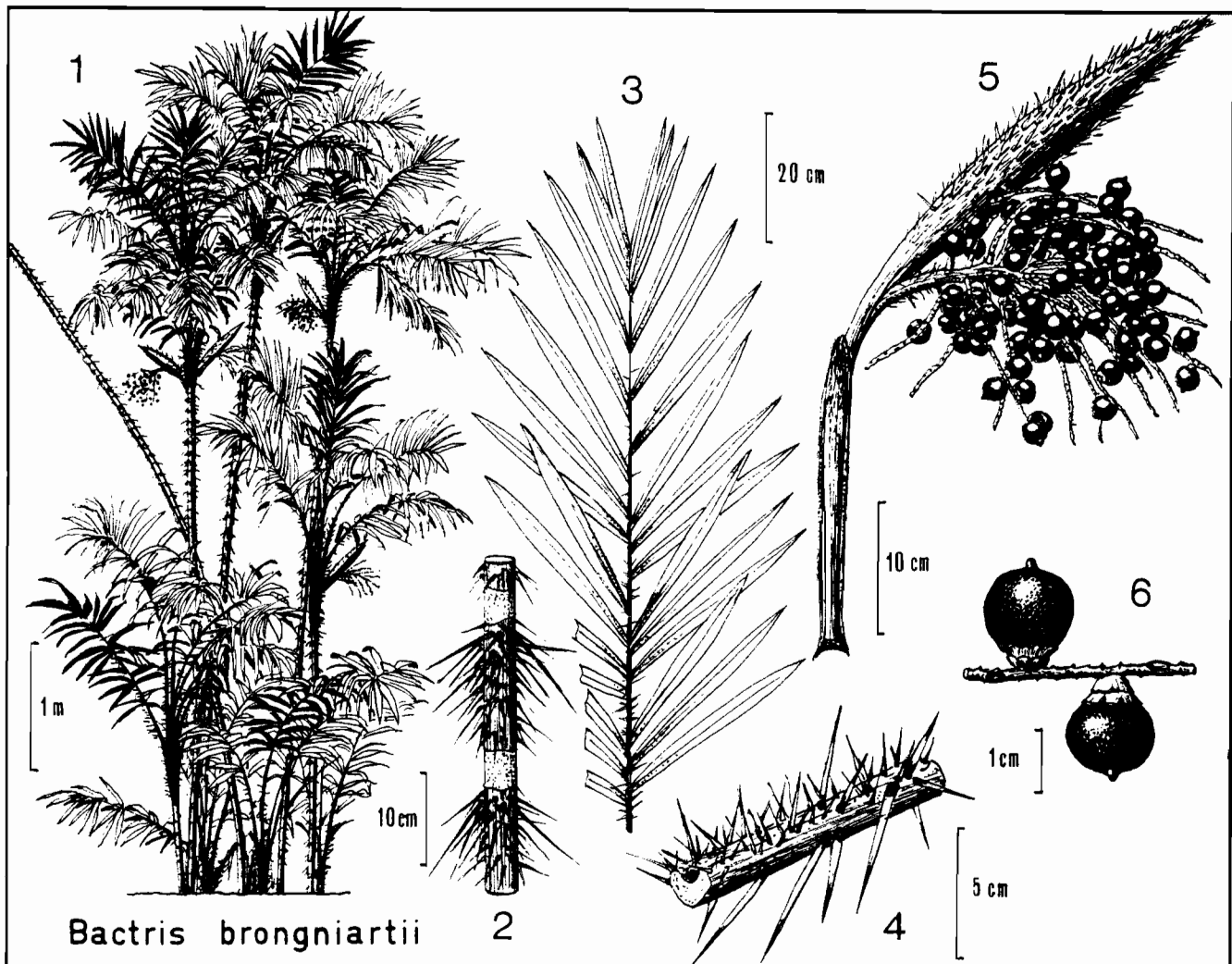
black prickles on midrib and margins. Inflorescence interfoliar, drooping when fruiting; peduncle recurved, unarmed, 20-30 cm long; prophyll \pm 20 cm long; peduncular bract 50-70 cm long, woody, sparsely armed with 5-10 mm long slender, black prickles; rachis 15-20 cm long, bearing 20-60 rachillae, 20-30 cm long. Fruits ovoid, glabrous, 3-5 x 2-3 cm, yellowish-green to orange-red. Fl (Aug-Oct), fr (Nov-May); introduced and cultivated in gardens and burnings for its edible fruits. **Parépou.**

Bactris gastoniana Barbosa Rodrigues (pl. 8). Small, stemless (or rarely short- and multi-stemmed) plants of understory, with stem, when present, to 50 cm tall, 7-15 mm diam., unarmed, the internodes 1-4 cm long. Leaves 5-9, erect and arching; sheath 7-25 cm long, fibrous, with or without a few black spines; petiole 0.3-1 m long and rachis 30-60 cm long, terete, canaliculate above, both green to brown-lepidote and armed with 2-6 cm long, black, erect spines; blade pinnate, with 5-12 pinnae per side, distinctly clustered in alternate groups of 2-3; pinnae oblong-sigmoid, long caudate-acuminate, 10-30 x 2-4 cm; segments of apical pair much wider (5-8 cm). Inflorescences often several per plant, short, infrafoliar, erect, often hardly visible; peduncle 10-20 cm long, moderately curved, brown-setose at apex; prophyll 4-12 cm long, membranous and glabrous; peduncular bract 11-25 cm long, with a fusiform apical part 8-12 cm long, densely covered by pale brown to black, slender, 3-12 mm long, \pm adpressed prickles; spadix simple, 2-5 cm long, densely covered with yellow flowers at anthesis. Fruits few, densely aggregated, elliptic-ovoid, glabrous, 1-1.5 x 1.5-2 cm, with a large cupule at base, purplish-brown at maturity. Fl and fr throughout year; common everywhere on all types of drained soils, mostly on hill slopes.

Bactris geonomoides Drude (pl. 4). Small, multi-stemmed plants of understory, 0.5-2 m x 5-12 mm, with 1-5 slender, unarmed stems, the internodes 2-6 cm long, often bearing a few persistent spiny leaf sheaths at top. Leaves 3-9, erect; sheath 10-20 cm long, dark brown arachnoid-tomentose, heavily armed with 0.5-2 cm long, black spines; petiole 5-25 cm long, brown tomentose with up to 5 cm long, black spines to 5 cm long; blade entire, V-shaped, very rarely irregularly dissected, deeply bifid at apex, 15-25 x 50-65 cm, with a 25-40 cm long rachis, bearing black spines below, basally. Inflorescences several per plant, bi- or trifid, inter- and infrafoliar, obliquely erect, even when fruiting; prophyll 3-6 cm long; peduncular bract 10-15 cm long, straight, with a 7-10 cm long, fusiform, visible part, densely covered with adpressed, 3-6 mm long, black prickles; peduncle 4-6 cm long, pale brown arachnoid-tomentose, with black setae on upper half, bearing 2 or 3 straight rachillae, 2-5 cm long each. Fruits very small, globose, setose, 5-7 mm diam., bright orange at maturity. Fl and fr mostly (Jun-Oct); infrequent and restricted to hill slopes on granite bedrock; only once recorded from Saül area (Mts "La Fumée").

Bactris humilis (Wallace) Burret (pl. 7). Stemless, very rarely short-stemmed, generally solitary plants of understory, with stem, when developed, to 50 cm tall, 3-4 cm diam., unarmed, the internodes very short, sometimes with few basal shoots. Leaves 5-12, erect; sheath 15-35 cm long, brownish-green, usually armed with 0.5-5 cm long black spines; petiole 0.3-1.4 m long, brown-leprose, terete, and rachis 0.8-1.8 m long, both unarmed or sparsely armed with 3-8 cm long, erect, black spines; blade pinnate, with 12-20 pinnae per side, oriented in several directions and clearly arranged in 5-8, rather spaced, clusters of 2-5; pinnae oblanceolate, slightly sigmoid, long acuminate, sometimes obliquely bifid at apex, 15-45 x 2.5-5 cm; segments of apical pair wider (6-10 cm), often split in 3-5 teeth at tip. Inflorescence single, interfoliar, short, erect; peduncle green, glabrous or setose, slightly curved, 10-15 cm long; prophyll flattened, 10-14 cm long, covered with adpressed black setae; peduncular bract 20-30 cm long, brown, densely covered with 2-12 mm long, slender, brown or black prickles, early decaying at base; rachis 2-5 cm long, bearing few to many 7-10 cm long rachillae. Fruits globose, setose, 8-12 mm in diameter, orange to bright red at maturity. Fl (Feb-Jul), fr (Sep-Jan); never frequent but found everywhere, principally on wet, clayey soils, on basic bedrock.

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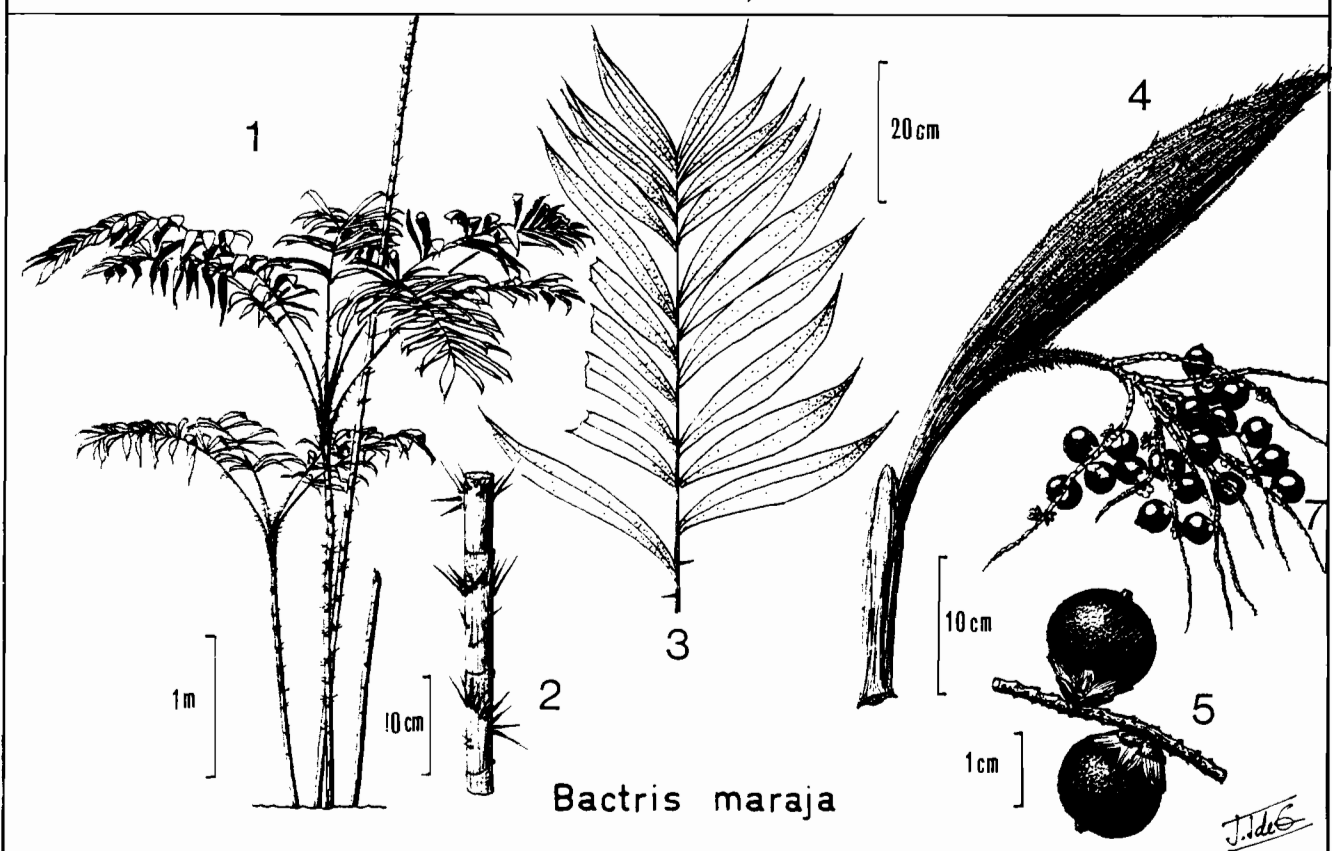
Bactris brongniartii

