

to which it appears to be near, in that it has longer leaves, no hairs or setae on the leaf-sheaths, and its leaflets are longer and either armed on both sides or slightly armed beneath. The spadix is much smaller than in *C. peregrinus* and *C. longispathus*.

8. *Calamus longispathus* (*longispatha*) Ridl., Mat. Fl. Mal. Pen. II (1907) 209 pro parte (ex altera parte = *C. peregrinus* & *C. pallidulus* Becc.); emend. Becc. in Ann. Roy. Bot. Gard. Calc. XI Appendix (1913) 134 t. 78; Ridl., Fl. Mal. Pen. V (1925) 63 p.p.—t. 8.

Stem scandent, about 7–10 m. long, 3–5 cm. in diam., solitary (?). *Leaf-sheaths* obliquely truncate at mouth, light-coloured, armed with stout, scattered, solitary, reflexed spines about 5–8 mm. long. *Leaves* 2.50–3 m. long, usually ending in a short cirrus. *Leaflets* smooth on both surfaces, lanceolate-ensiform, acuminate, remote, 7 cm. or more apart, inequidistant, the largest 40–50 cm. long, 3–5 cm. broad, smallest and the narrowest towards the leaf apex. *Spadix* 2–2.5 m. long, not flagelliform, ending in a short, not unguiculate appendix, divided in about 4 spiculiferous, scorpioid, 14–20 cm. long branches. *Primary spathes* tubular, practically unarmed or armed with a few scattered, small spines. *Fruit* fusiform, not mature, 25 mm. long including 5 mm. long pedicelliform perianth, 8–10 mm. in diam; scales light coloured with brown margins.

MALAYA: Selangor, 15th mile Pahang Track near Semangkok Pass (Ridley 8,777 lectotype). Pahang, Gunong Sempang near Gap (Burn-Murdoch, sub Ridley No. 13,299, male). Kemaman, Ulu Bendong near Kajang, alt. 150 m. (Corner 30,076).

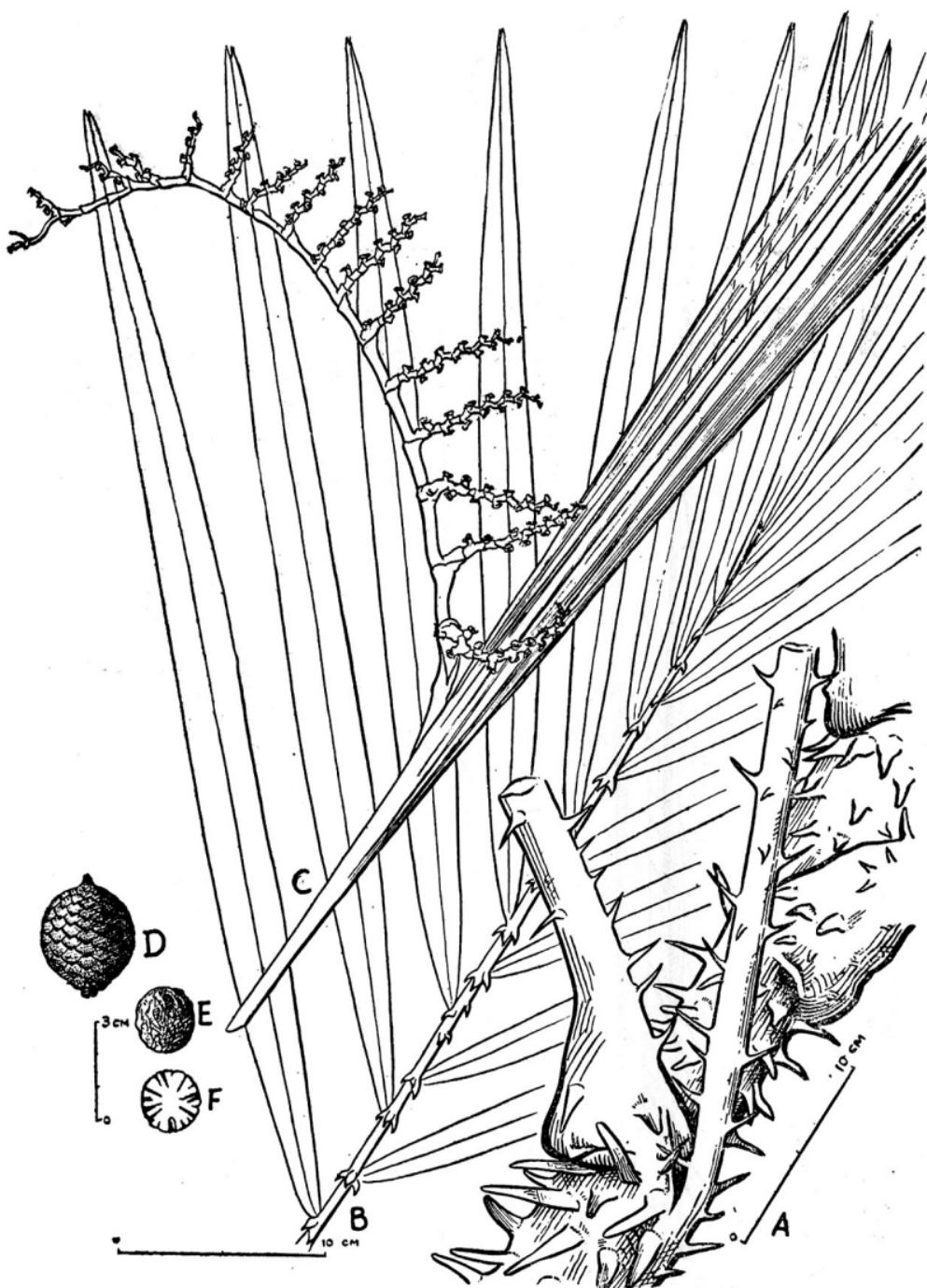
Ridley's original description of this species was based on more than one element; from the remarks made by Ridley, it looks as if the Gunong Keledang syntype should have been chosen as the lectotype of the species, but the main body of the description was from the other syntypes also, and so I have followed here Beccari's typification of the species. In *Flora* cit. Ridley has adopted Beccari's typification and description of the species. The remarks attributed by Ridley to Beccari that the fruiting scales were obscurely channelled, referred to the Perak syntypes of Beccari's *C. pallidulus*, under which Ridley (1925) cites the specimens again without realising that he had made these also the syntypes of his *C. longispathus*.

