

NOTES ON THE MARANTACEAE OF SURINAME

BY

A. M. E. JONKER-VERHOEF AND F. P. JONKER
(Botanical Museum and Herbarium, Utrecht)

(received February 15th, 1955)

The list of *Marantaceae* published by PULLE (1906) comprises 20 species belonging to 6 genera, the largest genus being *Calathea* with 8 species. It was found, however, that one of the species does not belong to the family: investigation of the type of *Calathea strobilifera* (Miq.) Koern., viz. Kegel 1469 [GOET], showed that it pertains to *Renalmia strobilifera* Poepp. et Endl. (*Zingiberaceae*). The record of another species, *Calathea allouia* (Aubl.) Lindl. appeared to be based on a misidentification: the collection Focke 893 cited under this name by PULLE (1906) belongs to *C. grandis* O. G. Peters. Later on PULLE (1909) recorded the occurrence of one species more of this family in Suriname, viz. *Myrosma polystachya* Pulle, a new species. Since then no further additions to the list of Suriname species have been published.

Our investigation of the Suriname material showed the occurrence of 33 species belonging to 8 genera. In the following pages a few taxonomic and phytogeographical remarks are made on some of these genera and species; they also contain the description of a new genus.

CALATHEA G. F. W. Mey.

As mentioned above we had to remove from PULLE's list two species: *Calathea allouia* (Aubl.) Lindl. and *C. strobilifera* (Miq.) Koern. To the remaining 6 species we are adding 6 other ones, recorded for the first time from Suriname, viz.:

1. *C. lutea* (Aubl.) Spreng., once collected by the Forestry Department in the Wilhelmina Mountains; it was already known from the West-Indian Islands and tropical America.
2. *C. legrelleana* Reg., already collected by Splitgerber in 1838 but overlooked by PULLE; since then two other collections have been added. This species has been recorded from Ecuador, Colombia and Amazonian Brazil.
3. *C. cyclophora* Baker, hitherto known only from British Guiana, but recently collected four times by Lanjouw and Lindeman in Suriname.

Our investigation of the material in the Paris herbarium showed that this species occurs in French Guiana too, where it was collected by Leprieur and by Richard.

4. *C. micans* (Kl.) Koern., known before from Nicaragua, Guatemala, French and British Guiana, Amazonian Brazil, Colombia and Peru. In our opinion *C. albicans* Brogn. ex K. Schum. = *C. micans* var. *robustior* Koern. is to be considered a synonym. Both taxa have been based on specimens of a somewhat more robust growth.

5. *C. ovata* (Nees et Mart.) Lindl., a species up till now known only from Brazil, Bahia. Tubers of this species were collected by GEIJSKES at Mt. Temomairem, Toemoek Hoemak Mts., Upper Litanie River, and brought to Paramaribo where they were planted in the garden of the Agricultural Experimental Station; flowering plants gathered there were studied by us. The tubers are said to be eaten by the Wama or Wayaré hoelé indians. The plants are known to them as "oeroewa" and to the Oajana indians as "pisoï". The Wama indians have no agriculture; the edible tubers are collected from the wild plants, see GEIJSKES (1942). It is remarkable that the species has never been reported from the area between southern Suriname and Ilheos, Bahia, where the type and the other material known up till now were collected.

6. *C. mansonis* Koern. This species known from Bolivia, Brazil and French Guiana was collected in Suriname already about a century ago by Dr Voltz, later on it was collected again. The Voltz collection was regarded by PULLE (1906) as belonging to *C. propinqua* (Poepp. et Endl.) Koern.; the two species, indeed, show a close resemblance. *C. mansonis* is more robust and its inflorescence is always borne by a scape, but the latter may be very short. The inflorescence of *C. propinqua* is always sessile. The flowers of *C. mansonis* are more conspicuously pilose and their corolla tube is circ. four times as wide as that of *C. propinqua*. The corolla tube of *C. propinqua* is more than twice as long as the petals; in *C. mansonis* it is but slightly longer than the petals. The latter are slightly wider in *C. propinqua*. *C. propinqua* is known also from Amazonian Brazil and French Guiana. We are inclined, but before more material is known do not yet feel entitled, to consider *C. mansonis* a variety of *C. propinqua*.