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Bactris maraja

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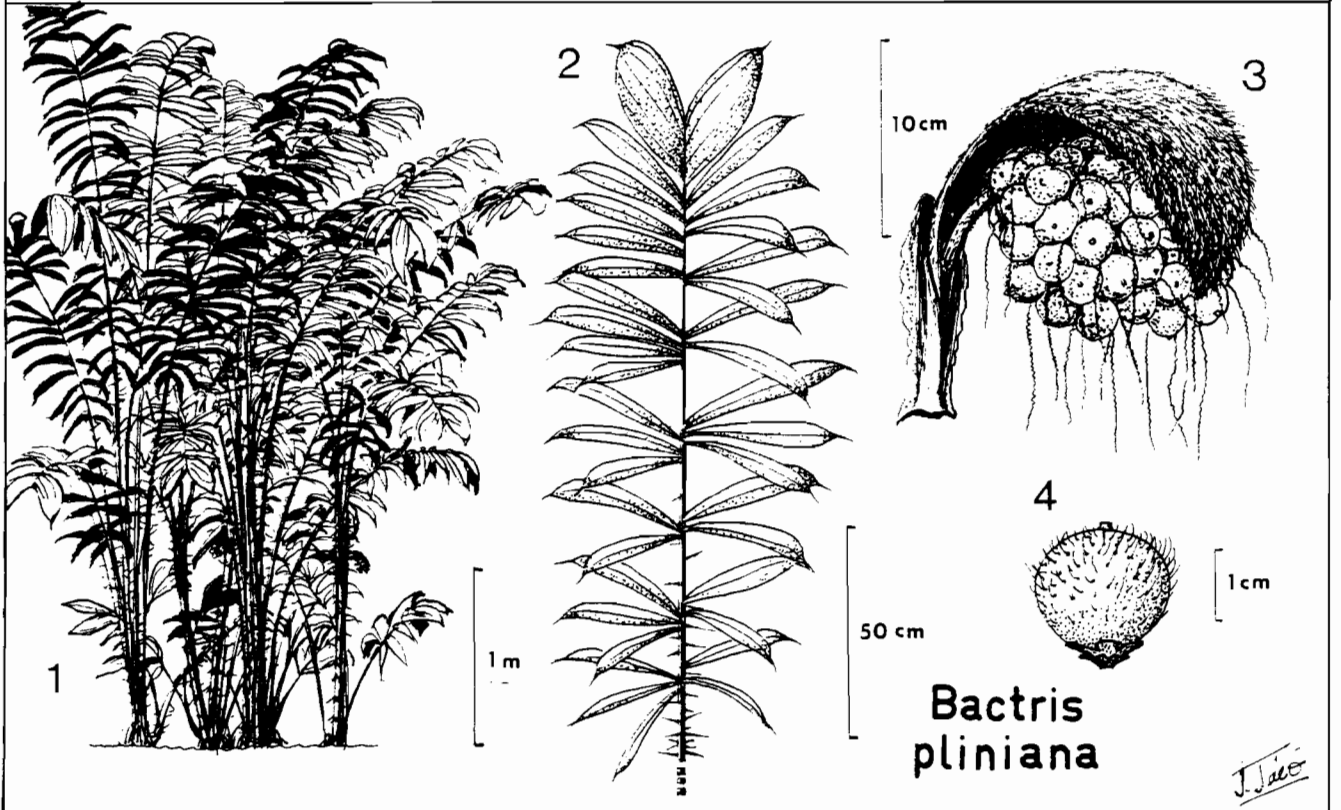
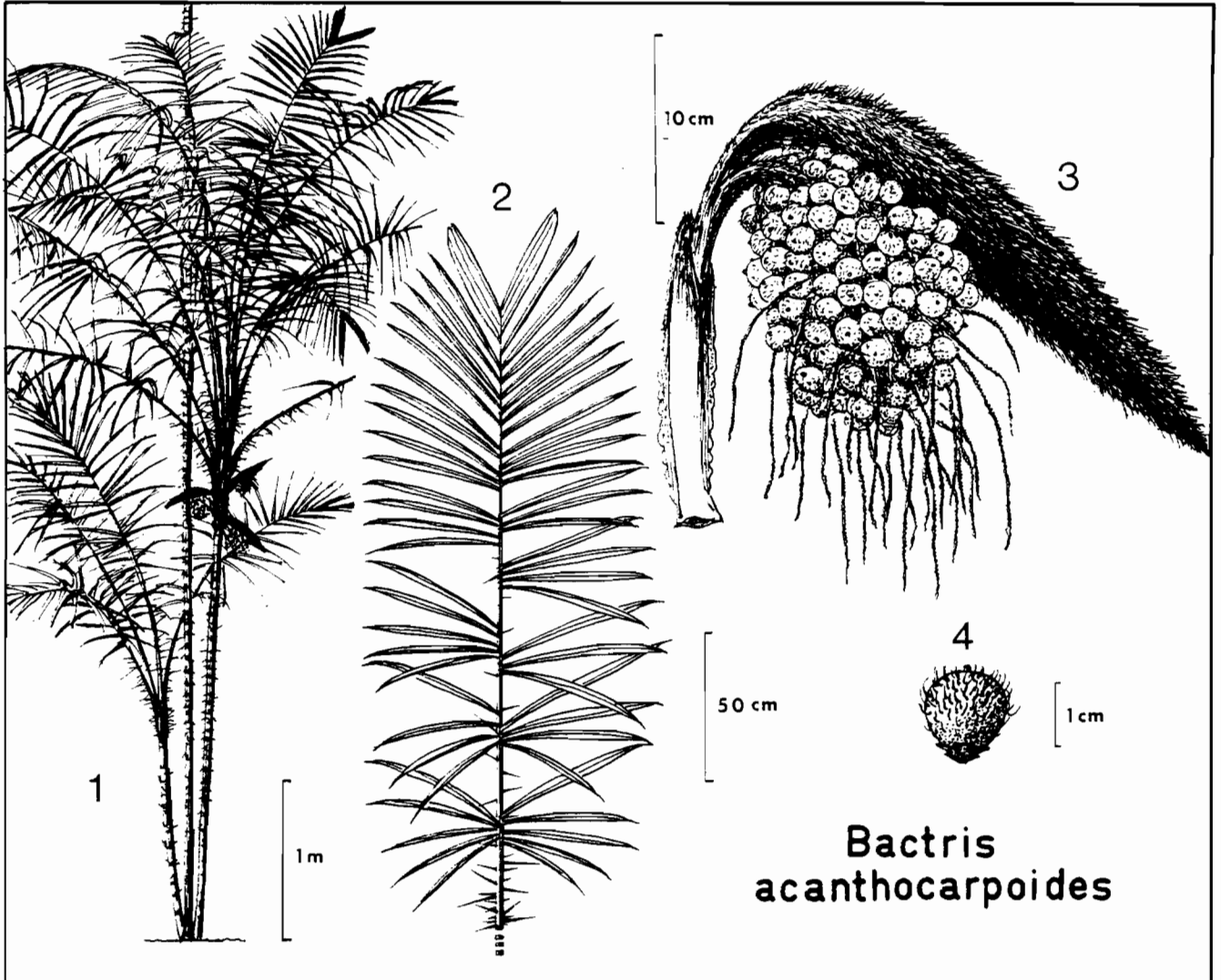
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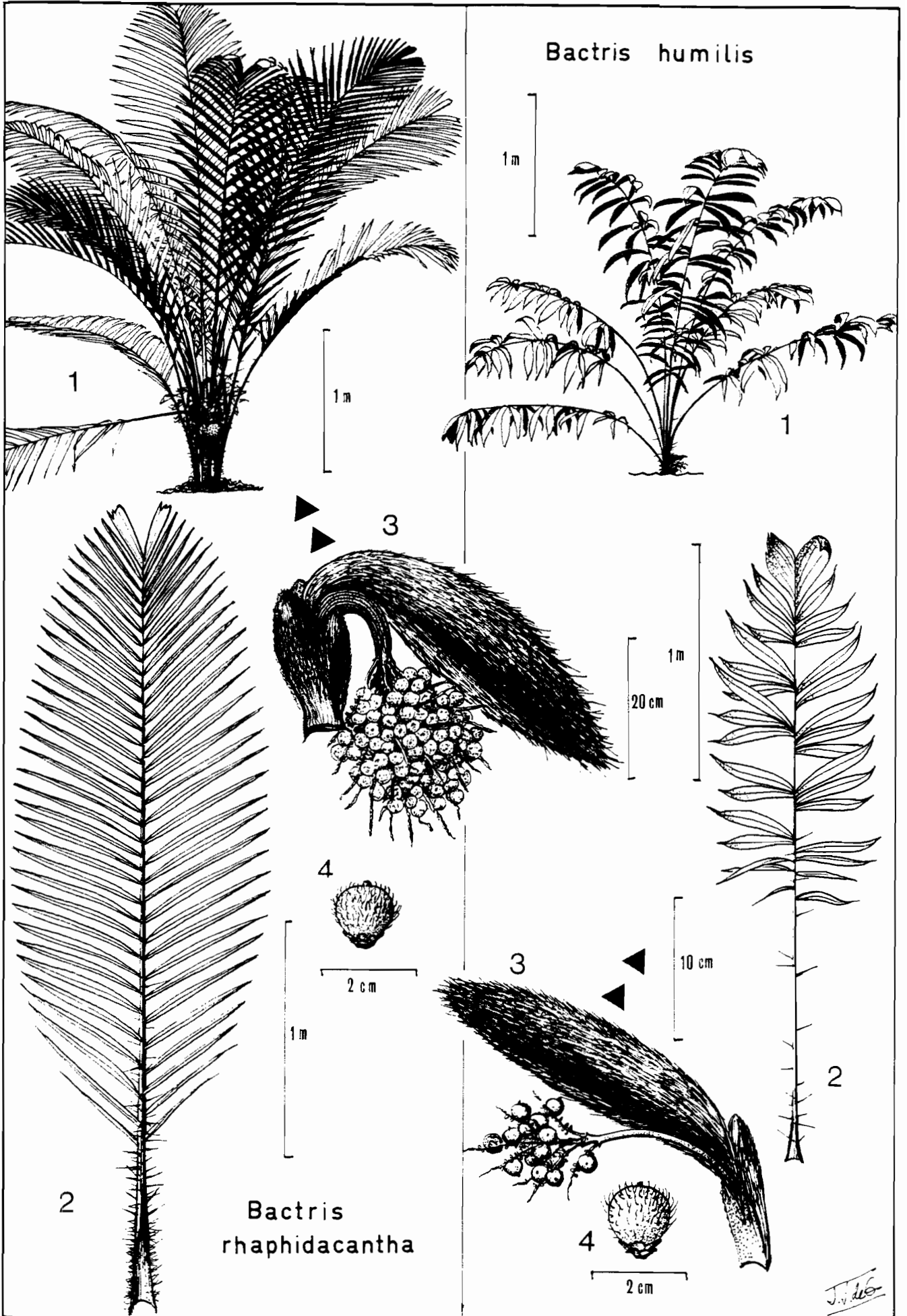
Bactris maraja Martius (pl. 5). Medium-sized, multi-stemmed, plants of understory, 2-10 m x 2-5 cm, with 2-10 trunks, the internodes 2-25 cm long, armed, with 1-10 cm long, flattened, black spines, generally clustered in groups and obliquely pointing downside. Leaves 5-12, erect and arching; sheath 30-60 cm long and petiole 30-60 cm long, terete, flattened above, both greenish brown-lepidote and armed with 0.5-5 cm long, flat, yellowish to brownish spines, darker at base and at tip; rachis green, 1.2-2 m long, basally armed with scattered flat spines; blade pinnate, with 17-30 pinnae per side, oriented in several directions and clearly clustered in 4-8, rather spaced, groups of 2-7; pinnae oblanceolate, slightly sigmoid, long acuminate, 30-75 x 2.5-6 cm, finely tomentose beneath; apical pinnae not wider than others. Inflorescences 1-2, interfoliar; peduncle 15-40 cm long, curved at top, yellowish brown-velvety; prophyll glabrous, 12-30 cm long; peduncular bract 30-50 cm long, fusiform and arched, slightly woody, densely covered by a dark brown, velvety, tomentum, sometimes with a few, scattered, flattened and adpressed, black spines; rachis 3-10 cm long, bearing 8-25 rachillae, 10-20 cm long, \pm drooping when fruiting. Fruits globose, glabrous, 12-18 mm diam., brownish-black at maturity. Fl (Jan, Feb), fr (Mar-Dec); grows in wet places, often on waterlogged soils, along streams, sometimes on slopes; in Saül area, only found on Mts "Galbao".

Bactris oligocarpa Barbosa Rodrigues (pl. 8). Dwarf, single-stemmed plants of understory, with usually only one, very short, unarmed stem 5-30 cm x 5-8 mm, the internodes 1-2 cm long. Leaves 4-8, erect; sheath fibrous, brown-arachnoid-tomentose, 5-12 cm long and petiole 15-45 cm long, both unarmed or sparsely armed with 0.5-2.5 cm long, slender, black spines; rachis 5-20 cm long, unarmed; blade entire and deeply bifid, 20-35 cm wide or pinnate with 2(3) pinnae per side, or entire on one side and pinnate on the other side; pinnae broadly sigmoid, long acuminate, 15-30 x 4-7 cm; apical segments much wider (8-10 cm). Inflorescences 1-3, interfoliar, erect; peduncle 5-8 cm long; prophyll 4-6 cm, glabrous, membranous; peduncular bract 6-12 cm long, erect, fusiform, glabrous; spadix simple, short, 1-2 cm long. Fruits few, ovoid, glabrous, purplish, 10-15 x 12-20 mm, arranged in a globose head. Fl (Jan), fr (Mar-Sep); common everywhere, on well drained slopes.

Bactris pliniana de Granville & Henderson (pl. 6). Medium-sized, multi-stemmed plants of understory, with 2-6 trunks 1.5-3 m x 2.5-5 cm, the internodes 2-12 cm long, armed with 1-4 cm long black spines. Leaves 6-12, erect; sheath 15-80 cm long, brownish green, densely armed with 1-5 cm long black spines; petiole 20-120 cm long, yellowish green, terete, canaliculate above, armed with black spines to 7 cm long; rachis 0.8-2.5 m long, basally armed with black spines; blade ragged, pinnate, with 12-30 pinnae per side, oriented in several directions and clustered in groups of 2-7; pinnae oblanceolate to sigmoid, long acuminate, 20-60 x 3-7 cm; segments of apical pair usually much wider (6-16 cm). Inflorescences 1-2, interfoliar, arching; peduncle strongly recurved, 9-25 cm long; prophyll flattened, sometimes spinulose at apex, 8-20 x 3-5 cm; peduncular bract 20-38 cm long, usually strongly recurved, densely covered with up to 1 cm long dark brown soft hairs, intermixed with yellowish hairs, in particular in lower half; rachis 3-6 cm long, bearing many 5-15 cm long, slender rachillas. Fruits globose, setose, \pm 2 cm diam., orange to bright red at maturity. Fl (Jun-Nov), fr (Dec-May); only found in swamp forest, in particular along "Crique Cochon". **Zagrinette, ti-wara.**

Bactris raphidacantha Wessels Boer (pl. 7). Medium-sized, single- or multi-stemmed plants of understory, with 1-3, almost inconspicuous, trunks sometimes to 1 m tall, 5-8 cm diam., unarmed or with rings of 1-3 cm long, slightly flattened, black spines, soon deciduous; internodes very short, 0.5-2 cm long (trunks ringed by dense prominent leaf scars). Leaves 8-15, big, obliquely erect and \pm forming a funnel-shaped, litter-collecting crown like in *Astrocaryum*; sheath 40-60 cm long, densely armed with 0.5-6 cm long, terete, black spines; petiole 0.4-1 m long, terete, canaliculate above, brown-lepidote, unarmed or with scattered, up to 12 cm long, erect, black spines, as well as base of rachis; rachis 1.7-3 m long; blade pinnate, with 25-40 pinnae per side, inserted at regular intervals; pinnae straight and narrow, linear-lanceolate, 25-85 x 1-4.5 cm; segments of apical pair usually wider than others (2-8





