

## NOTES ON THE ARACEAE OF SURINAM III<sup>1)</sup>

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(received November 15th, 1965)

After the publication of part I and part II of this series a number of Aroids were collected in the interior of Surinam, chiefly by A. G. H. Daniels and F. P. Jonker during an expedition to the Emma Range in 1959. The following is an enumeration of species collected for the first time in Surinam in addition to records of recollections of rare taxa and critical notes on misinterpreted or confused species. The present authors also examined those specimens collected by J. van Donselaar and W. A. E. van Donselaar-ten Bokkel Huinink (1958/59), K. U. Kramer and W. H. E. Hekking (1960/61), J. G. Wessels Boer (1963), J. P. Schulz (1963) and P.A. Florschütz and P. J. M. Maas (1964/65).

### ***Dracontium* L.**

*Dracontium foecundum* Hook. f. was collected for the first time in Surinam by P. A. Florschütz and P. J. M. Maas. The species was hitherto known from British Guiana and Trinidad only.

It is closely related to *D. asperum* K. Koch, differing only in its much longer peduncle (30 cm or more) which in *D. asperum* is about as long as the spathe (up to 15 cm).

For description and literature, see Jonker and Jonker in *Flora of Suriname* 1 pt. 2, 1953, p. 7-8.

Lower Suriname Riv., plant. Peperpot (Florschütz and Maas 3162, fl. March 1965 [U]).

### ***Cyrtosperma* Griff.**

Up till now a single species - *C. spruceanum* (Schott) Engl. - was known from Surinam and only collected on a single occasion. Another species was only known from French Guiana and has now been found in S. Surinam as well.

*Cyrtosperma americanum* Engl. in Mart., *Flor. Bras.* III. 2 (1878), p. 117, tab. 22; Engler in D.C., *Mon. Phan.* II (1879), p. 272; Engler, *Das Pflanzenreich* IV. 23 C (1911), p. 22, Fig. 8.

Terrestrial herb; each plant provided with a single leaf and an inflorescence. Leaf blade sagittate-tripartite, herbaceous, up to 60 cm wide. Apical lobe triangular, up to 38 cm long, pinnatipartite; lateral

<sup>1)</sup> Part I in *Acta Botanica Neerlandica* 2, 1953, p. 349-362 (also published as *Mededelingen van het Botanisch Museum en Herbarium, Utrecht*, no. 118); part II in *Acta Botanica Neerlandica* 8, 1959, p. 139-155 (*Mededelingen* no. 154).

segments up to 20 cm long and 6 cm wide, often forked at the apex; apical segment elongate-rhomboid, up to 20 cm long and 17 cm wide. Basal lobes on the exterior side of their main ribs pinnatifid, on the inner side entire, up to 30 cm long. Sinus between the basal lobes penetrating to the main ribs of the latter, the denudate part up to 5 cm long. Petiole rough, brown-blotched, up to 130 cm long; basal part vaginate, 10–20 cm long. Peduncle rough, especially in the basal part, up to 110 cm long. Spathe white, tinged with purple in the basal part, or brown-purple, up to 25 cm long; the apical part spirally twisted, acute, shortly subulate. Spadix stipitate, shortly cylindrical, obtuse, up to 3.5 cm long and 0.7 cm in diameter; stipe 1–2 cm long. Tepals 4, cucullate, circ. 2.3 mm long and 2–2.3 mm wide. Filaments rather broad, ribbon-shaped, circ. 2 mm long and 1–1.8 mm wide; anthers circ. 0.6 mm long. Ovary ovoid to pear-shaped, circ. 2.3 mm long and 1.8 mm wide, 1-locular with a single, basal ovule.

Distribution: French Guiana.

Junction of Paloemeu Riv. and Tapanahoni Riv., in marshy creek valley among shrubs (Wessels Boer 1223, fl. Apr. [U]).

This species differs from *A. spruceanum* in the basal lobes of the tripartite leaf. These are pinnatifid on both sides of their main ribs in *C. spruceanum* and entire on the inner side and pinnatifid on the exterior side of their main ribs in *C. americanum*. The ovary contains 2 ovules in *C. spruceanum* and 1 in *C. americanum*. The seeds are smooth in *C. spruceanum* and cristate in *C. americanum*.