9. *Calamus peregrinus* Furtado spec. nov.—t. 9.

C. longispatha Ridl., Mat. Fl. Mal. Pen. II (1907) 209 pro parte non typica.

C. ornatus sensu Ridl., Mat. cit. (1907) 195 et Fl. Mal. Pen. V (1925) 53 quoad specimina Moorhouseana infra citata.

Inter omnes species majores ad sectionem Macropodium pertinentes spadicibus flagelliformibus longissimus; spathiis primariis



Tab. 9. *Calamus peregrinus* (Furtado 33,035; holotypus).

A, Caudicis fragmentum. B, Frondis fragmentum apicale. C, Spadicis fragmentum. D, Fructus. E, Ejusdem semen. F, Idem verticaliter discissum ut ruminatio et embryo appareant.

longis ultra ramorum bases axillarum longe productis mox marcescentibus et longitudinaliter fissis; fructibus inter majores ponendis circa 2·5 cm. in diam., globosis; haec species sat distincta.
Ad Gregem VII Beccarianum pertinet.

Caudex solitarius, scandens, plus quam 20 m. longus, cum vaginis circa 3 cm. in diam. *Vagina* graminea, aculeis solitariis vel interdum lateraliter confluentibus triangularibus, usque ad 2 cm. longis, reflexis, subtus concaviusculis, apicem versus atrescentibus praedita, apice oblique truncata, infra petiolum valde geniculata. *Ocrea* brevissima mox decidua vix visibilis. *Frondes* magnae, longe petiolatae, cum petiolo 4–5 m. longae; petiolus gramineus, 1–1·75 m. longus, semiterete, superne applanatus, secus margines aculeis solitariis vel interdum binis ad 5 mm. longis, rarissime majoribus, reflexis, 1·5–3 cm. inter se remotis, subtus convexus, prope margines aculeis conformibus vel crassioribus per series 1–3 dispositis, in medio dorsi aculeis solitariis remotis, 3–7 cm. inter se dissitis ornatus; lamina 2·5–3 m. longa, in rachidi subtus unguibus per series 3 irregulares dispositis, solitariis vel interdum basi confluentibus, apicum versus nigrescentibus armata. *Foliola* numerosa equidistantia vel fere, opposita vel subopposita, 2·5–4 cm. inter se remota, ensiformia, apicem versus sensim attenuata, circa 50 cm. longa, ad usque 3·5 cm. lata, 1–3 costulata (apicalia minora), secus margines setosa, utrinque inermia vel supra in costis duabus lateralibus et subtus in costa mediana apicem versus tantum setosa, nervis transversalibus conspicuis. *Spadix* femineus in appendicem flagelliformem unguiculatam longam exiens, in ramis primariis, spiculiferentibus, 3–6, deciduo furfuraceis, 20–25 cm. longis divisus, parte pedunculare ad ramum infimum usque ad 25–50 cm. longus. *Spatha* primariae tubulosae, ultra ramorum bases axillarum multo productae apice laminares, omnino vel pro majore parte marcescentes, fissae vel laceratae; basilaris spatha bicarinata, secus carinas et in altera parte dorsale praecipue in limbo aculeolata; alterae spathae basi cylindrinae fere inermes, in limbo aculeolatae; spathae secundariae cylindrica vel elongato infundibuliformes, 1–2 cm. longae, deciduo furfuraceae, apice truncatae, ligulatae. *Spiculae* usque ad 6 cm. longae, horizontales vel reflexae in axilla paulo callosae, floribus utrinsecus 6–8 praeditae; spathellae circa 4 mm. longae, ligulatae. *Involucrophorum* exsertum, pedicellatum, superne in axilla callosum rimatumque; involucrum pateriforme, vix exsertum; areola semi-circularis. *Perianthum* fructiferum conspicue pedicellatum, cum corollis quam calyces sesqui-longioribus. *Fructus* sine rostro 3–4 mm. longo et sine perianthio circa 30 mm. longus, 25 mm. latus; squamis per series verticales 17–18 dispositis, in juventute brunneis, serius partim flavescientibus, dorso canaliculatis, secus margines atrescentibus. *Semen* globosum, circa 16 mm. in diam., ruminationibus radiatim linearibus, usque ad 5 mm. profundis praeditum, in centro homogeneum. *Spadix* masculus in ramos secundarios spiculiferentes divisus, alioquid femineo similis.