C. villosa Lindl., known from Panama, Costa Rica, Colombia, Venezuela, Amazonian Brazil and British Guiana, is to be expected in Suriname.

MARANTA L.

In the genus *Maranta* PULLE (1906) listed two species, viz. *M. arundinacea* L. and *M. divaricata* Roscoe. We are adding two more species:

1. *M. orbiculata* (Koern.) K. Schum., once collected in Suriname by Rombouts at the Upper Sipaliwini River. Before it had been collected in Brazil only.

2. *M. humilis* Aubl. This species was collected by J. and P. A. Florschütz in 1951 between Ebba top and Pakka Pakka, Saramacca

River. It was described from French Guiana by AUBLET (1775) and, as far as we know, not collected again afterwards, though it was cited by KLOTZSCH (1848) for British Guiana. The Florschütz collection, though more robust, is undoubtedly conspecific with the Aublet specimen; the latter was studied by us from the Rousseau herbarium, recently purchased by the Paris herbarium, vid. LANJOUW & UITTEN (1940). As this species was unknown to K. SCHUMANN (1902), the last monographer of the family, we wish to state that it belongs to the subgenus *Koernickea* K. Schum. It shows a close affinity to *M. longipes* K. Schum., but differs by the presence of a petiole (between sheath and pulvinus), by the shorter peduncle and by the longer petals and staminodes. The number of floral bracts is in *M. humilis* always four and in *M. longipes* more than four.

MONOPHYLLANTHE K. Schum.

The only species of this genus, *M. oligophylla* K. Schum., once before collected, viz. by Sagot in French Guiana, appears to have been collected three times in Suriname: once by Hulk at the Upper Gran Rio and twice by J. and P. A. Florschütz, respectively on the Brownsberg and at the Avanavero falls, Kabalebo River. As comparison with our own description in the "Flora of Suriname" will show, neither the floral characters nor the morphology of the inflorescence were correctly described by K. SCHUMANN (1902), the author of the genus, but as the differences with its allies are still sufficiently marked, we have maintained it.

MYROSMA L. f. and HYLAEANTHE Jonk. et Jonk.

The type of the genus *Myrosma* originated from Suriname where it was collected by Dalberg. The genus is characterized by the structure of the outer whorl of the androecium, which consists of two staminodes, by its very short corolla tube and by the persistent, coriaceous floral bracts, which subtend two or more flower pairs.

PULLE (1909) described a new species from Suriname, *Myrosma polystachya* Pulle, characterized by its inflorescence. He stated that one of the two outer staminodes was very small or absent. This species was up till now not collected again in Suriname; as far as we know it has been collected once in French Guiana (Geay 855 [P]). In our investigation of the type material we failed to observe the second outer staminode. Moreover we observed a striking resemblance in flower structure, in general habit and in the way in which the leaf sheaths decay into a reticulate mass of fibres, with *Myrosma hexantha* (Poepp. et Endl.) K. Schum., described by its authors in the genus *Thalia*, transferred by D. DIETRICH (1839) to *Maranta* and, by K. SCHUMANN (1902) in his monograph of the family, to *Myrosma*. The same holds for *Myrosma unilateralis* (Poepp. et Endl.) K. Schum. Both *M. hexantha* and *M. unilateralis*, originally described from Peru by POEPPIG and ENDLICHER (1838), appear to occur in Suriname too.

M. hexantha which is also known from Brazil, was collected at the Corantijne River by Hulk and in the Nassau Range by Lanjouw and Lindeman; *M. unilateralis*, known before from Peru only, was collected by the Forestry Department along Coppename creek, Lucie River, during the expedition to the Wilhelmina Mountains, 1926. The three species have chartaceous, oblong leaf blades, which are acuminate or apiculate at the apex and cuneate at the base. Their lower surface is light coloured and their margins are in herbarium material involute. Moreover the floral bracts are not coriaceous and the corolla tube is of the same length as the calyx or slightly shorter, but not, as in *Myrosma*, very short.

The generic limits of the genus *Myrosma* and several related genera are not always well defined and often inapplicable, as was pointed out also by WOODSON (1942), p. 333.

For all these reasons we feel entitled to unite *M. polystachya*, *M. hexantha*, *M. unilateralis*, as well as *M. hoffmannii* K. Schum. from Costa Rica into a new genus *Hylaeante*. We select *M. hexantha*, as it has been most often collected, as the type species.