### **Anthurium** Schott

1. *Anthurium crassinervium* (Jacq.) Schott, a species already collected three times in the interior, appeared to be rather common in the Emma Range on bare rock, both dolerite and granite. *Vid.* I, p. 352. II, p. 139.

Daniëls and Jonker 807, 1285, 1286 [U].

2. *Anthurium huegelii* Schott. As mentioned before (I, p. 322) *Anthurium crassinervium* (Jacq.) Schott was often confused with *A. hookeri* Kunth and in the latter Engler wrongly included *A. huegelii* Schott. We agree with N. E. BROWN (1910) and SIMMONDS (1950) in considering this a distinct species. It was collected in Surinam for the first time in the Emma Range and later on in the Wilhelmina Mountains also.

*Anthurium huegelii* Schott, Prodr. (1860), p. 469; N. E. Brown in Gard. Chron. 48 (1910), p. 153; Simmonds in Kew Bull. (1950), p. 395; Jonker and Jonker in Act. Bot. Neerl. 2 (1953), p. 352; — *Anthurium trinitatis* Engl., Das Pflanzenr. IV. 23 B (1905), p. 73.

A usually epiphytic rosulate herb, according to Schulz also terrestrial (In Trinidad, according to Simmonds saxicolous in the drier districts and epiphytic on trees in the moister ones). Petiole sulcate, 5–19 cm long; joint 0.6–1.5 cm long. Leaf blade subcoriaceous,

spathulate, acute and mucronate at the apex, decurrent to obtuse at base, 75–90 cm long and 21–31 cm wide. Peduncle slender, 40–75 cm long. Spathe lanceolate, mucronate, amplexant, 5–19 cm long and 0.8–2 cm wide, green tinged with red outside. Spadix almost sessile, narrowly cylindrical, 8–27 cm long and up to 1 cm in diameter, vivid bluish-purple. Tepals cucullate, circ. 1.5 mm long and 1–1.5 mm wide. Stamens circ. 1 mm long and 0.2–0.4 mm wide. Ovary cylindrical, 2-locular, circ. 1.5 mm long and 1.5 mm in diameter; each cell containing a single ovule inserted in the middle of the dissepiment. Stigma sessile, discoid. Berries obovoid, white at base and purple at apex.

Distribution: West-Indian Islands, British Guiana.

Emma Range, Hendriktop, S slope, upper limit of cloud forest, alt. 950 m (Daniëls and Jonker 955, fl. Aug. 1959 [U]); Wilhelmina Mountains, Julianatop, alt. 1000 m (Schulz 10281, fl. Aug. 1963 [BBS, U]).

This species differs from *A. crassinervium* (Jacq.) Schott in its much shorter petiole and the subcoriaceous spathulate leaf blade which is slightly truncate at the base and, moreover, in its white with purple, obovoid berries which are scarlet and ellipsoid in *A. crassinervium*.

3. *Anthurium jenmanii* Engl., a species new to Surinam, belonging in the same group as the preceding species, characterized chiefly by its leaf shape.

*Anthurium jenmanii* Engl., Das Pflanzenreich IV. 23 B (1905), p. 72. Terrestrial, rosulate herb. Petiole stout, sulcate, 11–12 cm long and 1 cm in diameter; joint 0.5–1 cm long. Leaf blade coriaceous, elliptical, acute or acuminate and mucronate at the apex, rounded to truncate at the base, 48–75 cm long, 20–37 cm wide; truncate base 6–7 cm wide; midrib prominent. Peduncle 40–80 cm long and 1 cm in diameter. Spathe lanceolate, acuminate, 8–16 cm long and up to 1.5 cm wide. Spadix shortly oblique-stipitate, long and narrowly cylindrical, tapering towards the apex, purple-brown, 9–24 cm long and up to 1 cm in diameter, stipe up to 1 cm long. Sepals cucullate, circ. 1.5 mm long and 2 mm wide; petals circ. 2 mm long and 2 mm wide. Stamens circ. 2.25 mm long and 1 mm wide. Ovary cylindrical, 2-locular, circ. 2 mm long and 1 mm in diameter; each cell containing a single ovule inserted in the middle of the dissepiment. Stigma sessile, discoid.

