

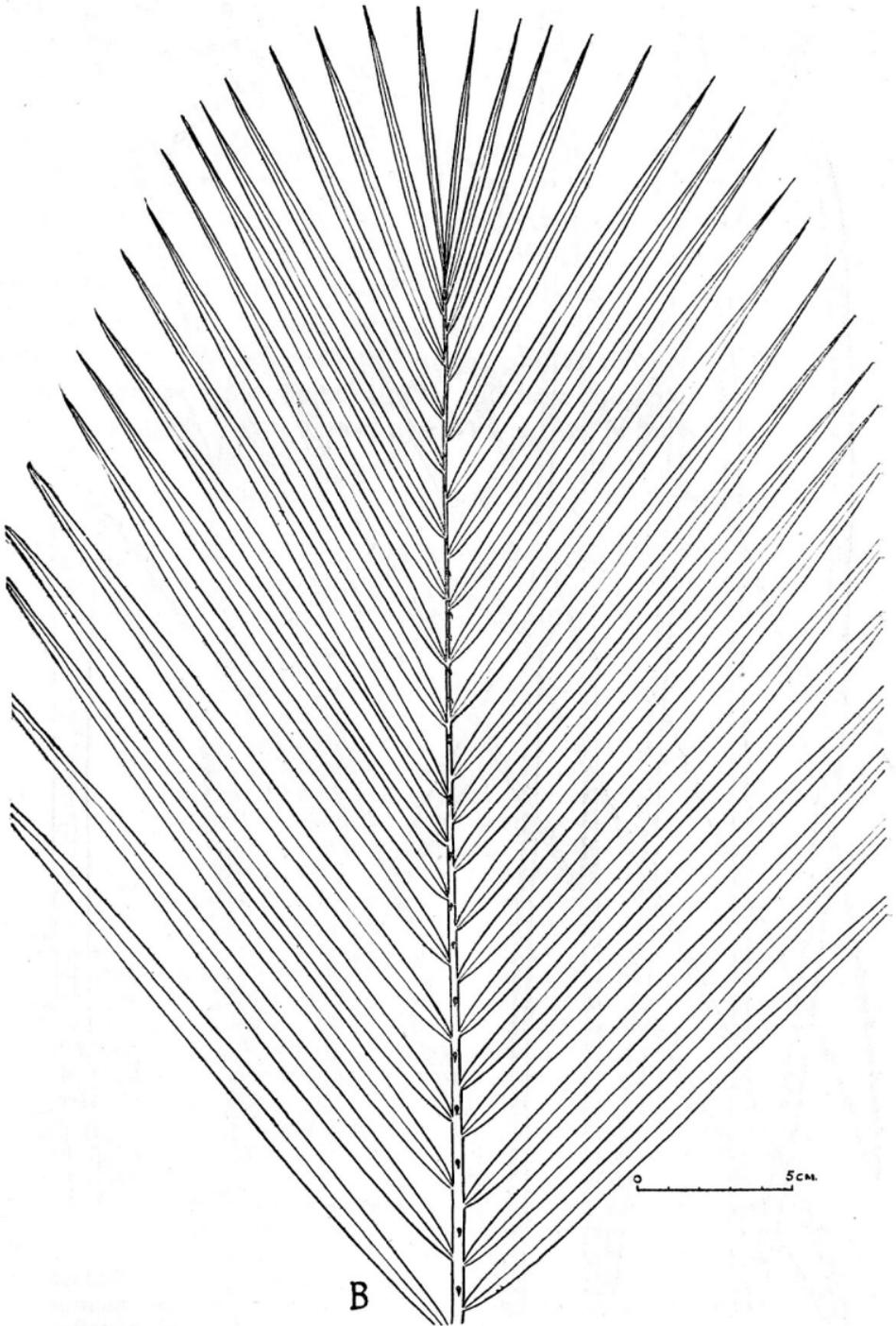
of *C. densiflorus* resembles so very much this species in the spadix and a shape of the leaflets that *C. pulaiensis* might well be suspected to be a hybrid between *C. densiflorus* and a species like *C. exilis*, or some allied species having hairy leaves in the under surface.

Ridley 12,199 in herb. Singapore and the holotype at Kew bear the identical number, but the Kew specimen is dated January 1904 and the Singapore duplicate dated December 1904; I think both the specimens belong to the same collection made in December 1904, but that Ridley entered the word "January", for December through mistake, possibly because the specimen was distributed in January 1905. The unnumbered specimen is also collected on Gunong Pulai in December 1904, but here the spadix of *C. pulaiensis* is mounted with a leaf which does not belong to it.

68. *Calamus chibehensis*, Furtado sp. nov.—t.t. 68 & 68a.

C. Burkilliano similis, sed frondium vaginis deciduo furfuraceis, petiolis secus marginis minus armatis, foliis et spadicibus longioribus, perianthiis fructiferis subpedicellatis, fructibus apparenter majoribus haec species sat dissimilis.