Hylaeante Jonk. et Jonk., gen. nov. Folia rosulata, petiolo ad 2 cm longo instructa; pulvinus ad 6 mm longus; vagina membranacea ultimo in fibrillos reticulatos dissoluta; lamina chartacea, oblonga, subtus pallidior, basi cuneata, in sicco margine involutus. Bractaea herbacea. Paris florum pedunculati 3 vel ultra. Flores pedicellati; corollae tubus sepalis subaequilongus; staminodium exterius 1; staminodium cucullatum appendiculo pendulo obtuso instructum; stamen appendiculo petaloideo antheram superante munitum; ovarium imperfecte triloculare; locus fertilis 1; ovulum basale solitarium.

Typus: *Hylaeante hexantha* (Poepp. et Endl.) Jonk. et Jonk. = *Thalia hexantha* Poepp. et Endl. = *Maranta hexantha* (Poepp. et Endl.) D. Dietr. = *Myrosma hexantha* (Poepp. et Endl.) K. Schum.

Species 4:

1. **Hylaeante hexantha** (Poepp. et Endl.) Jonk. et Jonk., vide supra.
2. **Hylaeante unilateralis** (Poepp. et Endl.) Jonk. et Jonk. = *Thalia unilateralis* Poepp. et Endl. = *Maranta unilateralis* (Poepp. et Endl.) D. Dietr. = *Saranthe unilateralis* (Poepp. et Endl.) Eichl. = *Myrosma unilateralis* (Poepp. et Endl.) K. Schum.
3. **Hylaeante hoffmannii** (K. Schum.) Jonk. et Jonk. = *Myrosma hoffmannii* K. Schum.
4. **Hylaeante polystachya** (Pulle) Jonk. et Jonk. = *Myrosma polystachya* Pulle.

We named the genus after the "hylaea" in which the species occur, adding the suffix "anthe" to bring it in accordance with similar generic names in the family e.g. *Ctenanthe*, *Saranthe*, *Stromanthe*.

THALIA L.

PULLE (1906) mentioned for Suriname a single species, *Thalia geniculata* L., known from tropical and subtropical America. Both Mr N. Y. SANDWITH, Kew Herbarium, and Mr N. W. SIMMONDS, Trinidad, drew our attention to *Thalia trichocalyx*, described by GAGNEPAIN (1904) from Mexico and French Guiana, from *T. geniculata* differing by shorter internodes between the floral bracts, much smaller flowers and floral bracts, sepals provided with long, slender, white hairs, and a horse-shoe-shaped aril.

According to Mr SIMMONDS *T. geniculata* is in the field easily distinguishable by its stouter, not taller, appearance and by the sterile bracts being red or purple beneath. In Trinidad both species grow together. After examining the material we quite agree with this distinction and we were much surprised to observe that most of the Suriname material belongs to *T. trichocalyx*. *T. geniculata* apparently does occur in Suriname, but this species has been collected only three times and that was a century ago (Splitgerber 169 [L], Kegel 603 [GOET], Hostmann 433 [K]).

ISCHNOSIPHON Koern.

PULLE (1906) mentioned 4 species, one of which, viz. *I. violaceus* Pulle, was described as new. The latter has been collected again by J. and P. A. Florschütz in 1951; up till now it is not recorded from other countries.

It is closely related to *I. martianus* Eichl., a less tall species, differing by the membranous margin of its leaf sheath which in herbarium material is chestnut-coloured, by its shorter leaf sheath, the very short or absent petiole, the shorter pulvinus, the more narrow and slightly shorter leaf blade, the much shorter peduncles and the slightly longer corolla tube. The latter species, known from Brazil and French Guiana, was recently for the first time collected in Suriname by Lindeman at Ricanau, Cottica River.

I. surinamensis (Miq.) Koern., cited by PULLE and by all monographers, is regarded by us as conspecific with *I. leucophaeus* (Poepp. et Endl.) Koern., known now from Panama, Guiana, Venezuela, Brazil and Peru. *I. ovatus* Koern. from Brazil is considered by us conspecific with *I. leucophaeus*.