Bactris humilis

Bactris raphidacantha

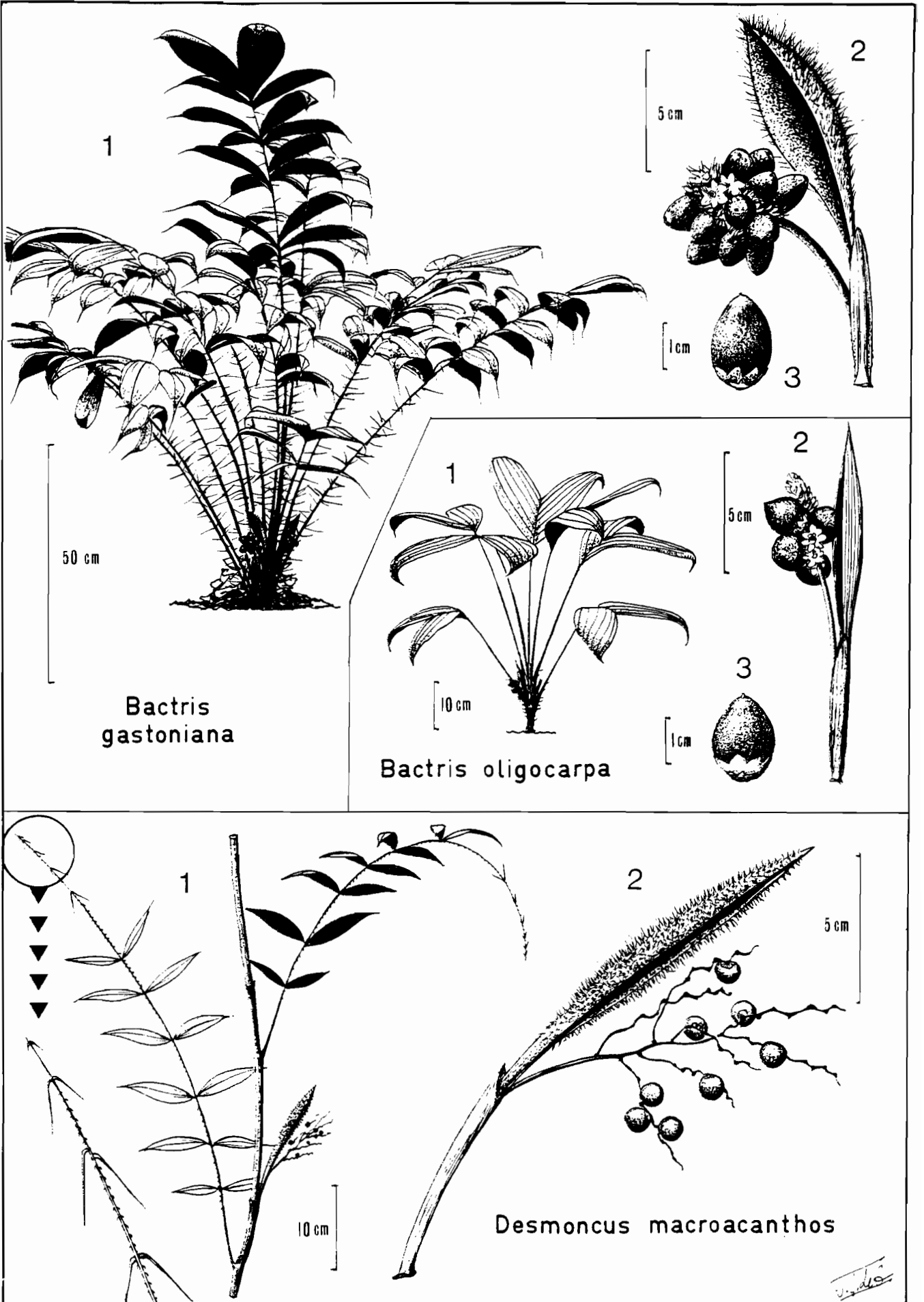
cm). Inflorescences 1-3, interfoliar, congested at leaf bases; peduncle 6-20 cm long, brown-lepidote and setose, strongly recurved; prophyll 6-17 cm long, strongly flattened, dark brown-arachnoid-tomentose; peduncular bract 20-35 cm long, densely covered with 5-20 mm long, slender, more or less adpressed, black prickles; rachis 2-7 cm long, bearing many, 4-8 cm long, slender rachillae. Fruit globose, setose, 10-12 mm diam., densely congested, orange to bright red at maturity. Fl and fr throughout year; very common everywhere, mostly on well drained slopes. **Ti-wara.**

Bactris simplicifrons Martius (pl. 3). Tiny, single- or multi-stemmed plants of understory, 0.5-2 m x 3-8 mm, with 1-5, very slender, unarmed stems, the internodes 2-12 cm long. Leaves 3-8, ± spirally arranged in upper part of stem; sheath 10-15 cm long tubular, whitish tomentose-arachnoid at base, unarmed or, very rarely armed with 3-8 mm long, black prickles; petiole slender, green, 20-45 cm long; rachis 2-30 cm long; blade either entire and deeply bifid (V-shaped) or pinnate, with 2-10 pinnae per side; pinnae membranous, elliptic to oblanceolate, clearly sigmoid, acuminate, at irregular intervals but all in single plane, 10-30 x 1-5 cm; apical segments much wider (5-9 cm, up to 12 cm in bifid leaves). Inflorescences 1-4, infrafoliar, recurved, simple or bifid; peduncle 2-4 cm long, curved, whitish arachnoid-tomentose when young; prophyll membranous, 2-4 cm long; peduncular bract 5-10 cm long, fusiform, glabrous and unarmed; 1 or 2 slender rachillae, 1.5-5 cm long, pointing downside. Fruits few, globose, glabrous, 6-8 mm diam., yellowish green, becoming orange and red at maturity. Fl (Jul-Dec), fr (Jan-May); common on all kinds of drained soils; the pinnate-leaves variety is much more common than the bifid-leaves variety in Saül area.

DESMONCUS Martius

Monoecious, climbing lianas of understory. Stem slender, elongate, flexuous. Leaves spaced, distichous, pinnate, with long tubular sheaths prolonged into a long ocrea, armed with short retrorse spines, as well as rachis. Pinnae opposite, elliptic-lanceolate, acuminate, the distal pairs transformed into long retrorse hooks decreasing in size up to apex (acanthophylls). Inflorescence interfoliar, once branched; peduncular bract armed with short, basally swollen, spines. Rachillae few, slender, bearing triads of one pistillate and 2 staminate flowers; apical part with staminate flowers only. Fruits small, globose and smooth, red at maturity, one-seeded.

Desmoncus macroacanthos Martius (pl.)8. Slender climbing lianas of understory, with stem 4-8 cm diam, flexuous, unarmed but covered by persistent, often spiny leaf-sheaths and ochreas. Leaves distichous, 10-30 cm each from other; sheath long tubular, with a 4-8 cm long ocrea; rachis 45-95 cm long, including petiole and cirrus, densely or sparsely armed, as well as sheath and ochrea, by 1-3 mm long, retrorse, black spinelets; sheath and ocrea often unarmed; 4-8 pairs of elliptic-lanceolate pinnae, 6-20 x 1.5-5 cm; cirrus with 4-5 pairs of slender, recurved hooks. Inflorescences 1-3, axillary, erect; prophyll 6-10 cm long, tubular, glabrous, membranous; peduncular bract 12-20 cm long, with a visible part 6-20 cm long, fusiform, densely covered by 1-3 mm long, swollen-based, erect, pale greyish-brown to black prickles; peduncle about 15 cm long or more, hidden by the sheaths; rachis 5-9 cm long, bearing 4-10, slender, flexuous rachillae, 2-3 cm long. Fruit globose, glabrous, 8-12 mm in diameter, first green, becoming yellow, then orange and finally bright red at maturity. Fl and fr throughout year; infrequent in Saül area; only one collection from Mts "La Fumée".



Bactris gastoniana

Bactris oligocarpa

Desmoncus macroacanthos

EUTERPE Martius

Tall, slender, multi-stemmed or single-stemmed, unarmed, monoecious, canopy plants. Leaves pinnate, with pinnae straight, linear-lanceolate, \pm pendulous, inserted at regular intervals. Inflorescences 1-2 per plant, infrafoliar at anthesis, once branched; prophyll and peduncular bract tubular, caducous; rachillae numerous, whitish tomentose, spreading in all directions, becoming \pm pendulous when fruiting, bearing triads of one pistillate and 2 staminate flowers, spirally arranged, the apical part usually with pistillate flowers only. Fruits small, globose, black at maturity, one-seeded.

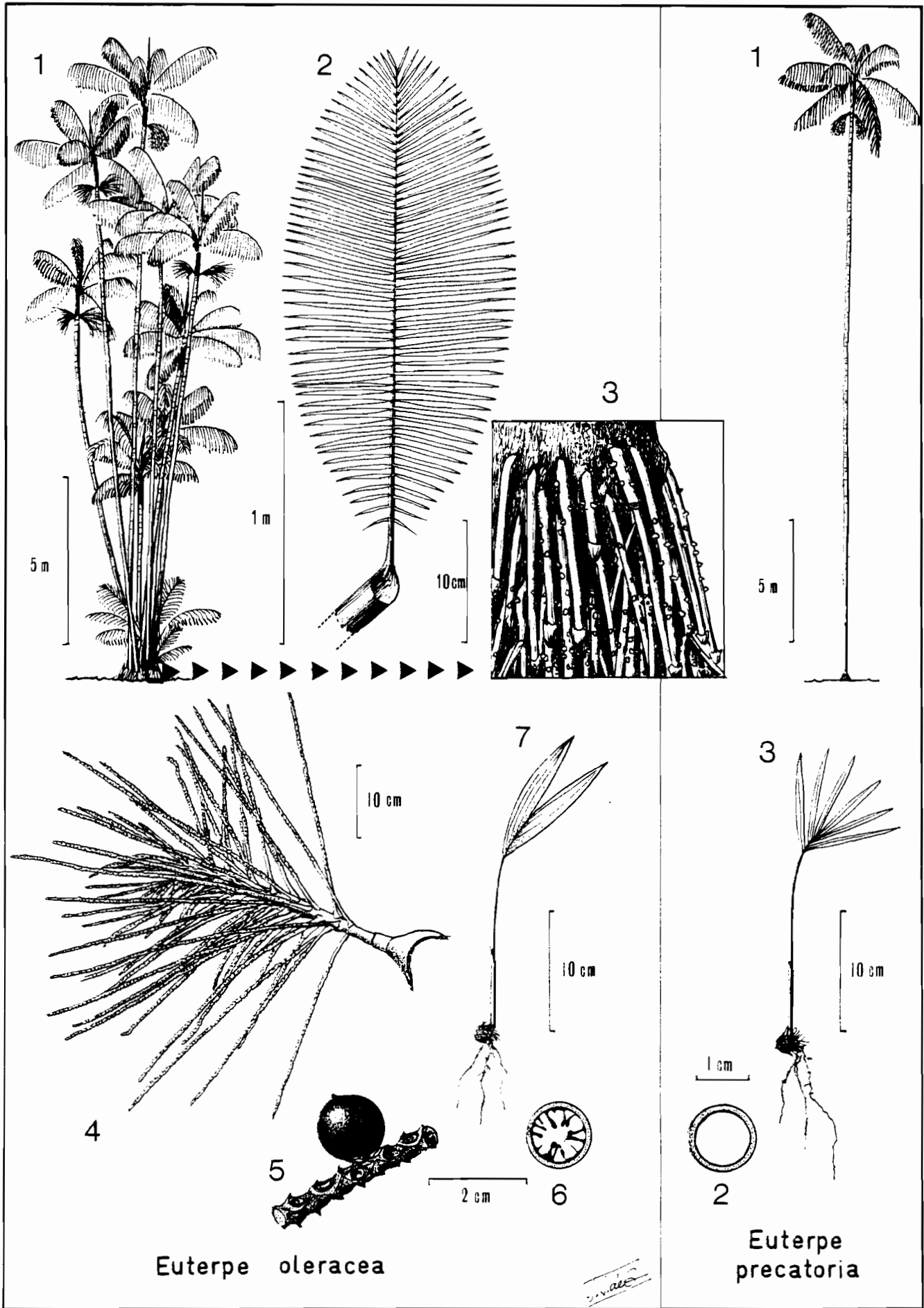
1. Multi-stemmed ("clustered") plants suckering at base, growing in swampy places. Seeds with endosperm ruminant. Eophyll bifid. *E. oleracea*.
1. Single-stemmed ("solitary") plants never suckering at base. Seeds with endosperm homogeneous. Eophyll pinnate. *E. precatória*.

Euterpe oleracea Martius (pl. 9). Tall, multi-stemmed, canopy plants, with 1 to many trunks to 20 m tall, 12-18 cm diam., usually forming large clumps with basal shoots and dense, conical mass of bright red roots, with white pneumatorrhizae, at base, the internodes hardly visible. Leaves 8-14, erect, then spread, with drooping leaflets; sheath tubular, glabrous, membranous, 0.9-1.2 m long, prolonging trunk, under crown, by a smooth green to reddish cylindrical crownshaft; petiole 10-20 cm long, curved, green, convex below, concave above; rachis 2-2.5 m long, with 50-60 pinnae per side, at regular intervals; pinnae yellowish-green, straight, linear, \pm pendulous, 1-3 x 35-100 cm. Inflorescence pointing horizontally; peduncle 10-15 cm long, green, glabrous, subconical; prophyll 50-70 cm long and peduncular bract 60-100 cm long, both brown, membranous and early deciduous; rachis 20-50 cm long, whitish-lepidote bearing 60-130, white-tomentose, rachillae, 20-60 cm long. Fruits globose, glabrous, smooth, 10-15 mm diam., purplish-black at maturity. Fl and fr throughout year; very common in swamp forest and along creeks. "Pinot", "wassai".

Euterpe precatória Martius (pl. 9). Tall, single-stemmed, canopy plants, with trunk solitary to 25 m tall, 15-25 cm diam., with conical mass of red roots at base, the internodes hardly visible. Leaves 13-16, erect, then spread, with drooping leaflets; sheath tubular, glabrous, membranous, 1-1.5 m long, prolonging the trunk, under crown, by a smooth, glaucous-green cylindrical crownshaft; petiole 30-50 cm long, curved, greyish-green, convex below, concave above; rachis 2-3.5 m long, with 60-90 pinnae per side, at regular intervals; pinnae glaucous above, straight, linear, pendulous, 2-3 x 35-120 cm. Inflorescence pointing horizontally; peduncle 15-20 cm long, greyish-green, glabrous; prophyll \pm 70 cm long and peduncular bract about 1 m long, both brown-membranous and early deciduous; rachis 40-50 cm long, whitish-lepidote, bearing 80-130, white tomentose, 50-70 cm long rachillae. Fruits globose, glabrous, smooth, 10-15 mm diam., purplish-black at maturity. Infrequent, growing usually along creeks but not in permanently flooded places; only once collected on Mts "La Fumée". "Pinot", "wassai".