Stem solitary, scandent, 15–25 m. long, 3 cm. in diam. *Leaf-sheaths* light straw-coloured, armed with scattered, upto 2 cm. long spines. *Leaves* non-cirriferous, 4–5 m. long including 1–1·75 m. long petiole. *Leaflets* many, equidistant, 2·5–4 cm. apart, ensiform, the largest 50 cm. long, 3·5 cm. broad; claws on the rachis solitary or sometimes united at base, darkish at the apex, arranged in 3 irregular series. *Spadix* long, flagelliform; female divided in about 3–6 spiculiferous, 20–25 cm. long branches; male decomound bearing spikelets on secondary branches; primary spathes tubular with a long, laminar apex, later decomposing and splitting. *Fruit* about 30 mm. long, 25 mm. in diam.; scales brown when young, straw-coloured when old, with dark margins, channelled in the middle; seed globose, about 16 mm. in diam., radiately ruminate with a broad homogeneous centre.

MALAYA: Kedah, Weng (Furtado 33,063); Weng in colle Bukit Sebilah (Furtado 33,064); Baling prope Sungai Labong (Furtado 33,061); Langkawi Islands (Batten-Pooll in II-1940). **Perak**, Bukit Merbau Balong prope Kroh (Furtado 33,035 femineus, *holotypus*, et 33,035^a masculinus); in silvis Padang Chong dictis, prope Kroh (Furtado 33,013, nom. vern. *Rotan Manau Tikus*); Gunong Keledang (Ridley in IX-1898, syn-type *C. longispathi*). **Negri Sembilan**, Bukit Senaling prope Kuala Pilah (Moorhouse, 24-XII-1903, vern. nom. *Rotan manok*,); Kuala Pilah (Moorhouse in 1907); Gunong Tampin (Burkill 2,536).

C. peregrinus has conspicuously pedicellate involucrophores and fruiting-perianths, and its spathe limb is long and lacerate and extends much beyond the base of the axillary spadix-branches, characters which would make the species fall in Beccari's Group VII which so far consisted of two Indian species only; but the seed of these two species apparently has only superficial ruminations.

The holotype specimen does not have any fully developed fruits and so the above-given description of the fruit is derived from Moorhouse's specimen collected in 1903.

Sectio III. RHOMBOCALAMUS Furtado sect. nov.

Caudices caespitosi (semper?), scandentes, flagelliferi. Folia ecirrifica vel cirro abortivo brevissimo praedita. Foliola rhomboidea, plurimque bicoloria, pluricostulata, cum costa mediana tantum ad apicem folioli attingente, alteris costis altitudine diversa evanescentibus. Spadices flagelliformes, quam folia nonnihil longiores, in ramos floriferentes secundarios vel tertiaros divisi. Spathae primariae et alterae stricte tubulares. Spiculae sessiles. Involucrophora sessilia. Perianthium fructiferum pedicelliforme or subpedicellatum. Semen superficialiter vel profunde ruminatum.

DISTRIBUTIO: In Java, Sumatra, Borneo, Peninsula Malayana et in Indo-China incolunt.

SPECIES TYPICA: *C. mawaiensis*.

This section is equivalent to Beccari's Group XI, and includes only the species of *Calamus* having rhomboidal leaflets. As in the section of *Coleospathus*, the species of this section bear flagella on the leaf-sheaths, no cirrus or only an abortive cirrus at the apex of each leaf, tubular primary spathes, and sessile spikelets and involucrophores. The fruiting perianth is subpedicellate or pedicelliform.

The species of this section of *Calamus* are not well represented in the herbarium collections and so are very imperfectly known. Most of the species appear to be tufted, and from the observations made on the clumps at the Botanic Gardens, Bogor, Java, and also in the jungle, the species do not appear to flower freely. Good collections are needed to show also the range of variation within each species.