Not mentioned by PULLE was *I. arouma* (Aubl.) Koern., already collected in Suriname in the 18th century by Rolander and after this collection several times from 1915 onwards. This species has been recorded from the West-Indian Islands, the Guianas and Brazil.

The *Ischnosiphon* species are known by the native indians under the vernacular name "warimbo" and other names. The splitted stems, especially of *I. gracilis* (Rudge) Koern., but also of *I. obliquus* (Rudge) Koern. and *I. arouma* (Aubl.) Koern., are used for basket weaving (STAHEL, 1944).

MONOTAGMA K. Schum.

Of the four species listed by PULLE (1906) *M. laxum* (Poepp. et Endl.) K. Schum. was included because Kappler 1535 was identified as such, but this specimen appeared to belong to *M. plurispicatum* (Koern.) K. Schum. The genuine *M. laxum* was, however, collected in 1936 by H. E. Rombouts in Suriname at the Upper Sipaliwini River. This species differs from *M. plurispicatum* by the absence of the prominent ring at the base of the pulvinus.

MACBRIDE (1931) pointed out that the well-known *M. parkeri* (Rosc.) K. Schum., also cited by PULLE, was conspecific with *Maranta spicata* of Aublet. Consequently the species has to be named *Monotagma spicatum* (Aubl.) Macbr.

PULLE (1906) described a new species, *M. surinamense* Pulle, that, in our opinion, is conspecific with *M. secundum* (Peters.) K. Schum.

As already suggested by AMSHOFF (1948) *M. guianense* (Koern.) K. Schum., described from French Guiana and cited by PULLE from Suriname, must be considered conspecific with *M. plurispicatum* (Koern.) K. Schum., described in the same publication (KOERNICKE, 1862) from Brazil, where the species has since then been collected several times. It seemed preferable to maintain the name *M. plurispicatum* (Koern.) K. Schum. as it is better known, and to consider *M. guianense* (Koern.) K. Schum. a synonym.

As representatives of this family may be of importance for characterizing vegetation units and as the plants do not always flower and as, moreover, the diagnostic characters are often distinguishable only by means of high magnifications, a key based on sterile material would, in our opinion, be desirable. Such a key has been given by LEONARD and MULLENDERS (1950) for the species of Belgian Congo. The characters used by us for this key were derived from the habit, the kind of pubescence and the shape of the leaf blade, the length of pulvinus and petiole, etc.

- 1a. Plants provided with a single leaf (seldom 2 leaves); the latter oblanceolate to elliptical, 11–15.5 cm long and 2.5–5.5 cm wide; petiole and midrib pilose above.
 *Monophyllanthe oligophylla* K. Schum.
- b. Plants provided with two or, usually, more leaves 2
- 2a. Leaves arranged in a rosette at the top of a rather stout stem. 3
- b. Leaves arranged in a radical rosette or along stem and branches 6
- 3a. Pulvinus glabrous. Midrib glabrous above. Leaf blade coriaceous, oblique, ovate, 27–46 cm long and 10–25 cm wide. *Ischnosiphon obliquus* (Rudge) Koern.
- b. Pulvinus pilose above 4
- 4a. Leaf blade oblique, ovate, excentrically acuminate at the apex and rounded to truncate at the base, 20–51 cm long and 11–26 cm wide. . *Ischnosiphon arouma* (Aubl.) Koern.

