appearance of being obscurely quadrangular. The mucilaginous coating of the seeds is rather thick when fresh and has acidulous pleasant taste. The fruit-scales vary considerably in colour; sometimes they are dark brown with a still darker line along the margins and a straw-coloured line at the base; at other times, or on other side of the same fruit, the scales are mostly yellowish or straw-coloured, the dark colour being restricted only to the apex and the margins.

I have seen only two male specimens (Corner & Furtado, 29494) and in both these the peduncles are considerably less spiny than in the female, though they do not exhibit any other character to separate them from the typical specimens. Hence I doubt the advisability in using the spininess of the peduncle as a basis for splitting the species of this group into varieties as Beccari has done in the case of *D. scapigerus* Becc. and its *var. minor* Becc. I have therefore included in the above citations Ridley's specimen (female) collected at Matang in Borneo, though its peduncle is quite unarmed.

I am not sure what specimen is referred by Ridley in his *Flora* to *D. scapigerus* Becc. The description given is mostly adapted from the one given by Beccari in the *Calcutta Annals XII.* The specimen is quoted thus: "Johore, Ulu Madik, (Holttum)". Now the Ulu Madik specimen is numbered 10636 and bears not the slightest resemblance to *D. scapigerus,* though in the Singapore herbarium it is marked to show that it is the basis for Ridley's record of *D. scapigerus* in the Malay Peninsula. It is a typical *D. periacanthus* Miq. At Ulu Kahang, a region not far distant from Ulu Madik, Holttum collected another specimen which is referred here to *D. lasiospathus* (cf. Holttum, 10920). Possibly Ridley had this second specimen in mind when he recorded *D. scapigerus* for the Peninsula.

**9. Dæmonorops longipedunculatus** Furtado **spec. nov.**

*Caudex* scandens vel semi-scandens, 1.5–5 m. longus, cum vagina 2.5 cm. in diam. *Frondes* magnae, cirrhiferae, subtus ad rhachin laminæ trigonam unguibus 3–5 fidis et ad cirrhum 5–7–fidis. *Vagina* in speciminibus visis haud gibbosa, allutacea, aculeis laminaribus, elasticis, solitariis vel interdum per series tranversas interruptas confluentibus olivaceis vel nigricantibus, reflexis, ad 8 cm. longis, basi 4–6 mm. latis, majoribus et brevioribus immixtis, frequenter apicem versus longissimis, inferioribus latissimis et infimis

brevissimis armata. *Ochrea* perbrevis, spinulis acicularibus fusco-atris per series tranversas aggregatis, ad 4 mm. longis ad marginem extus armata. *Petiolus* circ. 25–75 cm. longus; supra late canaliculatus vel applanatus, basin versus interdum aculeis rigidis solitariis vel confluentibus; subtus convexus, dorso aculeis solitariis rigidis, remotis; ad margines obtusus aculeis basin versus interdum laminaribus, elasticis, longioribus perpaucis, ad 5 cm. longis, brevioribus rigidis immixtis, apicem versus valde reductis armatus. *Segmenta* per greges approximata, gregibus alternantibus vel sub-oppositis ex segmentis 2–4 constatis, coriacea, elliptico-lanceolata, utrinque sensim vel abrupte attenuata, in apicem filiformem facile emorientem terminata, basi subito contracta; 5–7 plicatulo-costulata, 30–50 cm. longa, 2.5–4.5 cm. lata, supra saturate viridia, subtus pallidiora, secus costam mediam in parte terminali utrinque et remote aculeolata vel in uno latere inermia, ad margines aculeolis consimilibus sed brevioribus, apicem versus longioribus et magis confertis ciliata, venulis tranversis plurimis utrinque conspicuis. *Spadix foemineus* longi-pedunculatus, paniculatus: pedunculo ad 1 m. longo ancipiti, inermi vel ad margines aculeis acicularibus perpaucis remotis prædito, decidue fusco-leproso; rhachi florifera circ. 40 cm. longa, in ramos 3–5 divisa; ramis ad axillam callosis, alternis, fugaceo fusco-tomentosis, 10–20 cm. longis, utrinsecus spiculas 4–6 ferentibus; spiculis sinuosis utrinsecus 5–6 fructus gerentibus, eodemmodo tomentosis. *Spathae* primariæ ignotæ; spathellæ ut rhachis spicularum fusco-tomentosæ, annulares. *Involucrophorum* fructiferum, obconicum, pedicelliforme, obscure-angulare, 2–4 mm. longum, ad axillam conspicue callosum; involucrum in involucrophoro fere omnino immersum vel ad 1 mm. exsertum, patellæforme, integrum, orbiculare vel floris latus neutri versus magis productum, vertice cicatrulla orbiculari plus minusve tumida præditum; areola conspicua, altitudine sua latiore, cicatrulla tumescente. *Flores:* calyx floriferus urceolatus vel cyathiformis, apice obscure trifidus; corolla calyce duplo longior, segmentis longis mox emorientibus. *Perianthium* frunctiferum manifesto pedicelliformme, in parte basilari cyathiforme, apice segmentis explanatis. *Fructus* oblongi, utrinque abrupte et rotundato contracti, cum perianthio ac rostello utroque 2–3 mm. alto circ. 20–25 mm. longi, 13–15 mm. in diam. *Squamae* in orthostichis 15, rarius 16–17, dispositæ, medio sulcatæ, fusco-stramineæ, ad margines scariosæ, fascia intramarginali fusca vel leviter

purpurea (ad angulum inferiorem atriore) cinctæ. *Semen* oblongum, utrinque rotundatum, in uno latere applanatum, 15–17 mm. longum, 10–11 mm. latum, 9 mm. crassum; embryone basilari; albumine ruminato.