GEONOMA Willdenow

Small to dwarf, multi- or single-stemmed, unarmed, monoecious plants of understory. The stem slender, with prominent leaf scars, often suckering at base. Leaves small, entire and bifid at apex or irregularly divided into few broad segments, rarely pinnate (*G. maxima*), the blade always green and glabrous on both sides. Inflorescences 1-6 per plant, inter- or infrafoliar, once or twice branched, rarely spicate; prophyll and peduncular bract membranous to leathery, often deciduous; rachillae few, bearing triads of one pistillate and 2 staminate flowers inserted in deep alveoles spirally disposed, usually orange or red when fruiting. Fruits



Euterpe oleracea

Euterpe precatoria

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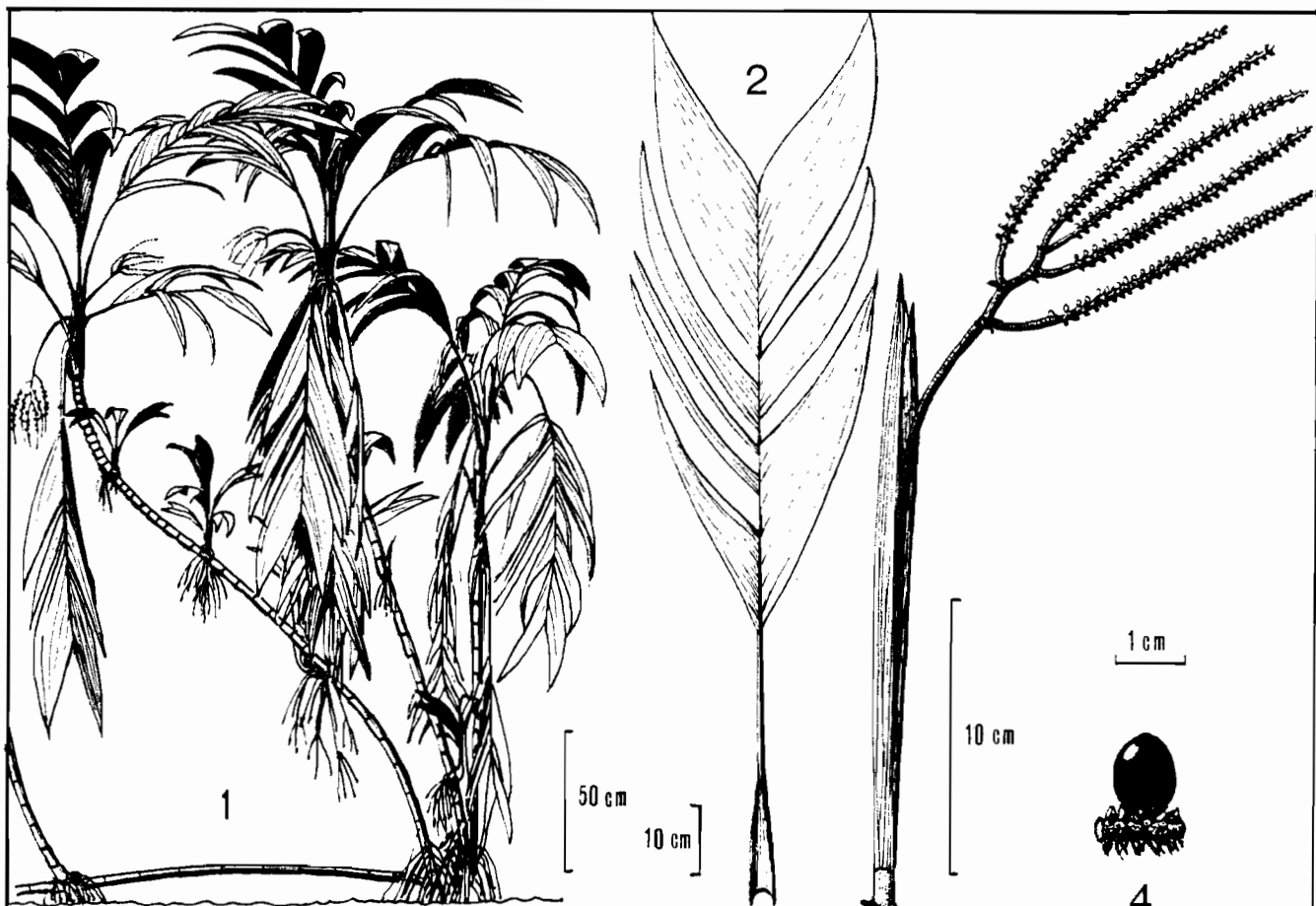
small to very small, globose to ovoid, smooth, glabrous, black or bluish black at maturity, one seeded.

1. Blade regularly pinnate with 10-22 pairs of pinnae. *G. maxima*.
1. Blade entire and bifid at apex, or irregularly divided into 2-6 pairs of broad segments.
 2. Dwarf plants, the stem 0.5-1 cm diam. Blade usually < 20 cm in width.
 3. Blade always entire and bifid at apex. Inflorescence spicate. . . . *G. stricta*.
 3. Blade with 3 pairs of segments. Inflorescence branched. *G. deversa*.
 2. Small to medium-sized plants, the stem 1-3 cm diam. Blade usually > 20 cm in width.
 4. Stem very short, generally < 1 m tall. Blade usually twice as long as wide, with 3 pairs of segments. Species restricted to summit of Galbao Mountains. *G. euspatha*.
 4. Stem usually > 1 m tall. Blade much longer than wide, entire or irregularly divided into few broad segments.
 5. Stem solitary, erect, with short internodes (0.5 to 1.5 cm), not suckering. Leaves 15-20, with petiole (including sheath) 15-30 cm long. Plant growing in submontane forest, on Galbao Mountains. *G. umbraculiformis*.
 5. Stems in clump, with basal and lateral shoots and long internodes (2-10 cm); the longest canes bend down to ground and produce suckers after rooting. Leaves 5-15, with petiole (including sheath) 30-50 cm long. Plants growing in swamp forest at low elevation. *G. baculifera*.

Geonoma baculifera (Poiteau) Kunth (pl. 10). Small, multi-stemmed plants of understory, with 1-3 stems 1-3 m x 1.3-2 cm, often prostrate at base, smooth, ringed by prominent leaf scars, 2-10 cm apart; suckers with bundle of roots arise from base and from vegetative buds occurring on stem every 6 internodes, when longest canes bend down to ground, producing new plants. Leaves 3-14, basally erect, arching; sheath 15-20 cm long, at first creamy lepidote and tubular, splitting soon opposite to petiole; petiole 20-30 cm long, green; rachis 45-80 cm long; blade either entire and deeply bifid at apex, 20-30 x 70-90 cm, or irregularly pinnatisect into few broad segments. Inflorescences 1-3 per plant, interfoliar, once branched ± drooping when fruiting; peduncle 17-35 cm long, curved; prophyll and peduncular bract ± equal in size, 15-30 cm long, tubular, subchartaceous, persistent; rachis 2-10 cm long, bearing 4-7 rachillae, 10-20 cm long, slightly curved, green at anthesis, orange to bright red in fruits. Fruits ovoid to ellipsoid, 8-10 x 10-13 mm, black at maturity. Fl and fr throughout year; grows usually in dense, clonal, populations, in swamp forest only. **Wai, wai-cochon.**

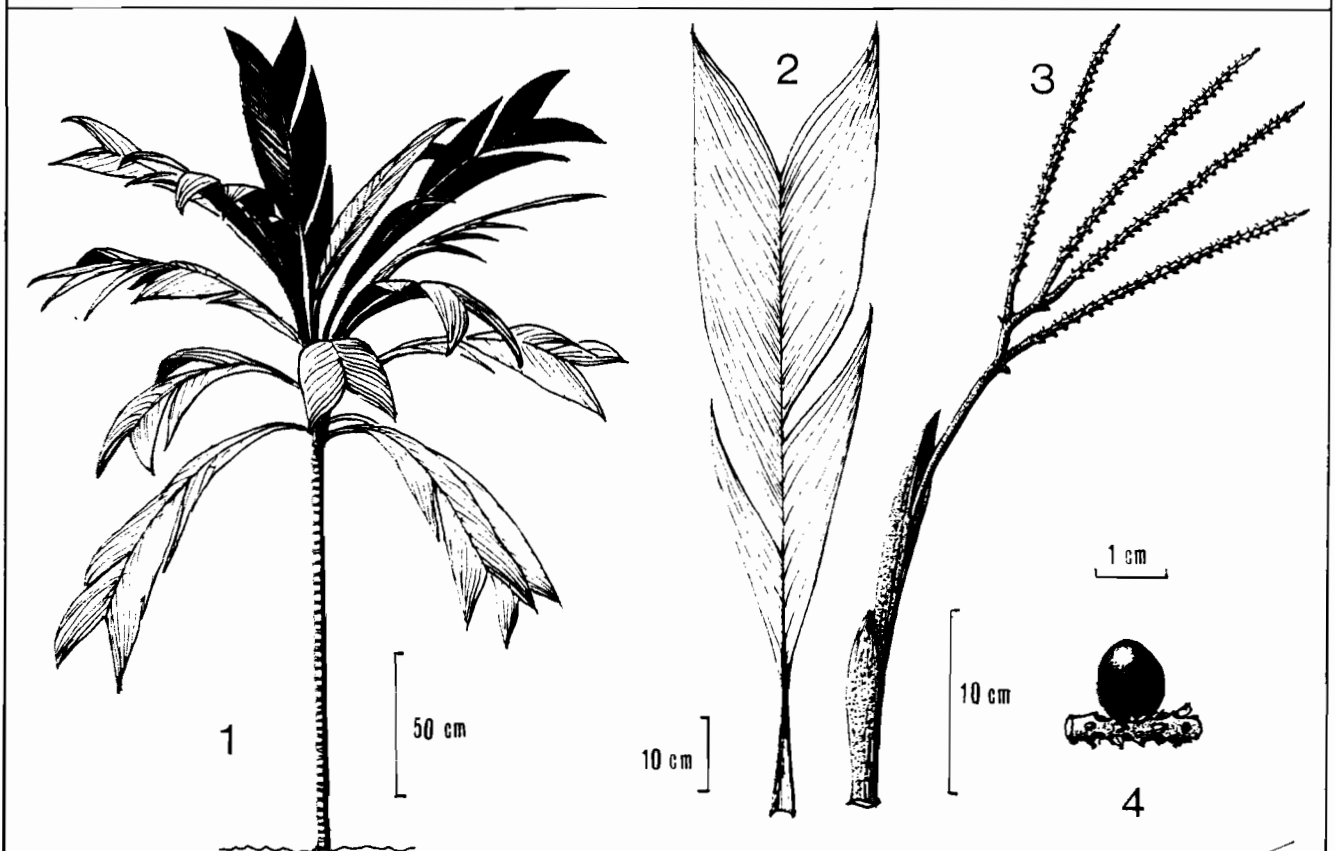
Geonoma deversa (Poiteau) Kunth (pl. 11). Small, multi-stemmed, plants of understory, with 1-3 stems 4-10 mm x 0.3-2 m, the internodes 1-6 cm long. Leaves 5-15, spirally arranged along upper part of stem; sheath 5-15 cm long; petiole 8-35 cm long; blade pinnatisect, bifid at apex, 8-30 x 25-55 cm, the rachis 18-40 cm long; segments usually 3 per side, opposite, 2-6 cm in width, sigmoid, long acuminate. Inflorescences 1-3 per plant, infrafoliar, usually once branched, at first erect, then ± horizontally spreading; peduncle 6-15 cm long, brown lepidote, with prophyll and peduncular bract small, swollen, brownish lepidote, 2.5-5 cm long, deciduous at anthesis; rachis 1-8 cm long, bearing 3-6(10) rachillae, twisted in bud, then ± flexuous, 8-17 cm long, green at anthesis, turning dark red in fruits. Fruits globose, ± 6 mm diam, black at maturity. Fl and fr throughout year; occurs mostly on lowest part of slopes and along streams, on wet, clayey, but never inundated soils; uncommon in Saül area (only once found, along Route de Bélizon).

Geonoma euspatha Burret (pl. 11). Small, single-stemmed or stemless plants of understory, the stem 0-1.5 (rarely more) m tall, 1-2.5 cm diam, with close internodes, 0.3-1 cm long. Leaves 4-12, erect; sheath 15-20 cm long, fibrous; petiole 40-70 cm long; blade irregularly