- b. Leaf blade almost symmetrical, elliptical, acute to cuneate at the base and acuminate at the apex. 5
- 5a. Leaf sheath coriaceous, 14.5–20 cm long; petiole 1.5–8 cm long; pulvinus 2–3 cm long; leaf blade up to 32 cm long and 9 cm wide. Plant 1–2 m high. . . *Ischnosiphon violaceus* Pulle
- b. Leaf sheath 6–9 cm long; its margin membranous and, in herbarium material, chestnut-coloured; petiole up to 0.7 cm long or absent; pulvinus 0.7–1.5 cm long; leaf blade up to 26 cm long and 5.5 cm wide. Plant 60–80 cm high.
. *Ischnosiphon martianus* Eichl. ex Peters.
- 6a. Leafy and, sometimes, branched stems arising from a radical rosette 7
- b. Leaves more or less arranged in a radical rosette; the latter occasionally reduced to one or two leaves; sometimes also with one or more leaves borne at the top of the scape. . . . 10
- 7a. Leaf blade oblique, lanceolate to ovate, 7–22 cm long and 4–9 cm wide, glaucous-pruinose beneath except a, 1 cm wide, green margin at one side, in herbarium material often chestnut-coloured beneath. Petiole usually absent.
. *Ischnosiphon gracilis* (Rudge) Koern.
- b. Leaf blade symmetrical 8
- 8a. Leaf blade ovate, acuminate at the apex, rounded to truncate at the base, 15–31 cm long and 7.5–16.5 cm wide, glaucous-pruinose beneath. Pulvinus 1.5–3.5 cm long; petiole up to 34 cm long; leaf sheath 11–26 cm long.
. *Ischnosiphon leucophaeus* (Poepp. & Endl.) Koern.
- b. Leaf blade ovate-lanceolate, either attenuate, acuminate, or acute at the apex, rounded at the base. Pulvinus up to 11 mm long; petiole usually very short or absent but occasionally, in the leaves of the rosette, up to 1 cm long; leaf sheath up to 40 cm long 9
- 9a. Sheath and petiole pilose, glabrescent; pulvinus densely pilose. Leaf blade slightly pilose along the midrib, 6–28 cm long and 5–8 cm wide. Rhizome swollen (arrowroot)
. *Maranta arundinacea* L.
- b. Sheath sparsely pilose; petiole usually absent; pulvinus pilose above. Leaf blade glabrous, 7–24 cm long and 2–12 cm wide; midrib slightly pilose at the base beneath. Rhizome not swollen *Maranta divaricata* Rosc.
- 10a. Pulvinus provided with a prominent basal ring. 11
- b. Pulvinus without basal ring. 13
- 11a. Leaf blade slightly oblique, ovate-lanceolate to elliptical, either acute at both ends or the apex slightly acuminate
. *Monotagma secundum* (Peters.) K. Schum.
- b. Leaf blade distinctly oblique, ovate to ovate-lanceolate, rounded and contracted at the base, excentrically acuminate at the apex 12
- 12a. Pulvinus and midrib pilose above. Leaf blade pilose along the

- margin, 14–55 cm long and 5–18 cm wide.
 *Monotagma plurispicatum* (Koern.) K. Schum.
- b. Pulvinus pubescent all around; midrib and margin of the leaf blade pilose in the apical half, glabrescent. Leaf blade 25–43 cm long and 9–18 cm wide.
 *Monotagma spicatum* (Aubl.) Macbr.
- 13a. Pulvinus always longer than 3 cm. Stout, robust herbs 14
 b. Pulvinus usually shorter than 3 cm 19
- 14a. Joint pilose all around when young; midrib of the leaf blade pilose beneath. Leaf blade lanceolate, apiculate at the apex, rounded and acuminate at the base, 30–68 cm long and 12–25 cm wide *Calathea comosa* (L. f.) Lindl.
- b. Pulvinus and midrib glabrous 15
- 15a. Leaf without sheath (see also *Calathea grandis* Peters.) Leaf blade elliptical, 30–41.5 cm long and 9–13.5 cm wide; basal part of the midrib pilose above. *Calathea zingiberina* Koern.
- b. Sheath present. Midrib glabrous 16
- 16a. Leaf blade ovate, 27–84 cm long 17
 b. Leaf blade elliptical to lanceolate, up to 60 cm long 18
- 17a. Pulvinus 5–10 cm long; sheath unknown. Leaf blade ovate, rounded at the base and, sometimes, near the pulvinus shortly contracted, acute at the apex, 20–74 cm long and 12–26 cm wide *Calathea grandis* Peters.
- b. Pulvinus 5.5–16 cm long; sheath circ. 38 cm long. Leaf blade ovate or obovate, rounded at the base and near the pulvinus shortly contracted, rounded to obtuse at the apex, 27–150 cm long and 19–60 cm wide. *Calathea lutea* (Aubl.) Spreng.
- 18a. Leaf blade elliptical, 23–60 cm long and 10–26 cm wide. Leaf sheath puberulous. *Calathea elliptica* (Rosc.) K. Schum.
- b. Leaf blade elliptical to lanceolate, 26–55 cm long and 7–22 cm wide. Leaf sheath provided with appressed hairs.
 *Calathea altissima* (Poepp. & Endl.) Koern.
- 19a. Pulvinus always shorter than 1 cm 20
 b. Pulvinus (0.5) 1–3 cm long 27
- 20a. Leaf sheath leaving a rest of reticulated fibres when decayed. Petiole either absent or up to 1.5 cm long. Leaf blade chartaceous, cuneate at the base, light coloured beneath; margin involute in herbarium material. 21
 b. Leaf sheath not leaving a rest of reticulated fibres. 23
- 21a. Leaf blade glabrous, elliptical, 13–30 cm long and 3.5–7 cm wide, acuminate at the apex; sheath 5–28 cm long.
 *Hylaeantho polystachya* (Pulle) Jonk. & Jonk.
- b. Leaf blade oblanceolate or, sometimes, obovate, 6–11.5 cm wide 22
- 22a. Leaf blade glabrous, oblanceolate, 20–45 cm long, distinctly apiculate at the apex.
 *Hylaeantho hexantha* (Poepp. & Endl.) Jonk. & Jonk.
- b. Leaf blade oblanceolate to obovate, 20–25(36) cm long, usually wider and shorter than in the preceding species, not