*Planta mascula* habitu sicut fœminea ut videtur. *Spadix* magnus et longi-pedunculatus; pedunculus anceps; rhachis ut in fœminea divisa et vestita. *Rami* primarii in ramos secundarios spiculas gerentes 3–4 divisi. *Spathae primariae* papyraceæ, exsuccæ, cinnamomeæ, extus indumento fusco fugaceo obtectæ, striatæ, inermes; externa longissima, circ. 30–40 cm. longa, bicarinata, apice sæpe fissa, acuminata. *Spiculae* 2–5 cm. longæ, porrectæ, sinuosæ, utrinsecus floribus bifariis 4–6 congestis. *Flores* 5 mm. longi; calyce tubuloso, cyathiforme, striato, obscure trifido; corolla striata, fere duplo longiore quam calyce, ad 2/3 in segmenta lanceolata divisa.

BRITISH NORTH BORNEO: Kinabalu Mountain Range: *Penibukan,* alt. 4,000–5,000 feet (Clemens: 31280, type in Singapore; 31280*a*; 30887; 31581; 50343; and 40754, male). *Gurulau Spur,* alt., circ. 5,000 feet (Clemens, 50547). *Dallas,* alt. 2,500–3,000 feet (Clemens: s.n. mature fruits but no leaves; 26793; 26807; 27156–*a*, male, no leaves; 27156; 27269).

The Dallas specimens have involucrophores distinctly longer than in the type and may prove to represent a distinct variety, but in the absence of better material I have refrained from giving them a varietal rank.

This species is very closely related to *D. virescens* from the Philippines and *D. longipes* from the Malay Peninsula and Malay Isles; but it is readily recognised from either of these by its distinctly grouped leaflets which have moreover their midribs (others are bare) sparingly spinulose in one or both surfaces, whereas in the other two species the leaflets are not distinctly grouped except perhaps in the lowermost and the uppermost part of the lamina. They (the leaflets) are also much more spinulose in the latter two species and often the side nerves (in *D. longipes* in the lower or both surfaces and in *D. virescens* in the upper surface only) also bear bristles. Perhaps *D. virescens* represent a link between *D. longipes* and *D. longipedunculatus.* I have noted that the leaflets are 5–7 nerved because I do not find any difference between subprimary and secondary nerves, though in nervation these leaflets cannot be easily distinguished from those of *D. longipes* except by their armature.

*D. periacanthus* Miq. resembles this species specially with regard to the grouping of the leaflets, but it has: a much shorter peduncle which is conspicuously spiny;

spherical fruits; leaflets with a midrib usually smooth or occasionally armed with a few bristles underneath the apex only; and a leaf-sheath armed with a much larger number of smaller spines and provided with a slight gibbosity below the petiole.

Forms actually much closer to *D. longipes* occur in Borneo as is evidenced by Elmer's no. 20840 collected at Tawao and listed by Merrill in *Univ. Calif. Publ. Bot. XV, 1929, p. 24,* without any specific epithet. Judging from the fragmentary material available in the Singapore herbarium, consisting of a portion of lamina and a pair of fruiting spikelets, I am inclined to think that this Elmer's specimen represents but a mere variety of *D. longipes* with smaller fruits having their scales arranged in 18 vertical rows. The leaflets seem to be inæquidistant and not distinctly grouped and their three costas are armed as in *D. longipes* with the exception that the two subprimary costas above are quite bare, a condition also found occasionally in the other species. Of the other parts which I have not seen, Merrill gives the following description: "The leaves about 3 m. long, flagellate [cirrate], the flattened spiny petiole about 1 m. in length, the spines on the basal sheathing parts flat, nearly black, 5 cm. long, arranged in transverse rows. Infructescences 45 cm. long, pendent, flattened green peduncles 60–90 cm. in length." Perhaps Merrill had no fruits and sufficient leaflets in the specimens examined by him, for he notes that "the material available for study is not sufficient for further identification".

**10. Dæmonorops micracanthus** (Griff.) Becc. in Hook. f. Fl. Brit. Ind. VI (1893) 467 et in Calc. Ann. XII (1911) 110 pl. 43; Ridl. Mat. Fl. Mal. Pen. II (1907) 180 et Fl. Mal. Pen. V (1925) 41 pp.

*Calamus micracanthus* Griff. in Calc. Journ. Nat. Hist. V (1844) 62 et Palms Brit. Ind. (1850) 72; Mart. Hist. Nat. Palm. III (1849) 339.

*D. draconcellus* Becc., Nelle Foreste di Borneo (1902) 324, 590, 608 et in Calc. Ann. XII (1911) 108 pl. 42; Merr. Bibliogr. Enum. Bornean Pl. (1921) 78. **syn. nov.**

*D. propinquus* Becc. *sensu* Ridl. Mat. Fl. Mal. Pen. II (1907) 181 et Fl. Mal. Pen. V (1925) 41 pp. **syn. nov.**

MALAY PENINSULA: *Kemaman* (Vaughan-Stevens in 1890). *Kedah:* Sungei Petani (Forest Dept. Coll. 10209 in herb. Kepong); Baling (Babjee, 10168 in Herb. Kepong). *Pahang:* Gunong Lesong (Lambak, 10006 in herb. Kepong); Sungei Lepar (Smith 6701 in herb. Kepong. *Negri Sembilan:* Palong Gemas (Hamid, 6380); Kuala Pilah (Moorhouse in 1904, sterile; in 1908, fertile); Bukit