Distribution: British Guiana, Trinidad, Colombia.

Emma Range, Wosuna fall, alt. 300 m, on granite slope (Daniëls and Jonker 833, fl. Aug. 1959 [U]).

Note: Simmonds 82 (Herb. Trinidad 13883), Trinidad, cited by SIMMONDS in Kew Bull. 1950, p. 395, under *A. huegelii* Schott belongs to this species and is, consequently, the first record from Trinidad. Lambert (in Claes) 2899, fl. Nov. 1926 [BR], represents the first collection from Colombia.

#### 4. *Anthurium lanjouwii* Jonk. et Jonk., n. sp. (Fig. 1)

Herba terrestris rosulata. Caudex brevis, cylindricus ad 15 cm longus; cataphylla lanceolata ad 3.5 cm longa et 1.8 cm lata, mox in fibras tenues resoluta. Internodia ad 0.5 cm longa, 1 cm crassa. Petiolus semiteres, 7–23 cm longus geniculo ad 1 cm longo instructus. Lamina coriacea, elliptica, basi obtusa vel cuneata, apice acuminata et mucronata, 23–36 cm longa, 9–19 cm lata. Pedunculus 17–35 cm longus. Spatha lanceolata, mucronata, ad 4.5 cm longa, 0.8 cm lata. Spadix breviter stipitatus, 5–14 cm longus, 0.2–0.6 cm crassus. Ovarium 2-loculare; loculis uniovulatis.

Holotypus: Daniels et Jonker 1241 in herbario U, e Surinamo in montibus Emmaketen australibus.

Paratypi: Daniëls et Jonker 1101 in cacuminae montis IJzermantop, Emmaketen [U]; Daniëls et Jonker 1264 in montibus Emmaketen australibus [U].

Derivatio nominis: Prof. Dr. J. Lanjouw herbarii Rheno-Traiectini.

Terrestrial rosulate herb. Stem cylindrical, up to 15 cm long, densely covered by adventitious roots and lanceolate cataphylls, up to 3.5 cm long and 1.8 cm wide, or their fibrous remains. Internodes up to 0.5 cm long and circ. 1 cm in diameter. Petiole semiterete, 7–23 cm long; joint up to 1 cm long. Leaf blade coriaceous, elliptical, obtuse or, sometimes, cuneate at the base, acuminate and mucronate at the apex, 23–36 cm long and 9–19 cm wide; midrib prominent, on both sides of it 6–7 prominent lateral veins. Peduncle slender, 17–35 cm long. Spathe lanceolate, prominently mucronate, green tinged with purple, 2.5–4.5 cm long and up to 0.8 cm wide. Spadix shortly stipitate, narrowly cylindrical, purplish-brown, 5–14 cm long and 0.2–0.6 cm in diameter. Tepals cucullate, 1.1–1.3 mm long; the outer ones circ. 0.8 mm wide; the inner ones circ. 0.5 mm wide. Ovary cylindrical, 2-locular, circ. 1 mm long and 0.5 mm in diameter; each locule containing a single pendulous ovule inserted in the middle of the dissepiment. Stigma sessile, discoid. Fruits unknown.

Distribution: rather common in the Southern part of the Emma Range only, on dolerite and sand stone.

Emma Range, IJzermantop, dolerite, alt. 850 m (Daniëls and Jonker 1101, fl. Sept. 1959 [U]; id., on sheer sand-stone slope (Daniëls and Jonker 1241 (holotype) & 1264, fl. Sept. 1959 [U]).

Note: We named this new species in honour of Professor Dr. J. Lanjouw, director of the Botanical Museum and Herbarium, State University of Utrecht, who took the initiative in organizing the Scientific Expedition to the Emma Range, Surinam, 1959.

#### *Monstera* Adans.

To the 4 species, already known from Surinam, we now add a 5th, known up till now from Costa Rica only.