- or slightly apiculate at the apex; midrib and some of the lateral veins pilose.
- *Hylaeante unilateralis* (Poepp. & Endl.) Jonk. & Jonk.
- 23a. Petiole pilose above. Leaf blade falcate, elliptical, acute at both ends, 3–14 cm long and 1.5–4.5 cm wide. Leaf sheath 2.5–12 cm long; petiole 0.3–14 cm long.
- *Calathea micans* (Klotzsch) Koern.
- b. Leaf blade not falcate, usually larger 24
- 24a. Leaf blade elliptical 25
- b. Leaf blade obovate 26
- 25a. Leaf blade 8.5–14.5 cm long and 3.5 cm wide, acuminate at the apex and acute at the base, pilose on both surfaces, glabrescent above. Leaf sheath glabrous, 2.5–15 cm long; petiole 0–6 cm long, densely pilose above.
- *Myrosma cannifolia* L. f.
- b. Leaf blade 8.5–24 cm long and 5–10 cm wide, rounded and acuminate at the apex, rounded at the base; midrib pilose. Leaf sheath sparsely pilose, 7–23 cm long; petiole 0.1–12.5 cm long, glabrous; pulvinus pilose above.
- *Maranta humilis* Aubl.
- 26a. Leaf sheaths and cataphylls densely golden-brown at the base; sheath 7–21 cm long; petiole 0–20 cm long, glabrous; pulvinus pilose above. Leaf blade elliptical to oblanceolate, oblique, acuminate at the apex, either rounded or acute at the base, 13–27 cm long and 4–11.5 cm wide, glabrous above, appressed pilose beneath.
- *Calathea mansonis* Koern.
- b. Leaf sheaths and cataphylls not as densely pilose as in the preceding species. Sheath 3–16 cm long; petiole 0–10 cm long, pilose; pulvinus pilose above. Leaf blade oblanceolate, acuminate to apiculate at the apex and acute to cuneate at the base, 6–33 cm long and 3–14 cm wide.
- *Calathea propinqua* (Poepp. & Endl.) Koern.
- 27a. Pulvinus glabrous 28
- b. Pulvinus pilose 30
- 28a. Leaf blade subcoriaceous, suborbiculate to broadly elliptical, rounded and excentrically acuminate at the apex and rounded or subacute at the base, 16–27 cm long and 10–20 cm wide, pilose at the apex above. Petiole usually absent but occasionally up to 6 mm long; leaf sheath 12–17.5 cm long, more or less bi-auriculate at the apex, subcoriaceous
- *Maranta orbiculata* (Koern.) K. Schum.
- b. Leaf blade ovate-lanceolate, acute or acuminate at the apex, rounded at the base, glabrous 29
- 29a. Bracts subtending the inflorescence branches red or purple beneath and green and waxy above, up to 16 cm long. Petiole glabrous, 7–25 cm long. Leaf blade 38–60 cm long and up to 20 cm wide.
- *Thalia geniculata* L.
- b. Bracts subtending the inflorescence branches green, up to 40 cm long. Petiole up to 23 cm long. Leaf blade 26–58 cm long