Caudex scandens, cum vaginis 2.5–3.5 cm. in diam. *Vagina* frondis flagellifera, striata, deciduo furfuracea, aculeis ad 1.5 cm. usque longis, reflexis, triangularibus, dispersis solitariis vel raro basi confluentibus, apicem versus nigricantibus ornata, apice oblique truncata, infra petiolulum gibbosa, in gibbo haud armata. *Ocrea* brevis, marcescens, setis densis atrescentibus praedita, secus margines vaginae persistens. *Fron-des* cum petiolo circa sesquimetrales, in foliolia equidistantia divisae; petiolus 20–30 cm. longus, supra concaviusculus, infra medium secus margines aculeolatus, supra medium inermis, subtus convexus, apicem versus in dorso unguibus simplicibus remotis ornatus; rachis laminae secus dorsum unguibus solitariis in una serie, in parte apicali versus minoribus praedita, circa 1–1.30 m. longa. *Foliola* plura, alternata vel subopposita, 3 costata, circa 3–5 cm. inter se remota, aequidistantia, porrecta, ensiformia, apicem versus sensim attenuata, maxima 40–50 cm. longa, 2–2.5 cm. lata, apicem frondis versus minora; duo apicalia inter minima, libera vel basi paulo connata; omnia supra secus tres costas et margines remote setosa, subtus inermia. *Spadix* femineus flagelliformis, frondibus longior, in inflorescentias partiales 2–3 divisus, in parte pedunculare 1.5–2 m. longus; inflorescentiae partiales 15–20 cm. longae in spicas 18–22 alternatas divisae. *Spathae primariae* tubulares, basilari bicarinatae excepta, cylindricae, aculeatae, apice oblique truncatae, spadicis internodiis minores; spathae secundariae infundibuliformes, inermes, circa 10 mm. longae, furfuro deciduo ferrugineo tectae, striatae, apice fimbriatae, ligulatae. *Spiculae* circa ad 5 cm. longae, ad apicem spathae vel nonnihil supra orientes, horizontales vel reflexae, in axilla callosae, floribus utrinsecus 8–12; spathellae infundibuliformes, 2 mm. longae, apice scariosae. *Involucrophorum* ad spathellae apicem oriens, prateriforme; involucrum conforme; areola lunata. *Perianthium fructiferum* juvenile tantum visum, basi callosum, subpedicelliforme, corolla calyce duplo longior. *Fructus* juvenilis, squamis per series 15 verticales dispositis.



Tab. 68a. *Calamus chibehensis* (Henderson 29,842—holotypus).
B, Frondis fragmentum apicale.

Stem scandent, apparently over 10 m. long, with sheaths 2.5–3.5 cm. in diam. *Leaf-sheaths* flagelliferous, deciduously furfuraceous, gibbous below the petiole, striate, unarmed in the gibbous part, armed in other parts with about 1.5 cm. long, solitary, scattered, rarely confluent spines and with blackish setae in the ocrea. *Leaves* including the 20–30 cm. long, petiole about 1.5 m. long, armed dorsally in the petiole and rachis with short, solitary spines. *Leaflets* many, ensiform, about 3–5 cm. apart, largest about 40–50 cm. long, 2–2.5 cm. broad. *Female spadix* flagelliform, much longer than the leaves, long peduncled (peduncle about 1.5–2 m. long), divided into about 2–3 branches and terminating in a long clawed appendix; the branches about 15–20 cm. long, each bearing about 18–22 spikelets. *Primary spathes* tubular, aculeolate; secondary spathes tubular, unarmed, 10 mm. long, deciduously ferruginous. *Spikelets* up to 5 cm. long. *Fruit* very young, with subpedicelliform perianth and with scales arranged in 15 series.

MALAYA: Pahang, Pulau (insula) Chibeh, prope Pulau Tioman (Henderson 29,842).

This species belongs to Beccari's Group V. B. 1., being allied to the subgroup to which *C. Reinwardtii* belongs. It is easily distinguished from its allies by long leaves with long, equidistant leaflets, the long peduncled flagelliform spadices, large stems and thickly setose ocrea which borders the mouth of leaf-sheaths. From *C. Burkillianus*, it is distinguished by the larger dimension of almost all its organs, the presence of deciduous rusty furfur on the sheaths which by persisting for a long time on the bases of the thorns make the latter appear reddish-brown. The fruit too may be larger (in the material it was too immature).

69. Calamus Burkillianus Becc. ex Ridl., Fl. Malay Pen. V (1925) 56; Furtado in Gard. Bull. Straits Settl. VII (1935) 245.—
t.t. 69 & 69a.

Stem scandent, 2–3.5 cm. in diam., apparently about 15 m. or more long. *Leaf-sheaths* light straw-coloured, gibbous below the petiole, armed with similarly coloured, black-tipped, scattered, solitary, horizontal or slightly recurved, 8–15 mm. long spines. *Ocrea* short, hispid. *Leaves* apparently a metre or so long, all parts drying light greenish or straw-coloured, petiole apparently about 30–45 cm. long, slightly covered with a brownish-coloured, deciduous furfur, semi-terete, armed with short spines along the margins; rachis armed with solitary, short claws on the dorsum. *Leaflets* narrow ensiform, equidistant, alternate or opposite, 2–3.5 cm. apart, largest 25–35 cm. long, 1.5–1.8 cm. broad, setose in the two costae above, and in the midcosta below, the terminal shortest, shortly connate at base. *Spadices* much longer than the leaves, ending in a long flagelliform appendix. *Primary spathes* tubular, aculeolate, light green; secondary spathes unarmed, about 1–2 cm. long. *Spadix branches* 20–25 cm. in male, up to 50 cm. in female spadices. *Spikelets* in the female spadices up to 12 cm. long, shorter in the male; male flowers usually on a short tertiary branches so as to appear as if in groups. *Fruiting perianth* explanate or shortly pedicelliform, corolla nearly twice as long as the calyx. *Fruit* ellipsoid, narrowed on both sides, about 12 mm. long, 5 mm. in diam.; scales arranged in 15–16 longitudinal series, light coloured, with dark intramarginal lines; seed oblong, not ruminant.

MALAYA: Pahang, Pulau Tioman, Joara Bay (Burkill s.n. VI-1915—Isoholotype); Ayer Batang (Henderson 18,465). **Trengganu**, Pulau Kapas (Holttum 15,211).