*Monstera epipremnoides* Engl. in Bot. Jahrb. 37 (1905), p. 118; Engler und Krause, Das Pflanzenreich IV. 23 B (1908), p. 113.

Internodes 1–2 cm. Petiole vaginate except in the apical, up to 2 cm long geniculate part; vaginate part 22–32 cm long. Leaf blade thickly herbaceous, ovate, acuminate at the apex, truncate to rounded at the base, slightly cuneate near the base, fenestrate when young, finally deeply pinnatifid and, sometimes, fenestrate along the midrib,

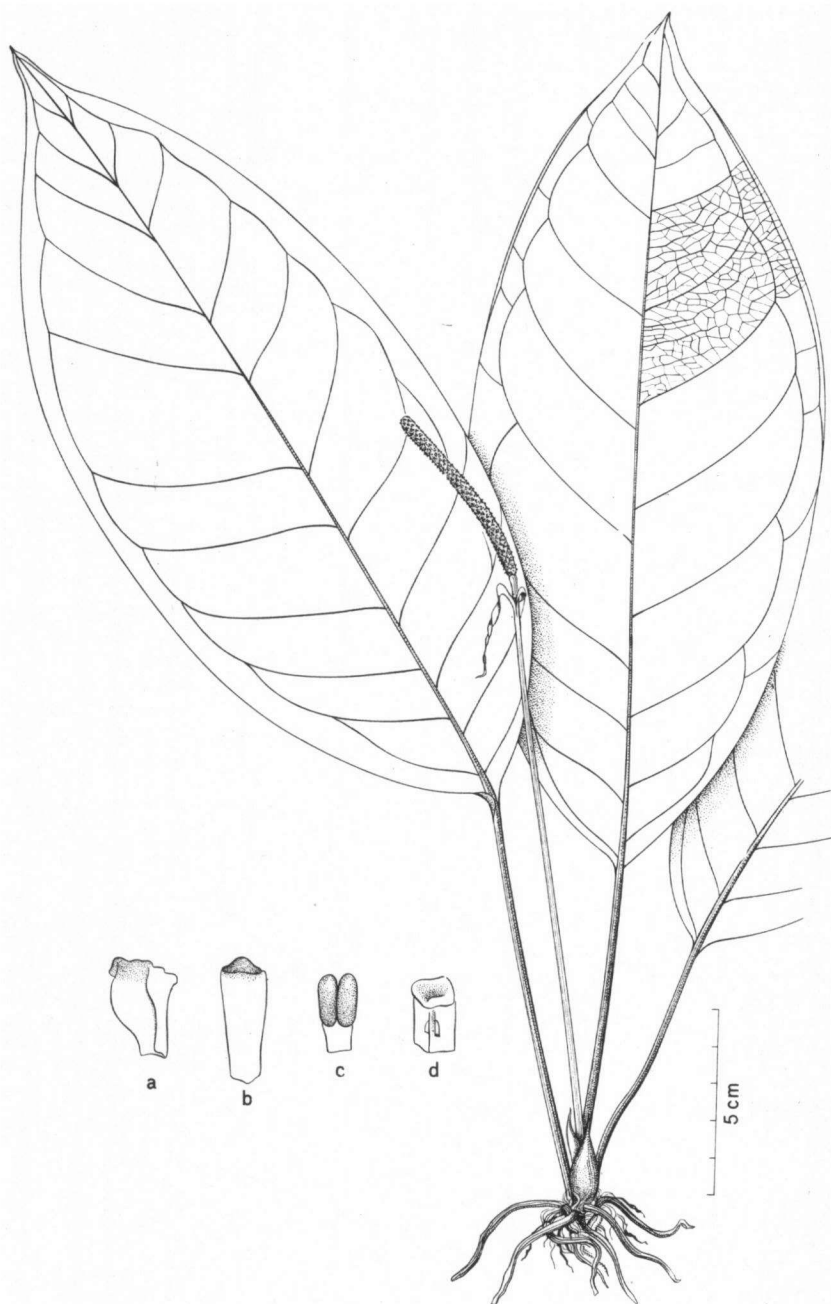


Fig. 1. *Anthurium lanjouwii* Jonk. et Jonk. a. outer tepal; b. inner tepal; c. stamen; d. pistil.