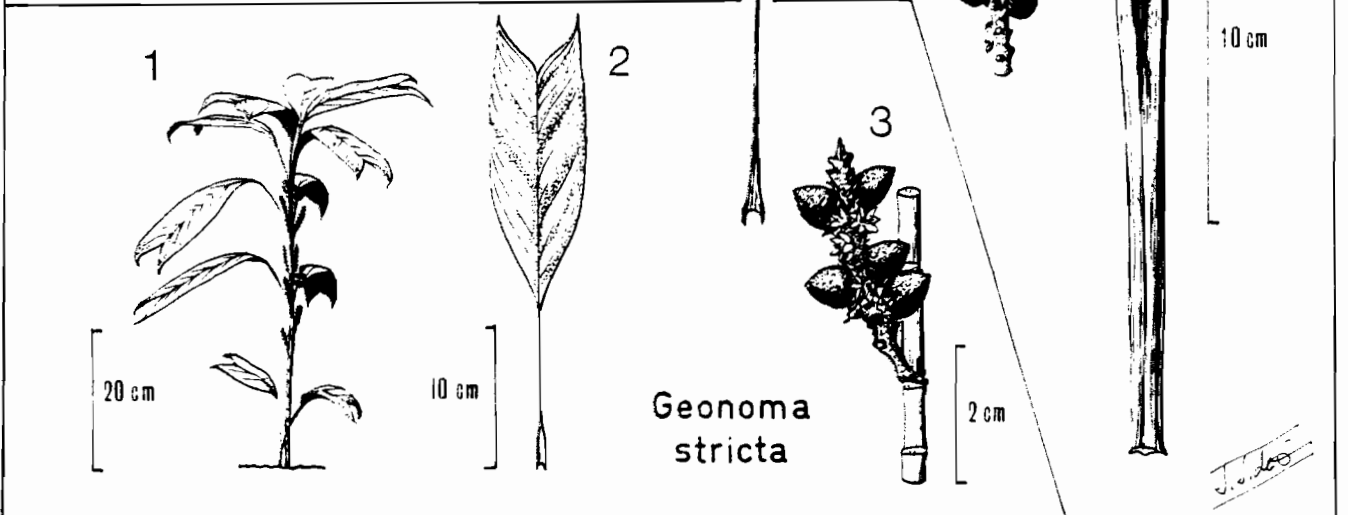
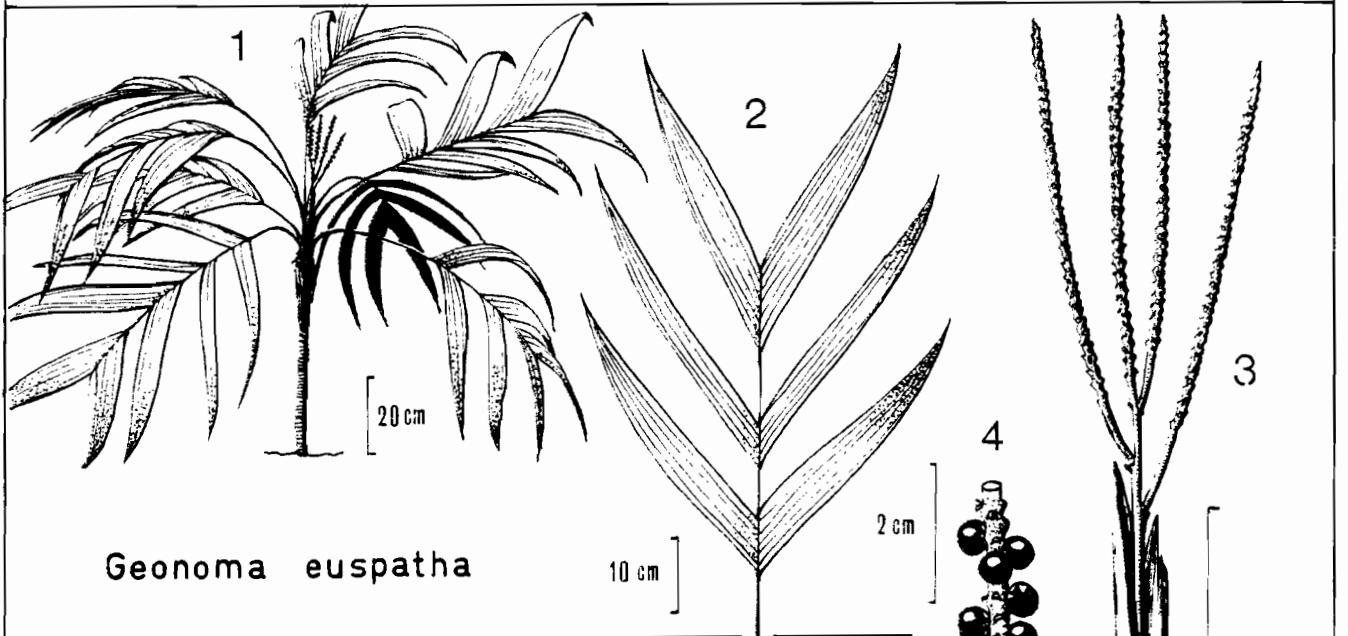
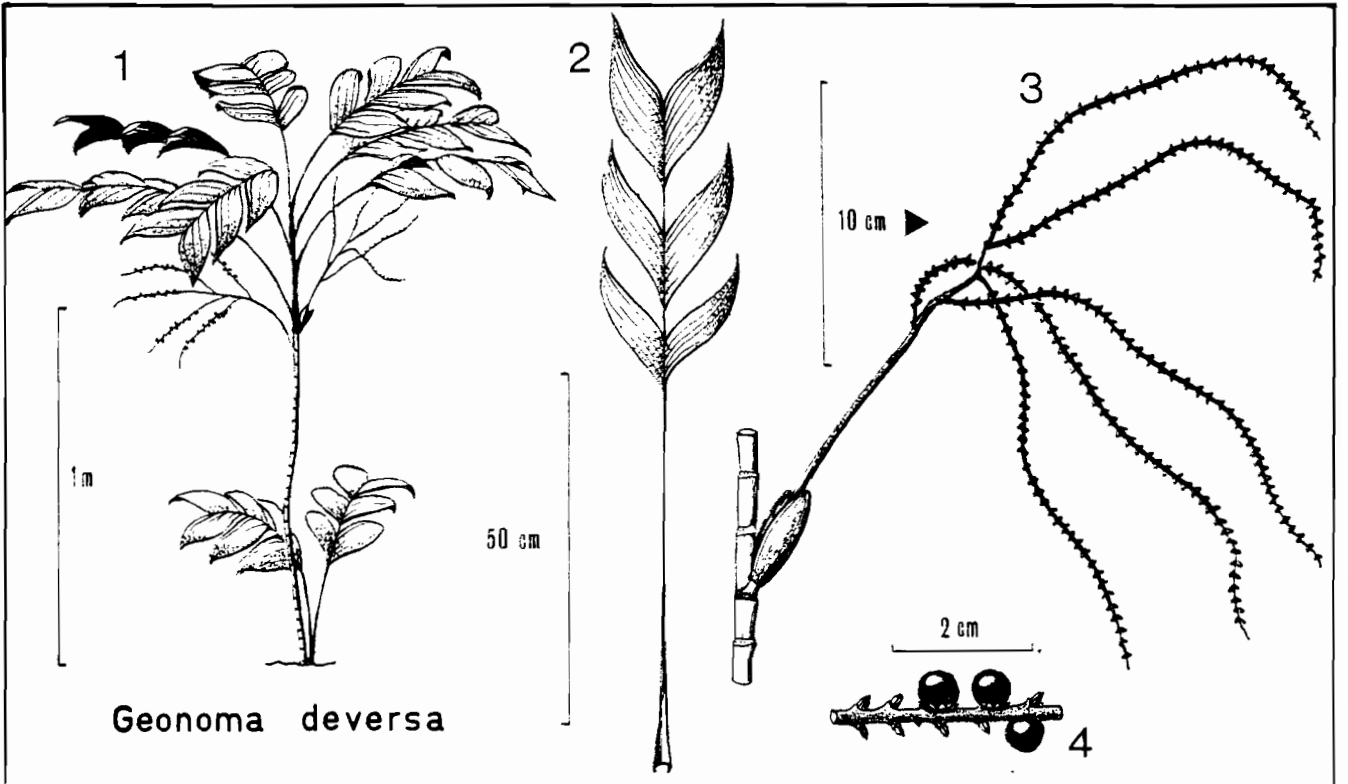
Geonoma baculifera

3



Geonoma umbraculiformis

J. L. de S.



pinnatisect, 30-60 x 60-100 cm, the rachis 25-60 cm long; segments 2-7 (usually 3, subopposite) per side, 3-10 x 30-55 cm, straight to slightly falcate, acuminate. Inflorescences 1-2 per plant, interfoliar, once or twice branched, erect between leaf sheaths; peduncle 10-40 cm long, green, with prophyll and peduncular bract membranous, tubular, persistent, 10-30 cm long; rachis 1-12 cm long, bearing 2-15 rachillae, those of base sometimes branched, straight, 6-20 cm long, green at anthesis, turning red in fruits. Fruits globose, shiny, 5-7 mm diam., green, becoming black at maturity. Fl (Jun-Dec), fr (Dec-May); occurs only in submontane forest, at elevation usually > 500 m (Mt. Galbao), on clayey soils.

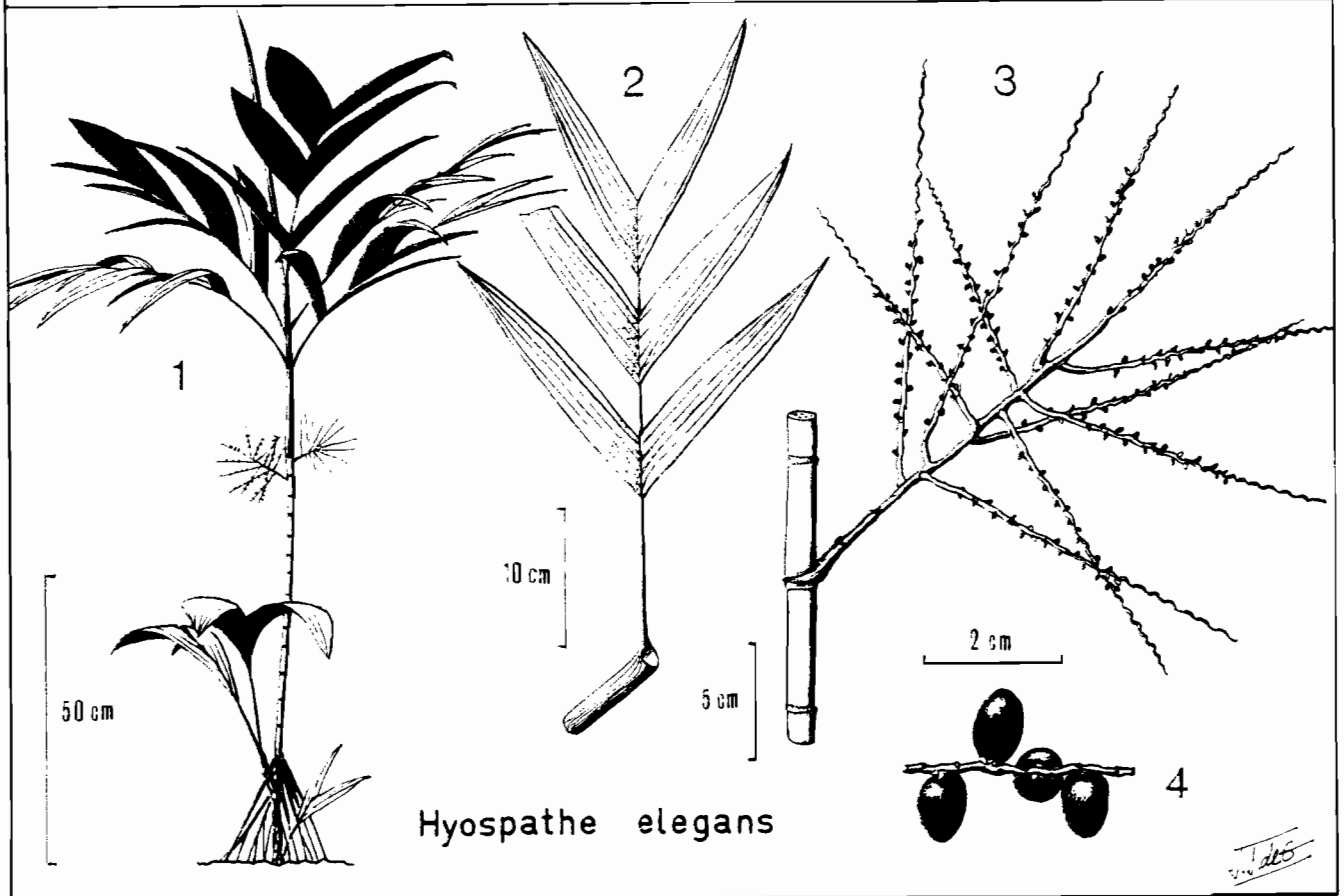
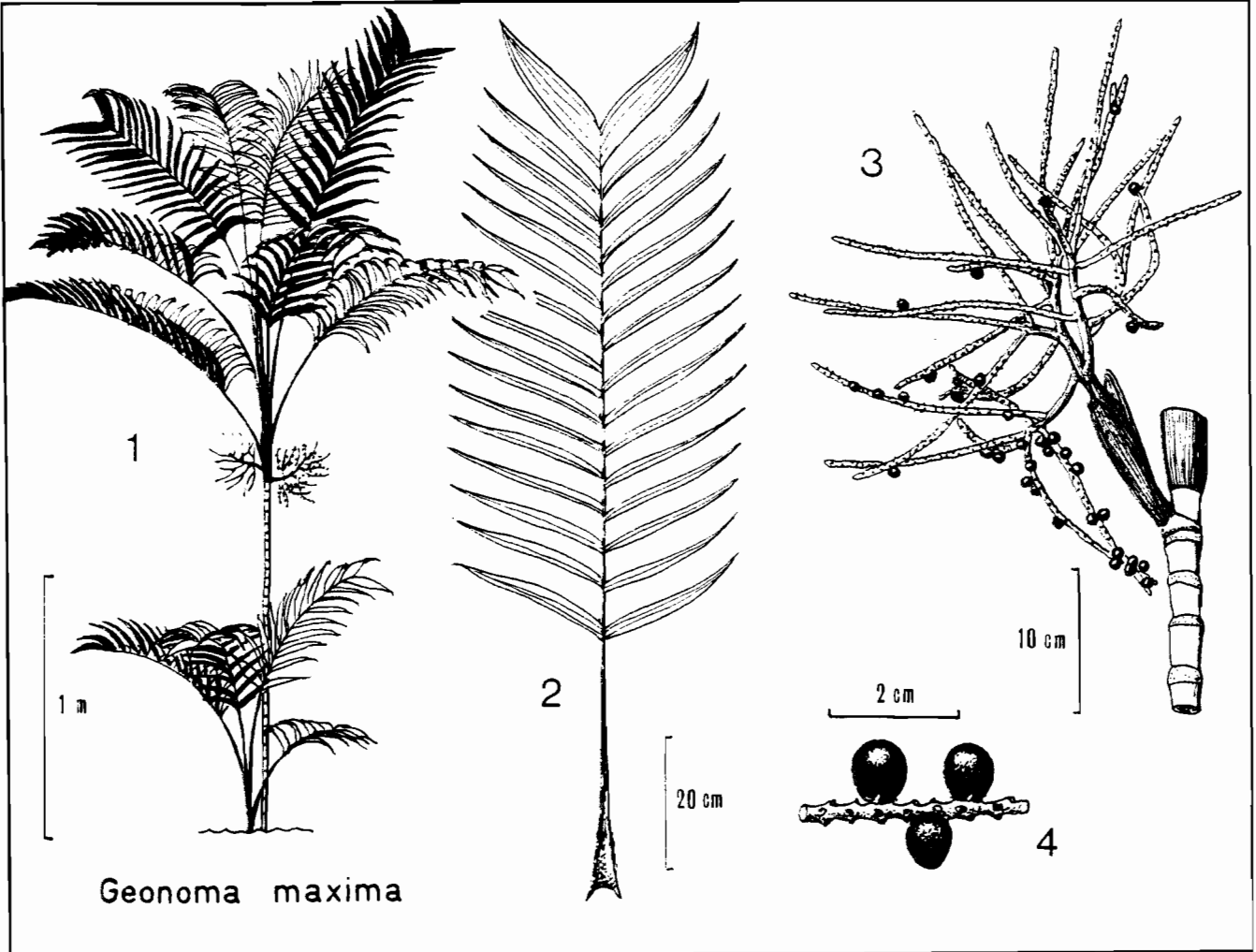
Geonoma maxima (Poiteau) Kunth (pl. 12). Small to medium-sized, multi-stemmed plants of understory, 2-8 m x 15-30 mm, with 1-3 stems prominently ringed by leaf scars, and few basal suckers, the internodes 1-18 cm long. Leaves 6-12, erect and arching; sheath 10-15 cm long, brownish lepidote, fibrous at margins; petiole 30-70 cm long, flat or grooved above, rounded below; rachis 0.5-1 m long, green; blade pinnate, 40-60 x 70-120 cm, with 13-25 pinnae per side, all in single plane, at regular intervals (very rarely blade irregularly pinnatisect); pinnae \pm sigmoid, acuminate, 28-45 x 1.5-3 cm; basal pinnae slightly wider 3.5-5 cm; apical pinnae much wider (4-13 cm). Inflorescences 1 (rarely 2) per plant, infrafoliar, twice branched; peduncle 5-15 cm long, with prophyll \pm 10 cm long and peduncular bract 11-16 cm long, both membranous to subcoriaceous, brown lepidote, deciduous after anthesis; rachis flexuous, 4-16 cm long, with 9-50 rachillae, the basal ones branched, slightly curved, green at anthesis, turning orange in fruit. Fruits subglobose to slightly ovoid, 5-9 mm diam, green, becoming bluish-black at maturity. Fl (Sep-Dec), fr (Jan-Jun); never abundant but found everywhere, principally on well drained slopes.

