

appears that the two female flowers are borne at each spathel except in the distal ends of the spikelets where one neuter (or male?) and a female occur at each spathel.

It is extremely difficult to make this species fit in any of the sixteen groups into which Beccari has subdivided the genus *Calamus*. If the presence of the long dilated, auriculiform, free apical extension of the primary spathes is disregarded, the species would certainly fall into the *Group V*. Further the scabridity on the spathes and spathels would place *C. Steenisii* into the *Group V-A*, of which sub-division no species is known to occur in the part of the Indonesia lying to the east of Borneo. No member of this group is known to possess very long ocrea at the mouth of the leaf-sheaths, a character which, if one disregards the abovementioned scabridity, would put the species into the *Group V-B*, and precisely in the section which includes the species that occur in New Guinea alone.

But if the dilated ends of the primary spathes are taken into consideration, two *Groups VI* and *XVI* may partly lay claim to this species, though again no species belonging to both these groups are known to occur eastwards beyond Borneo. All the species of *Group VI* have spathes which split or open longitudinally almost down to the base into loriiform laminæ. The species of *Group XVI*, though have the primary spathes similar those in *C. Steenisii*, differ from the latter in that they all have very much compressed, short spadices and ruminant seeds (*C. Steenisii* has very long spadices and non-ruminant seeds).

All this suggests the necessity of redefining *Groups V*, *VI* and *XVI*, or of creating a new one so as to keep several of the New Guinea species together and to include such species which, together with *C. anomalus* Burret, *C. Lauterbachii* Becc., *C. nannostachys* Burret, and *C. Steenisii*, cannot be made to fit definitely into any of the sixteen groups of Beccari, though all of them show marked affinities to the species in the three groups referred to above.

Calamus inopinatus Furtado spec nov. (*Planta mascula tantum visa*). *Caudex* soboliferus, acaulis, interdum ad 35 cm. longus, 2.5 cm. crassus, per totam altitudinem radices ærias ad 8 mm. crassas solum attingentes gerens. *Vagina* frondium 10-15 cm. longa, haud flagellifera et non gibbosa, in latere ventrali ad basin usque vel fere aperta, in petiolum sensim transiens, aculeis laminaribus, elasticis, ad 5 cm. longis, acuminatis, basi ad 4 mm. latis, digitatis vel interdum per series obscuras dispositis armata. *Ochrea* in modo alæ secus margines vaginæ enata, apice truncata, haud in lobos liberos producta, in alis utraque 6-10 mm. lata, rigida, fragilis, aculeis rigidis, acicularibus, atris, ad 5 mm. longis, basi, per series transversales interruptas connatis prædicta, basin versus sensim in vagina evanescens. *Petiolus* 20-30

cm. longus, circ. 6 mm. crassus, teretiusculus, supra anguste canaliculatus, sulcos aculeorum exhibens, aculeis acuminatis, laminaribus, elasticis, stramineis ad 2.5 cm. longis, basi ad 4 mm. latis, apicem petioli versus solitariis, basin versus saepe digitatis vel oblique subverticillatis. *Lamina* ad 1 mm. longa, imparipinnata vel fere; secus rhacheos dorsum in duabus partibus inferioribus tantum aculeis solitariis laminaribus, distantibus praedita, signis aculeorum conspicuis impressa. *Segmenta* numerosissima, æquidistantia vel fere, alternantia vel subopposita, 3–3.5 cm. inter se remota, ad 35 cm. longa, ad 2 cm. lata, lineario ensiformia, in apicem filiformem, setulosam terminata, intermediaria longissima, subtus roseo-tomentellosa, secus costas tres supra medium vel paulo infra setulosa, supra inermia, lævigata. *Inflorescentiae masculæ* inermes, haud flagelliformes; frondibus breviores, ad 60 cm. longæ, in ramis primariis 3–4 divisæ, in rhachi spathisque deciduo fusco-furfuraceæ, pedunculo in vagina ininclude, nonnihil infra ochreæ apicem attigente. *Spathæ*: *primarie* plus minusve striatæ, ad 6 cm. longæ, tubulosæ, apice oblique truncatæ, unilateraliter acuminatae et in altero latere fissæ; *secundarie* consimiles, æquilongæ vel minores; *tertiarie* minores, infundibuliformes, acuminatae, striatæ. *Spathellæ* consimiles, apiculatae, in altero latere fissæ. *Rami primarii* 10–15 cm. longi, interdum ramus basalis ad 40 cm. longus, nonnihil infra os spatharum inserti, in ramos secundarios, interdum tertiaros, eodemmodo infra orificium spatharum orientes divisi. *Spiculæ* prope basin spatharum orientes; *primarie* ad 9 cm. longæ, basin versus secundarias 2–3 cm. longas saepe ferentes. *Flores* solitarii, alternati, confertissimi, ex spathellis usque duas partes exserti, in involucro profundo cupulari insidentes, utrinsecus in speculis primariis ad 15, ac in secundariis 9–12, ad 4 mm. longi, petalis sesqui longioribus quam sepalis, ambobus striatis, ovato lanceolatis.

PATRIA: ignota.

The plant is cultivated in the Botanic Gardens, Buitenzorg, and bears the gardens' no. X.E. 24. The specimens described here were collected by me under the Singapore Field number 30919. The holotype is preserved in the Singapore herbarium. Duplicates will be distributed to the herbaria of Buitenzorg, Leiden, Kew and Berlin.

This peculiar species belongs evidently to the *Group II* of Beccari and seems to be closely related to *C. Burckianus* Becc. from Java, which is probably also a stemless species; but it is described to have its petiole unarmed, leaf rachis unarmed or armed with small claws beneath, and the primary (three) costæ of the leaflets setose above and sometimes also beneath, whereas *C. inopinatus* has its petiole and rachis of the leaves armed with

rather long, laminar spines, its leaflets quite smooth above but armed along the three ribs beneath, as well as covered with minute, pinkish tomentum in the lower surface. The only other stemless *Calamus* is *C. pygmaeus* Becc., a species belonging to the Group V of Beccari and, therefore, differing in its spikelets and spadix-branches being sessile, that is, arising at the mouth of their respective spathes.