31–46 cm long and 18–27 cm wide. Pinnae falcate, except the basal ones broadened at the apex, 2–5 cm wide, provided with 1–2 principal veins, the basal pinnae with 3–4; apical lobe rhomboid. Peduncle up to 14 (–25) cm long. Spatha convolute, acuminate, deciduous, green when closed, circ. 8 cm long and 3 cm wide in the specimens from Surinam, according to Engler, l.c., 15–18 cm long and 6–7 cm wide. Spadix obliquely sessile, circ. 6 cm long in the Surinam material, according to Engler, l.c., 10 cm long. Fruit orange.

Distribution: Costa Rica.

Sipaliwini Riv., Palaime creek, in savannah forest (Wessels Boer 872, fl. and fr. March. 1963 [U]).

### **Dieffenbachia** Schott

To the 3 species, already known from Surinam, we now add a new species.

#### **Dieffenbachia elegans** Jonk. et Jonk., n. sp. (Fig.2).

Herba erecta lignicola. Caudiculus ad 15 cm longus internodiis ad 1 cm longis. Foliorum petiolus quam lamina 2–3 plo brevior, 7–12 cm longus; vagina truncata, 5–9 cm longa, ad 1 cm lata; lamina herbacea, elliptica vel oblanceolata interdum inaequilatera vel falcata, apice apiculata, mucronulata, basi cuneata, 14–30 cm longa, 4–9 cm lata. Inflorescentia axillaris, solitaria. Pedunculus 3.5–6 cm longus. Spatha convoluta, apiculata, 10–13 cm longa, pars inferior ad 2 cm diam. Spadix sessilis; pars feminea adnata, circ. 3 cm longa, a mascula interstitio libero subnudo 2.5 cm longo separata; pars mascula libera, obclavata, circ. 2 cm longa, 0.4 cm diam. Flores femineorum staminodiis 4; ovarium rhomboideum circ. 1 mm longum et circ. 1.5 mm diam. stigmatibus hypocrateriformi coronatum. Florum masculorum syndria 6–7-andra, 2–3 mm diam.

Holotypus: Wessels Boer 1573 in herbario U, e Surinamo in sylvia in dir. austr. a Kappel savanna prope pedem australem montis Tafelberg.

Erect herb containing a whitish latex, growing on decaying wood. Stem up to 15 cm long and up to 1 cm thick; internodes up to 1 cm long. Petiole long-vaginate, 7–12 cm long, including the tapering and truncate sheath; sheath 5–9 cm long and up to 1 cm wide. Leaf blade herbaceous, elliptical to oblanceolate, often oblique to falcate, apiculate and mucronulate at the apex, cuneate at the base, 14–39 cm long and 4.9 cm wide. Inflorescence solitary in the leaf axil. Peduncle 3.5–6 cm long. Spathe convolute, apiculate, yellowish green, turning to orange, 10–13 cm long and up to 2 cm in diameter in the basal part, opening in the apical part only. Spadix sessile; female part adenate, circ. 3 cm long and 0.3 cm in diameter; sterile part free, almost naked, circ. 2.5 cm long and 0.3 cm in diameter; male part free, obclavate, circ. 2 cm long and 0.4 cm in diameter. Female flowers scattered along the basal part of the spadix; staminodes 4, thick-scaleshaped, obovate, obtuse, swollen towards the apex, about half as long as the ovary; ovary rhomboid, circ. 1 mm high and 1.5 mm in diameter, crowned by an elongate, saucer-shaped stigma. Syndria consisting of 6–7 stamens, circ. 1 mm high and 2–3 mm in diameter. Fruits globose, circ. 0.5 cm in diameter.

Forest S of Kappel savanna, S of Tafelberg, along creek (Wessels Boer 1575, fl. and fr. June 1963 [U], holotype).