Geonoma stricta (Poiteau) Kunth (pl. 11). Dwarf, single- or multi-stemmed plants of understory, with 1-2 slender stems, 4-6 mm x 20-100 cm, the internodes 2-4.5 cm long. Leaves 5-15, spirally arranged along upper part of stem; petiole, including sheath, 6-15 cm long, erect; blade oblanceolate, always entire, bifurcate at apex, 5-9 x 17-27 cm, horizontally spreading. Inflorescences 2-6 per plant, interfoliar, (1 per leaf axil), erect; peduncle 1-2 cm long with prophyll and peduncular bract membranous, short, hardly visible; spadix simple, villose, 2-4 cm long. Fruits ovoid, pointed at apex, 5-6 x 8-10 mm, dark blue at maturity. Fl and fr throughout year; occurs everywhere, except on waterlogged soils, but never abundant.

Geonoma unbraculiformis Wessels Boer (pl. 10). Small, single-stemmed plants of understory, with trunk 2-3 cm x 1.5-3 m, the internodes 0.5-1.5 cm long. Leaves 12-25, forming \pm umbrella-shaped crown; petiole, including sheath, 15-30 cm long and rachis 60-100 cm long, both brown arachnoid-tomentose, as well as lateral veins abaxially; blade oblong to oblanceolate, entire or irregularly pinnatisect, bifid at apex, 20-30 x 80-120 cm. Inflorescences 1-2 per plant, interfoliar, pendulous in fruit, with same indument as leaves; peduncle 30-45 cm long, curved; prophyll 8-15 cm long and peduncular bract 20-30 cm long, tubular, membranous, persistent; rachis 2-4 cm long, bearing 1-4 rachillae, 12-24 cm long, green turning orange in fruit. Fruit ovoid, 8-10 x 10-15 mm, black at maturity. Fl. and fr. throughout year; grows in cloud forest at middle elevation, on wet clayey soils, mostly on table top mountains (Mt Galbao).

HYOSPATHE Martius

Small, multi-stemmed, unarmed, monoecious plants of understory, with *Geonoma* habit, the stem slender, solitary or few, ringed with leaf scars, suckering at base. Leaves with tubular sheath, never splitting opposite to petiole like in *Geonoma*; blade divided into few (usually 3) pairs of broad segments. Inflorescence infrafoliar, once branched, with deciduous prophyll and peduncular bract; rachillae very slender, straight and spreading in all directions, bearing spirally arranged triads of 1 pistillate and 2 staminate flowers; the distal part with male flowers only. Infrutescence with red rachillae; fruits small, one-seeded, black at maturity.



at5

Hyospathe elegans Martius (pl. 12). Small, multi-stemmed plants, 1-3 m x 8-20 mm, with 1-3 stems (rarely more), suckering and producing aerial roots at base, the internodes 2-10 cm long. Leaves 3-9, spreading; sheath 12-22 cm long, green, striate, tubular, membranous; petiole 13-25 cm long, green, hemi-cylindrical; rachis 20-55 cm long; blade green and glabrous on both sides, with (2)3-4(8) segments per side, subopposite, in single plane, 24-52 cm long, (1)3-10 cm in width, slightly sigmoid, acuminate. Inflorescences 1-3 per plant, obliquely erect below leaves; peduncle 2-8 cm; prophyll 15-22 cm long, slightly winged at margins, peduncular bract 18-23 cm long, striate, both tubular, membranous, deciduous before anthesis; rachis 3-8 cm long, bearing 8-17 slender rachillae, 10-25 cm long, cream at anthesis, turning orange and bright red in fruits. Fruits ellipsoid to ovoid, glabrous, smooth, 6-10 x 10-15 mm, green, becoming black at maturity. Fl (Apr-Sep), fr (Oct-Mar); rather common, on all types of soils and drainage. **Wai, mâle-wai.**

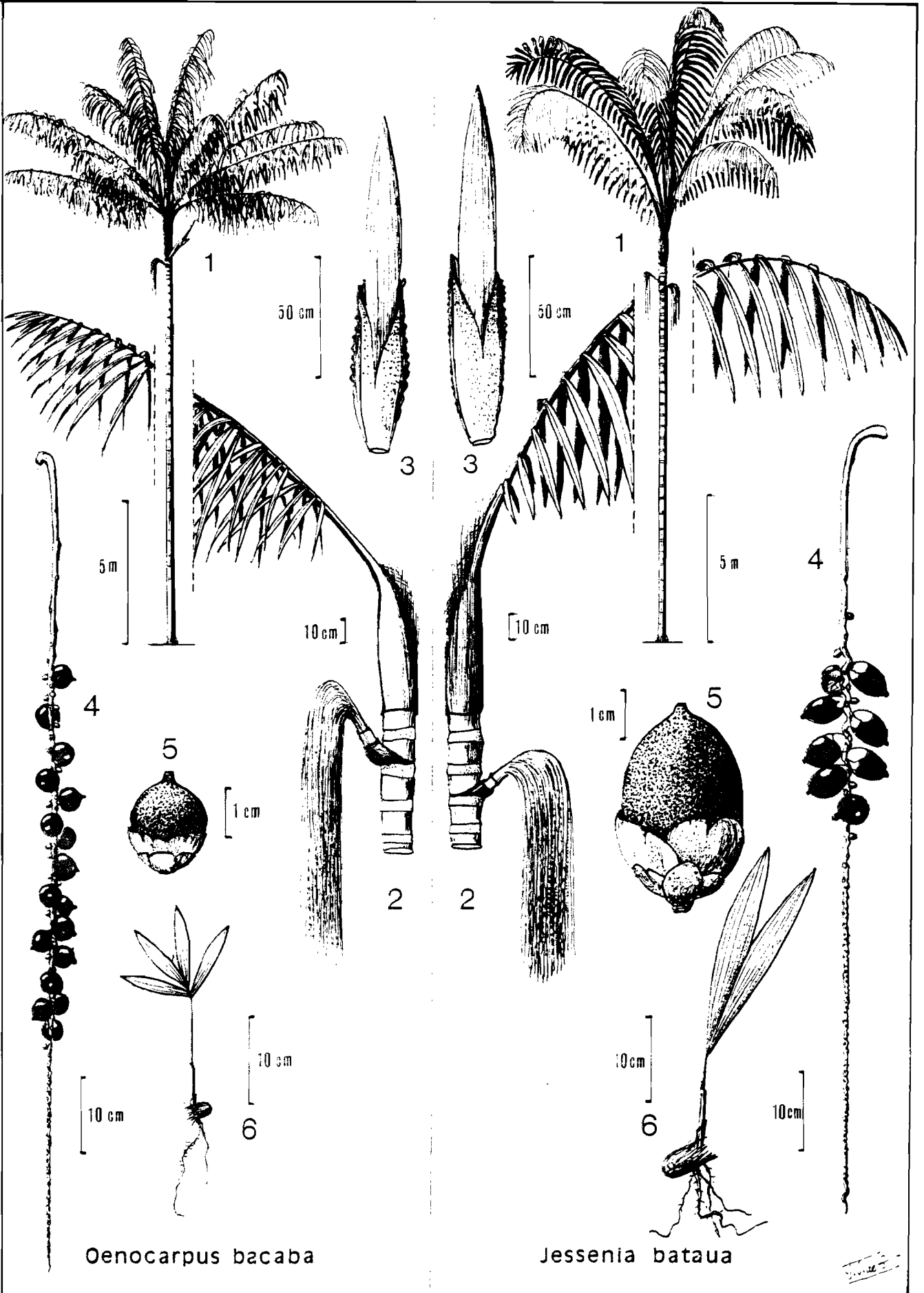
JESSENIA H. Karsten

Tall, single-stemmed, unarmed, monoecious, canopy plants. Leaves regularly pinnate; blade whitish pruinose beneath, green above. Inflorescence infrafoliar, hippuriform (in shape of "horse-tail"), once branched, with many long, pendulous, rachillae; prophyll and peduncular bract woody, deciduous before anthesis; proximal part of rachillae with spirally arranged triads of 1 pistillate and 2 staminate flowers; distal part densely covered with pairs of staminate flowers. Fruits medium-sized, ellipsoidal, smooth, purplish black at maturity, with enlarged, persistent, cupular periant.

Jessenia bataua (Martius) Burret subsp. *oligocarpa* (Grisebach & H. Wendland) Balick (pl. 13). Tall, single-stemmed, canopy plants, with trunk columnar, smooth, often dark purplish-brown at apex, to 20 m tall, 15-30 cm diam., the internodes 10-65 cm long. Leaves 8-16, erect and arching; sheath 0.6-1.4 m long, green outside, purplish-brown inside, very fibrous at margins, with ligule 20-35 cm long, opposite to petiole; petiole 20-100 cm long, green, canaliculate above, rounded below; rachis 3-8 m long, bearing 65-108 pinnae per side, inserted in single plane, at regular intervals; pinnae 15-200 x 2-14 cm, arching, linear-lanceolate, the widest in middle of blade. Inflorescences 1-3 per plant; peduncle obliquely erect, green, thick and short, 5-12 cm long, \pm 10 cm diam.; prophyll 60-80 cm long, green; peduncular bract 1-2.3 m long, green, smooth, tubular, acuminate; rachis conical, dark green, 20-40 cm long, bearing many (usually > 200) pendulous rachillae, 0.7-1.2 m long, the pistillate flowers restricted to lower fourth (or less) of rachilla. Fruits ellipsoid, smooth, glabrous, 1.5-2.7 x 2.5-4 cm, dark purple-black at maturity. Fl (Jun-Jan), fr (Sep-May); fairly common, mostly on sandy-clayey soils, on hill slopes and in valleys; East of Saül only (Carbet Maïs, Pic Matécho). **Patawa.**

MAXIMILIANA Martius

Robust, single-stemmed, unarmed, monoecious canopy plants. Leaves very long, erect and arching, pinnate, with pinnae conspicuously arranged in clusters and oriented in several directions; blade green on both sides. Inflorescence interfoliar, massive, once branched, sheltered by a huge, persistent, woody, peduncular bract; bisexual and male inflorescences observed on the same plant; bisexual rachillae with few pistillate flowers scattered in basal part and staminate flowers aggregated in apical part only. Fruits medium sized, ovoid, smooth, light brown at maturity, 1-3 seeded, with enlarged, persistent, cupular periant.



Oenocarpus bacaba

Jessenia bataua

Maximiliana maripa (Correa de Serra) Drude (pl. 14). Tall, single-stemmed, canopy plants, with trunk columnar, smooth, 7-24 m tall, 20-40 cm diam. Leaves 10-15, erect and arching, disposed in 5-7 vertical rows; petiole, including sheath, 1.5-4 m long, robust, green, grooved above, rounded below, sharp at margins; rachis 3.5-8 m long, with 140-260 pinnae per side, obviously arranged in clusters of 2-8, inserted in several planes; pinnae linear-lanceolate, 90-150 x 3-6 cm, drooping at tip. Inflorescences several per plant; peduncle 1-1.5 m long, obliquely erect; prophyll \pm 1 m long, flattened, fibrous; peduncular bract 0.7-1.5 m long, to 40 cm wide, thick, woody, deeply sulcate, long acuminate, persistent for some time below crown; rachis 40-80 cm long, bearing many (usually > 200) rachillae, the male ones 12-23 cm long, the bisexual ones 20-30 cm long. Fruits many, congested, ovoid, with persistent stigmas at apex, 4-8 x 2-3 cm, light brown at maturity, the cupule \pm 2-3 cm high; occurs on all types of soils and drainage, never abundant in primary forest. **Maripa.**

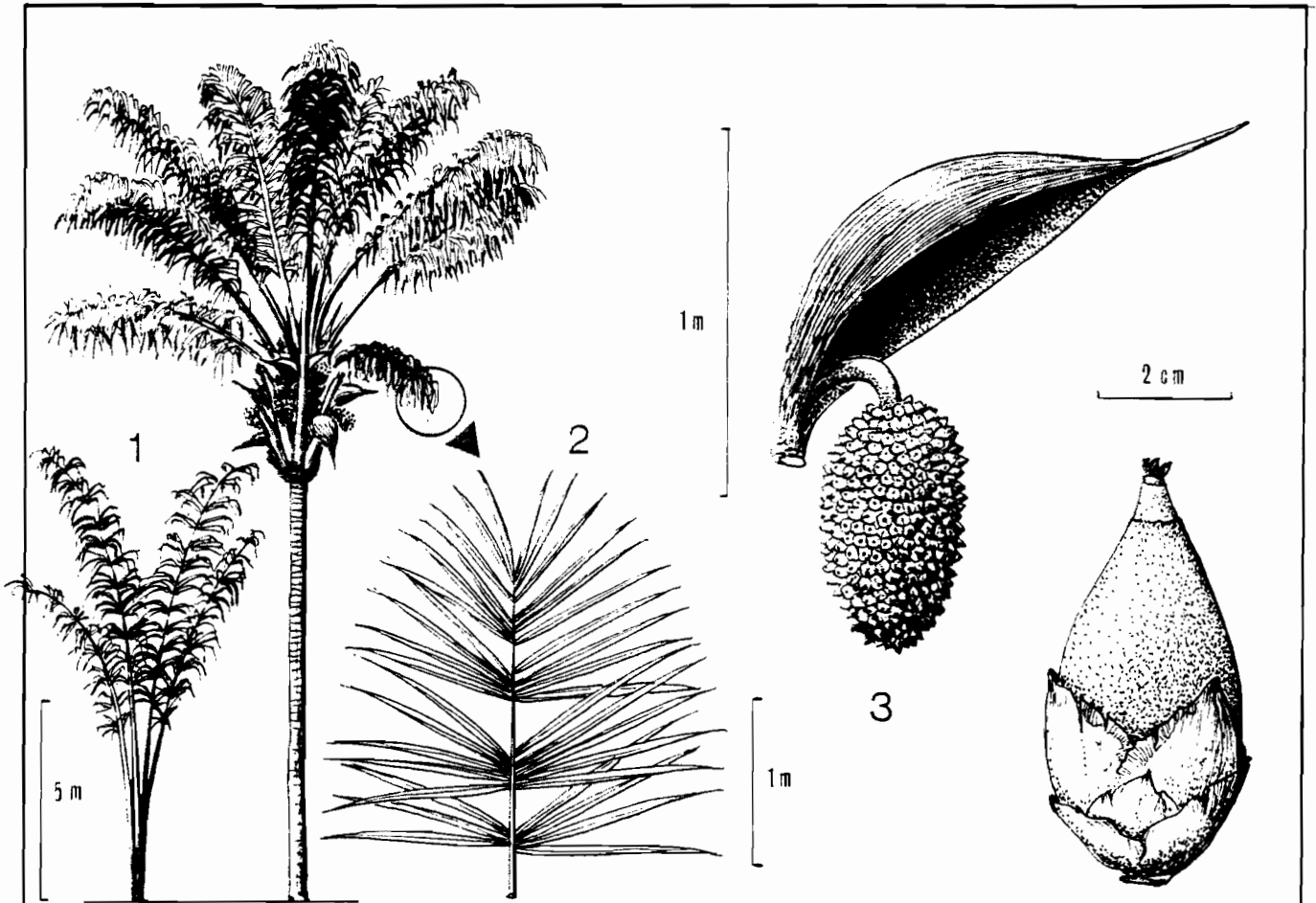
OENOCARPUS Martius

Tall, single-stemmed, unarmed, monoecious canopy plants. Leaves pinnate with pinnae clustered in groups and oriented in several planes in lower part of blade, regularly spaced and in single plane in distal part; blade green on both sides. Inflorescences infrafoliar, hippuriform (in shape of "horse-tail"), once branched, with many long, pendulous, rachillae; prophyll and peduncular bract woody, deciduous before anthesis; rachillae bearing triads of 1 pistillate and 2 staminate flowers spirally arranged, the most distal part with male flowers only. Fruits small, globose, smooth, purplish black at maturity, one seeded.