- and 5.5–24 cm wide *Thalia trichocalyx* Gagnep.
- 30a. Pulvinus pilose all around, hirsute above; petiole puberulous, 16–34 cm long; leaf sheath 7–19 cm long. Leaf blade elliptical, distinctly oblique, maculate above, blue-purple beneath, 13–33 cm long and 10–17 cm wide; midrib glabrous above, puberulous beneath *Calathea legrelleana* Reg. 31
- b. Pulvinus pilose above
- 31a. Leaf blade herbaceous, elliptical, nearly symmetrical, cuneate at the base and cuspidate at the apex, 14–34 cm long and 4.5–8 cm wide, pilose above, glabrous beneath. Leaf sheath pilose, 16–22 cm long; petiole usually absent. Tubers echinate, edible *Calathea ovata* (Nees & Mart.) Lindl. 32
- b. Leaf blade usually rounded at the base
- 32a. Leaf blade herbaceous, oblique, elliptical, glabrous, acuminate at the apex and either acute or rounded and contracted at the base, 23–39 cm long and 7–13.5 cm wide, marked with an irregular, light green central zone above, brown purple beneath. Petiole glabrous, 11–57 cm long; leaf sheath 6–17 cm long, herbaceous. *Calathea cyclophora* Baker
- b. Leaf blade coriaceous, distinctly oblique, lanceolate or semi-ovate, shining above, excentrically and obtusely apiculate at the apex, rounded to truncate at the base, 30–43 cm long and 9.5–16.5 cm wide. Petiole absent in the leaf that subtends the inflorescence; its leaf sheath circ. 8 cm long
 *Monotagma laxum* (Poepp. & Endl.) K. Schum.

These investigations have been carried out in the Botanical Museum and Herbarium of the State University of Utrecht, Netherlands (Director: Dr J. LANJOUW). The authors wish to express their best thanks to the directors of the herbaria at Brussel, Genève, Göttingen, Kew, Leiden, München, Paris and Stockholm (Bergius Botanic Garden) for the loan of herbarium specimens. A special word of thanks is due to the directors and staff of the herbaria personally visited by them, viz. Brussel, Leiden and Paris, for the hospitality and assistance given during their stay. The authors are indebted to Mr N. Y. SANDWITH (Kew) and Mr N. W. SIMMONDS (Trinidad) for valuable information regarding the genus *Thalia* and to Dr C. E. B. BREMEKAMP for the revision of the English text.

REFERENCES

- AMSHOFF, G. J. H. 1948. Bull. Torr. Bot. Cl. 75: 210–211.
 AUBLET, F. 1775. Hist. Plant. Guian. Franç. 1: 4.
 DIETRICH, D. 1839. Synops. Plant. 1: 6.
 GAGNEPAIN, F. 1904. Bull. Soc. Bot. Fr. 51: 180.
 GEIJSKES, D. C. 1942. Met de Oajana's op stap: 74.
 KLOTZSCH, J. F. 1848. in R. SCHOMBURGK, Reisen in Br. Guian. 3: 918, 1125.
 KOERNICKE, F. 1862. Bull. Soc. Imp. Nat. Mosc. 35. 1: 1–147.
 LANJOUW, J. & H. UITTEN. 1940. Rec. Trav. Bot. Néerl. 37: 153.
 LEONARD, J. & W. MULLENDERS. 1950. Bull. Soc. Roy. Bot. Belg. 83: 5–32.
 MACBRIDE, J. F. 1931. Field Mus. Nat. Hist., Bot. 11.1: 14.

- POEPPIG, E. & S. ENDLICHER. 1838. *Nov. Gen. Spec. Plant.* 2: 19-25.
PULLE, A. A. 1906. *Enum. vasc. Pl. Surin.*: 109-113.
PULLE, A. A. 1909. *Rec. Trav. Bot. Néerl.* 6: 253-255.
SCHUMANN, K. 1901. in A. ENGLER, *Das Pflanzenr.* 4. 48: 1-184.
STAHEL, G. 1944. *Dept. Landb. Proefst. Sur. Bull.* 59, sec. ed.
WOODSON, R. E. 1942. *Ann. Missouri Bot. Gard.* 29: 333.