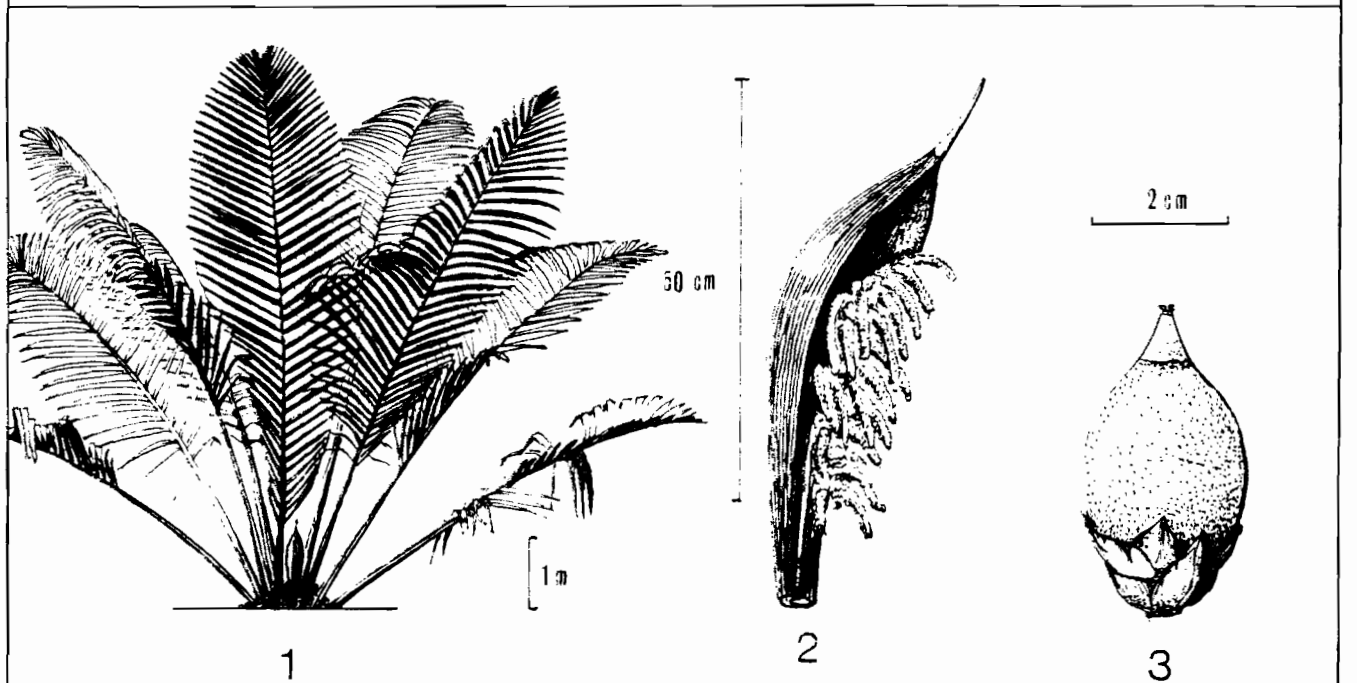
Oenocarpus bacaba Martius (pl. 13). Tall, single-stemmed, canopy plants, with trunk columnar, smooth, to 25 m tall, 15-25 cm diam, with aerial, reddish roots at base, the internodes 10-50 cm long. Leaves 7-17, erect and arching; sheath 0.5-1.1 m long, green outside, red to brown inside, slightly fibrous at margins, with ligule \pm 30 cm long, opposite to petiole; petiole 0.6-2 m long, canaliculate above, rounded below, green, at first greyish lepidote becoming glabrous; rachis green, 3-6 m long, bearing 75-117 pinnae per side, clustered in groups of 2-6, oriented in several planes, the most apical ones \pm regularly spaced; pinnae 12-160 x 1-8 cm, linear-lanceolate, somewhat drooping, the widest in middle of blade. Inflorescences 1-3 per plant; peduncle obliquely erect, green, terete, 15-40 cm long; prophyll 0.3-1.5 m, green to reddish-brown, flattened and crenulate at margins; peduncular bract 0.8-2 m long, same color, fusiform, acuminate; rachis 50-80 cm long, bearing many (usually > 200) pendulous rachillae, 0.8-1.5 m long, cream at anthesis, red in fruit, the pistillate flowers on more than half rachilla. Fruits globose, smooth, glabrous, 12-20 mm diam, purplish-black and glaucous waxy at maturity. Fl (Nov-Feb), fr (Feb-May); very abundant on well drained slopes and hill tops. **Comou.**

ORBIGNYA Martius ex Endlicher

Robust, "stemless", unarmed, monoecious plants of understory. Leaves big, arranged in funnel-shaped crown, regularly pinnate, with pinnae numerous, green on both sides. Inflorescence interfoliar, once branched, with peduncular bract persistent, acuminate, woody and deeply sulcate; bisexual and male inflorescences on same plant; bisexual rachillae with few pistillate flowers at base, the sterile male flowers aggregated in caducous apical part. Fruits medium-sized, 1(-)3 seeded, with enlarged, persistent, cupular periant.



Maximiliana maripa



Orbignya sagotii

V. de la

Orbignya sagotii Trail ex Im Thurn (pl. 14). Stem solitary, subterranean, in shape of saxophone. Leaves 8-14, forming funnel-shaped crown, acting as litter collector; petiole, including sheath, 0.5-2.5 m long, massive, convex below, concave above, dark green with pale brown dots; rachis 4.5-7.5 m long, with 65-110 pinnae on each side, inserted at regular intervals, in single plane; pinnae, straight, linear lanceolate, 0.5-6 x 40-140 cm, acuminate and asymmetric at tip, the midrib strongly prominent above. Inflorescences erect, borne between leaf bases, basally hidden in ground and litter as well as the 50 cm long prophyll; peduncular bract 70-90 cm long, the upper half only visible; peduncle 70-100 cm long, hardly visible; rachis 15-35 cm long; male inflorescences with 35-60 rachillae, white lepidote, \pm 7 cm long, with staminate flowers densely arranged on one side; bisexual inflorescences with rachillae 5-10 cm long, with a broad and short bract at base, bearing 4-10 pistillate flowers. Fruit ellipsoidal, glabrous, smooth, 3.5-4.5 x 2-3 cm, light brown at maturity. Fl (Aug-Oct), fr (May-Jun); uncommon, mostly on \pm waterlogged soils. **Macoupi.**

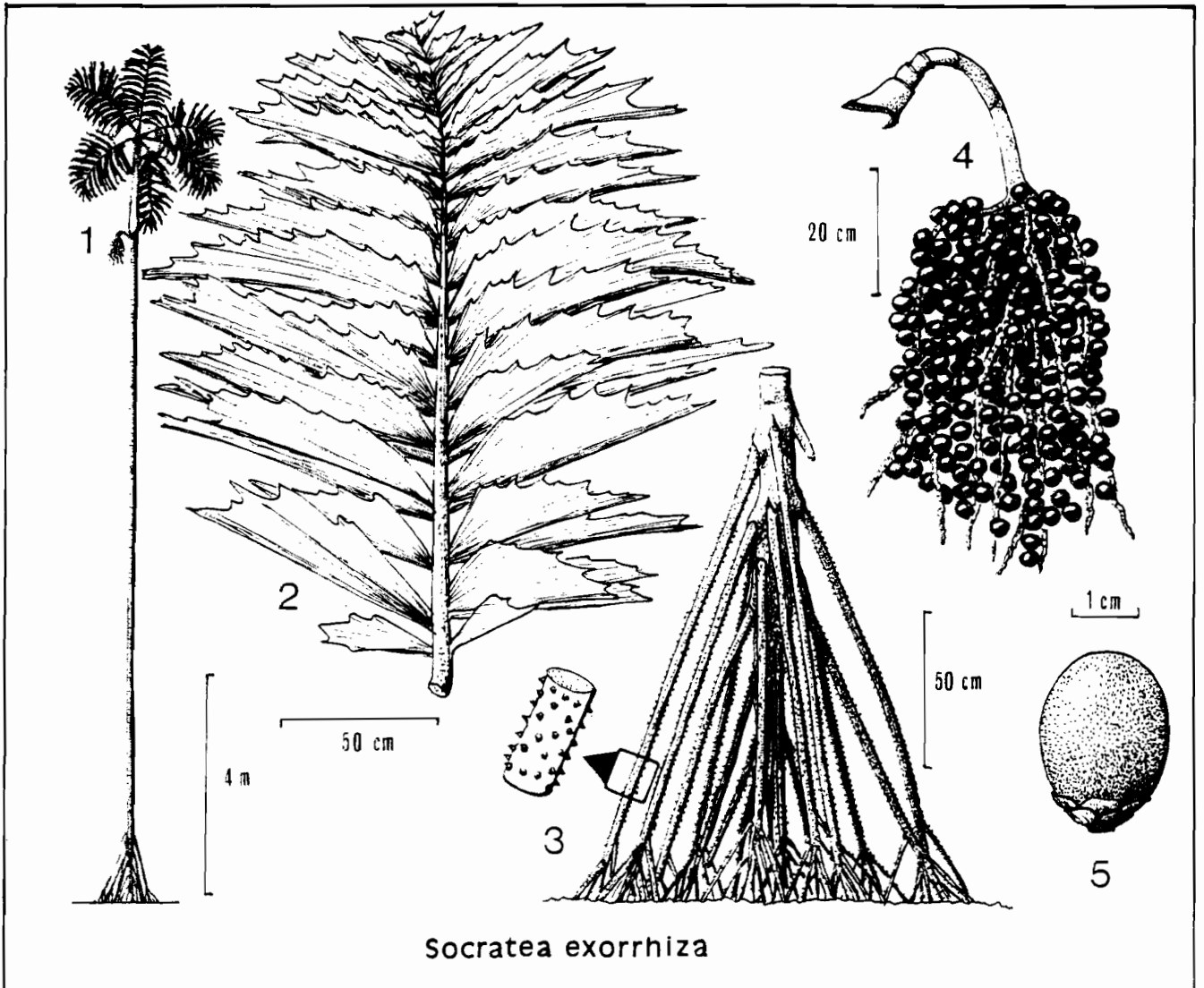
SOCRATEA Karsten

Single-stemmed, monoecious, canopy plants, the trunk supported by cone of prickly stilt roots. Leaves pinnate, with pinnae deltoid, praemorse at tip; blade green on both sides. Inflorescences infrafoliar at anthesis, once branched, with 4-5 peduncular bracts; rachillae few, pendulous, bearing triads of 1 pistillate and 2 staminate flowers, spirally arranged. Fruits medium-sized, one-seeded.

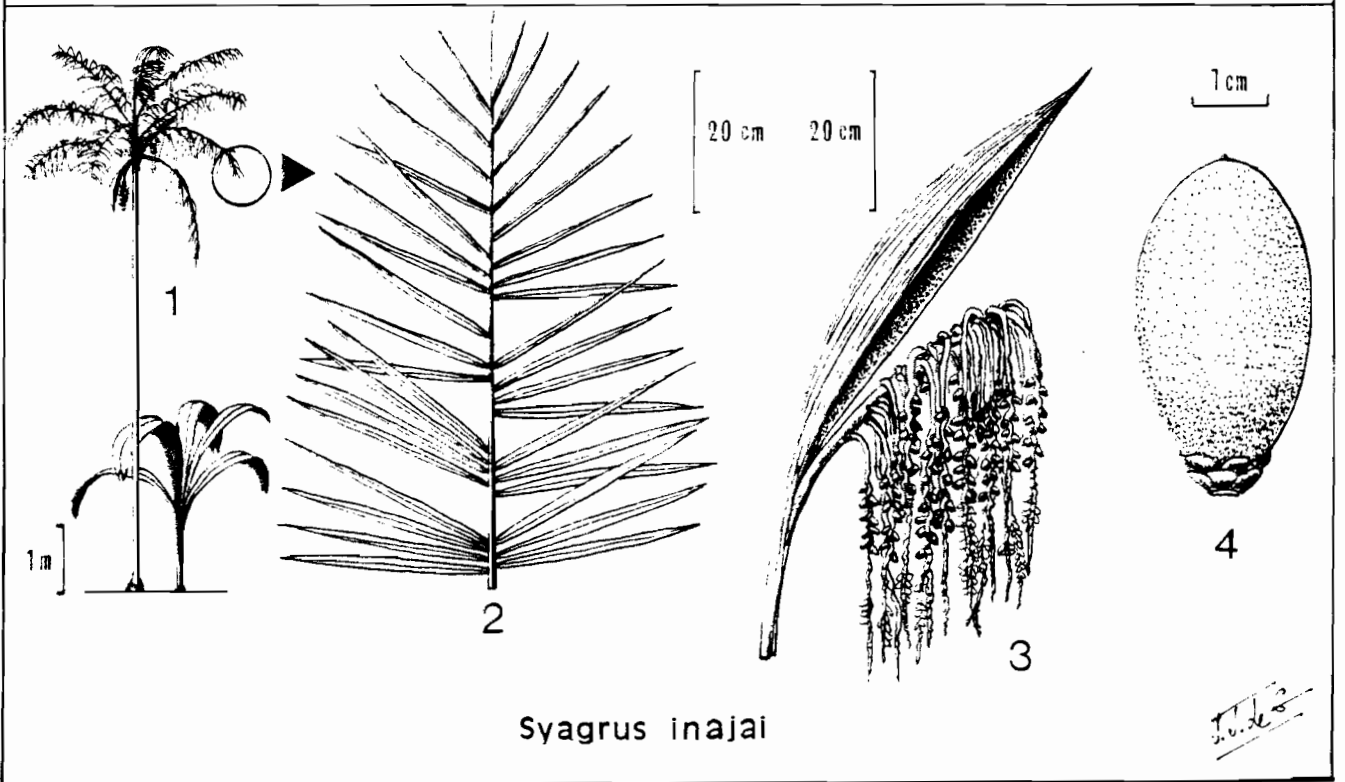
Socratea exorrhiza (Martius) H. Wendland (pl. 15). Medium-sized to tall, single-stemmed, canopy plants, 5-20 m x 10-18 cm, the trunk subtented by loose cone of branched stilt roots, to 2 m high, 0.5-9 cm diam., armed by pneumatophores transformed into small, conical spines. Leaves 5-8, \pm arching, forming plumose crown; sheath tubular, glabrous, prolonging trunk, under crown, by a glaucous green cylindrical crownshaft, to 1.5 m long; petiole terete, whitish tomentose, 10-40 cm long; rachis brown tomentose, rounded below, canaliculate above, 1.4-2.8 m long, with 13-25 pinnae per side, at regular intervals; pinnae to 100 x 30 cm, cuneate, asymmetric, obliquely inserted at base, praemorse at apex, entire or longitudinally lacinate into 2-8 unequal segments, \pm puberulous on veins abaxially. Inflorescences 1-4 per plant, erect in bud, pendulous at anthesis; peduncle 20-50 cm long, at first white tomentose, becoming brown tomentose; prophyll to 12 cm long, persistent; peduncular bracts to 60 cm long, early caducous, light brown tomentose as well as prophyll; rachis 8-25 cm long, bearing 9-14 rachillae, 30-70 cm long, with same tomentum as peduncle. Fruit ellipsoidal, smooth, glabrous, 15-25 x 25-30 mm, yellowish brown at maturity. Fl and fr throughout year; common on all types of soil and drainage, but never in high density. **Awara-monpé, awaramonbin.**

SYAGRUS Martius

Medium-sized, single-stemmed, unarmed, monoecious plants of understory. Leaves entire and bifid in juvenile plants (even when trunk developed), pinnate, with pinnae numerous, straight, linear-oblongate, clustered in groups along rachis (except in most distal part), in fertile plants. Inflorescences infrafoliar, once branched, at first erect and arching, becoming pendulous when fruiting; peduncular bract persistent, woody, sulcate; lower half of rachillae with triads of 1 pistillate and 2 staminate flowers, the upper half with staminate flowers only. Fruit medium-sized, ovoid, one-seeded.



Socratea exorrhiza



Syagrus inajai

T. J. S. 1962

Syagrus inajai (Spruce) Beccari (pl. 15). Medium-sized, single-stemmed plants, 4-12(20) m x 4-15 cm, the trunk smooth, greyish, swollen at base, with internodes 8-15 cm long, hardly visible. Leaves 6-12, erect and arching; sheath 15-70 cm, fibrous; petiole 20-120 cm, hemicylindrical, greenish brown lepidote; blade entire and bifid at apex, 150-250 x 20-30 cm, when trunk $< \pm 3$ m tall, plumose and pinnate with rachis 1.6-3.3 m long, when trunk $\geq \pm 3$ m tall; pinnae 70-110 per side, clustered into 30-40 groups of 2-4(5) and oriented in several planes, straight, linear oblanceolate, 14-90 x 0.5-3.5 cm, decreasing in width from middle of leaf to base and apex. Inflorescences 1-3 per plant; peduncle 30-75 cm long, curved, greenish brown lepidote; prophyll tubular, flattened, membranous, brown, 20-50 cm long; peduncular bract woody, the curved upper half deeply sulcate and fusiform, mucronate at tip, 0.9-1.3 m long; rachis 15-50 cm long, green, bearing 15-30(60) rachillae, yellow at anthesis, 20-60 cm long. Fruits 10-20 per rachilla, ellipsoidal to ovoid, glabrous, smooth, 2.5-3 x 4-5 cm, green turning yellowish-orange at maturity. Fl and fr throughout year; on well drained slopes, abundant in some places but very localized; only found near Eaux-Clares. **Feuille-chasseur** (juvenile only).

ILLUSTRATIONS

Plate 1.

Astrocaryum paramaca: 1. Habit, 2. Leaf apex, 3. Part of petiole, with flattened, winged spines, 4. Inflorescence, 5. Fruit before (bottom) and after (top) dehiscent at maturity.

Astrocaryum gynacanthum: 1. Habit, 2. Section of trunk, 3. Leaf apex, 4. Inflorescence, 5. Fruit.

Plate 2.

Astrocaryum sciophilum: 1. Habit, 2. Leaf apex, 3. Infrutescence with base of petiole bearing spines arranged in oblique rows, 4. Fruit.

Astrocaryum murumuru: 1. Habit, 2. Leaf apex, 3. Infrutescence, 4. Fruit.

Plate 3.

Bactris aubletiana: 1. Habit, 2. Leaf, 3. Section of stem with infrutescence.

Bactris simplicifrons: 1. Habit, 2. Bifid leaf and pinnate leaf, 3. Section of stem with infrutescence.

Bactris floccosa: 1. Habit, 2. Leaf, 3. Section of stem with inflorescence; fruit.

Plate 4.

Bactris elegans: 1. Habit, 2. Section of trunk, 3. Leaf, 4. Inflorescence, 5. Part of rachilla with fruits.

Bactris geonomoides: 1. Habit, 2. Leaf, 3. Section of stem with leaf sheaths and infrutescence.

Plate 5.

Bactris brongniartii: 1. Habit, 2. Section of trunk, 3. Distal part of leaf, 4. Section of petiole, 5. Infrutescence, 6. Part of rachilla with fruits.

Bactris maraja: 1. Habit, 2. Section of trunk, 3. Distal part of leaf, 4. Infrutescence, 5. Part of rachilla with fruits.

Plate 6.

Bactris acanthocarpoides: 1. Habit, 2. Blade, 3. Infrutescence, 4. Fruit.

Bactris pliniana: 1. Habit, 2. Blade, 3. Infrutescence, 4. Fruit.

Plate 7.

Bactris raphidacantha: 1. Habit, 2. Leaf, 3. Infrutescence, 4. Fruit.

Bactris humilis: 1. Habit, 2. Leaf, 3. Infrutescence, 4. Fruit.

Plate 8.

Bactris gastoniana: 1. Habit, 2. Infrutescence, 3. Fruit.

Bactris oligocarpa: 1. Habit, 2. Infrutescence, 3. Fruit

Desmoncus macroacanthos: 1. Habit, 2. Infrutescence.

Plate 9.

Euterpe oleracea: 1. Habit, 2. Leaf, 3. Detail of aerial roots, 4. Inflorescence, 5. Part of rachilla with fruit, 6. Fruit in cross section, 7. Seedling.

Euterpe precatorea: 1. Habit, 2. Fruit in cross section, 3. Seedling.

Plate 10.

Geonoma baculifera: 1. Habit, 2. Leaf, 3. Inflorescence, 4. Part of rachilla with fruit.

Geonoma umbraculiformis: 1. Habit, 2. Leaf, 3. Inflorescence, 4. Part of rachilla with fruit.

Plate 11.

Geonoma deversa: 1. Habit, 2. Leaf, 3. Inflorescence, 4. Part of rachilla with fruits.

Geonoma euspatha: 1. Habit, 2. Leaf, 3. Inflorescence, 4. Part of rachilla with fruits.

Geonoma stricta: 1. Habit, 2. Leaf, 3. Section of stem with infrutescence.

Plate 12.

Geonoma maxima: 1. Habit, 2. Leaf, 3. Section of upper part of stem with infrutescence, 4. Part of rachilla with fruits.

Hyospathe elegans: 1. Habit, 2. Leaf, 3. Section of stem with inflorescence, 4. Part of rachilla with fruits.

Plate 13.

Oenocarpus bacaba: 1. Habit, 2. Upper part of trunk with leaf and inflorescence, 3. Young inflorescence, still enclosed by prophyll and peduncular bract, 4. Rachilla with fruits, 5. Fruit, 6. Seedling.

Jessenia bataua: 1. Habit, 2. Upper part of trunk with leaf and inflorescence, 3. Young inflorescence, still enclosed by prophyll and peduncular bract, 4. Rachilla with fruits, 5. Fruit, 6. Seedling.

Plate 14.

Maximiliana maripa: 1. Habit of young (left) and adult (right) palm, 2. Leaf apex, 3. Infrutescence, 4. Fruit.

Orbignya sagotii: 1. Habit, 2. Inflorescence, 3. Fruit.

Plate 15.

Socratea exorrhiza: 1. Habit, 2. Blade, 3. Detail of stilt-roots, 4. Infrutescence, 5. Fruit.

Syagrus inajai: 1. Habit of young (right) and adult (left) palm, 2. Distal part of blade, 3. Inflorescence, 4. Fruit.

LIST OF EXSICCATA

Arecaceae gen.

Arecaceae sp.

DESCOINGS B. 20645

Astrocaryum G.F.W. Meyer*A. gynacanthum* Martius

GRANVILLE J.-J. de 4488

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MORI S.A. & BOOM B.M. 15097

A. murumuru Martius

GRANVILLE J.-J. de 4481

GRANVILLE J.-J. de & KAHN F. 5397

5406

11201

A. paramaca Martius

GRANVILLE J.-J. de 5023 bis

GRANVILLE J.-J. de & KAHN F. 5407

MORI S.A. & al. 14872

A. sciophilum (Miquel) Pulle

BOOM B.M. & MORI S.A. 1711

1751

1788

1891

GRANVILLE J.-J. de 3257

4508

9031

PRANCE G.T. & al. 30662

Bactris N.J. Jacquin ex Scopoli*B. aubletiana* Trail

GRANVILLE J.-J. de 1577

3075

HAHN W.J. 3630

MORI S.A. & BOOM B.M. 14731

OLDEMAN R.A.A. B - 4069

B. brongniartii Martius

GRANVILLE J.-J. de & KAHN F. 5404

B. elegans Barbosa Rodrigues & Trail

CREMERS G. & al. 13006

B. floccosa Spruce

GENTRY A.H. & al. 63160

GRANVILLE J.-J. de 736

PRANCE G.T. & al. 30655

<i>B. gasipaes</i> Humboldt, Bonpland & Kunth GELY A.	51
<i>B. gastoniana</i> Barbosa Rodrigues GRANVILLE J.-J. de	1624 1638 3068 B - 5253
<i>B. geonomoides</i> Drude GRANVILLE J.-J. de	4496
<i>B. humilis</i> (Wallace) Burret CREMERS G. & al. GENTRY A.H. & al. GRANVILLE J.-J. de & KAHN F. GRANVILLE J.-J. de & al.	13020 63159 5392 8381 8509 8673
<i>B. maraja</i> Martius GRANVILLE J.-J. de & al.	8854 8872
<i>B. oligocarpa</i> Barbosa Rodrigues GRANVILLE J.-J. de GRANVILLE J.-J. de & al. PRANCE G.T. & al.	10337 8376 8613 30660
<i>B. pliniana</i> Granville & Henderson GRANVILLE J.-J. de GRANVILLE J.-J. de & KAHN F.	897 5005 5453 5528 5405
<i>B. raphidacantha</i> Wessels Boer GRANVILLE J.-J. de GRANVILLE J.-J. de & KAHN F. MORI S.A. & al.	B - 5250 5413 15063
<i>B. simplicifrons</i> Martius AUMEERUDDY Y. GRANVILLE J.-J. de GRANVILLE J.-J. de & al. HAHN W.J.	66 bis 697 1676 2789 B - 4263 8470 8512 8567 3629

Desmoncus Martius

D. macroacanthos Martius
MORI S.A. & PIPOLY J.J. 15604

Euterpe Martius

E. oleracea Martius
BOOM B.M. & MORI S.A. 2400
2401
2402

E. precatória Martius
BOOM B.M. & MORI S.A. 2195

Geonoma Willdenow

G. baculifera (Poiteau) Kunth
AUMEERUDDY Y. 66
GRANVILLE J.-J. de 2788

G. deversa (Poiteau) Kunth
CREMERS G. & al. 13109

G. euspatha Burret
GRANVILLE J.-J. de 1590
GRANVILLE J.-J. de & al. 8393
8801

G. maxima (Poiteau) Kunth
GRANVILLE J.-J. de 2287
3115
GRANVILLE J.-J. de & al. 8617
MORI S.A. & al. 21591

G. stricta (Poiteau) Kunth
GRANVILLE J.-J. de 10328
GRANVILLE J.-J. de & KAHN F. 5393
GRANVILLE J.-J. de & al. 8422
8787
SABATIER D. 1158

G. umbraculiformis Wessels Boer
GRANVILLE J.-J. de 1644
B - 5499
GRANVILLE J.-J. de & al. 8584

Hyospathe Martius*H. elegans* Martius

BILLIET F.	1968
FEUILLET C.	480
GRANVILLE J.-J. de	743
	901
	B - 5500
HAHN W.J.	3640
MORI S.A. & BOOM B.M.	14908
	15000
MORI S.A. & al.	21634
PRANCE G.T. & al.	30629

Jessenia H. Karsten*J. bataua* (Martius) Burret

subsp. <i>oligocarpa</i> (Grisebach & H. Wendland) Balick	
GRANVILLE J.-J. de	4518 A

Oenocarpus Martius*O. bacaba* Martius

BOOM B.M. & MORI S.A.	1848
	2346
GRANVILLE J.-J. de	2419
	3458

Orbignya Martius ex Endlicher*O. sagotii* Trail ex Im Thurn

MORI S.A. & BOOM B.M.	14954
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Socratea Karsten*S. exorrhiza* (Martius) H. Wendland

BOOM B.M. & MORI S.A.	1882
	1966
	2038
	2040
	2042
	2044
	2045
	2101
	2298
	2327
	2415
	2452
GRANVILLE J.-J. de & KAHN F.	5412

Syagrus Martius*S. inajai*

GRANVILLE J.-J. de	694
GRANVILLE J.-J. de & KAHN F.	5408