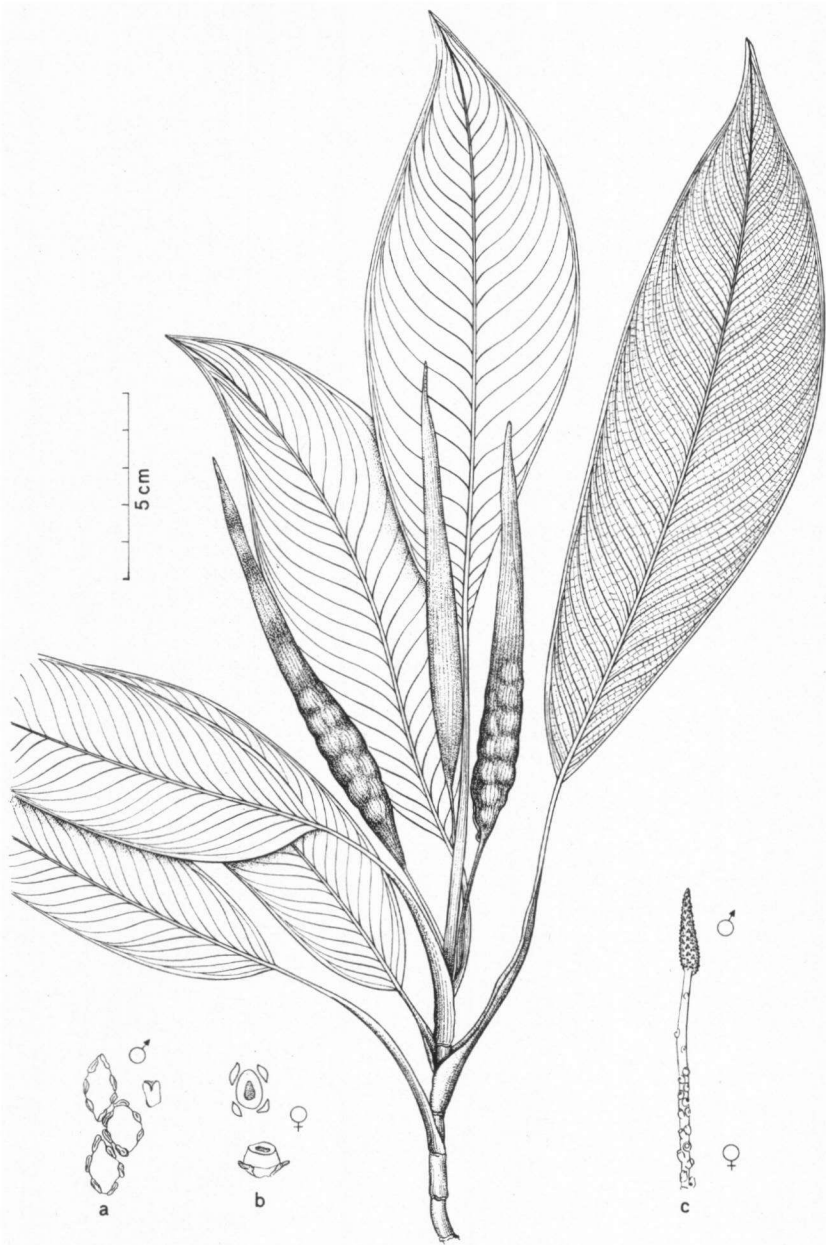


Fig. 2. *Dieffenbachia elegans* Jonk. et Jonk. a. male flowers; b. female flowers; c. spadix.

Affinities: This new species is closely allied to *D. parvifolia* Engl. from Amazonian Brazil. It differs, however, in its much longer petioles and its more herbaceous leaf blades. The leaf blades of *D. parvifolia* are coriaceous and 4–5 times as long as the petioles which are circ. 4.5 cm long. The also rather closely allied *D. humilis* Poepp. (according to Engler conspecific with *D. spruceana* Schott), known from Amazonian Brazil and Amazonian Peru differs in its leaf blades which are as long as or slightly shorter than the petioles, and by the absence of a naked sterile part of the spadix.

**Xanthosoma** Schott

On the basis of some recent collections we have had to change our mind with regard to the *Xanthosoma* species with sagittate-cordate leaves, generally known in Surinam as “tajer”, viz.: *X. sagittifolium* (L.) Schott, *X. jacquinii* Schott and *X. belophyllum* (Willd.) Kunth.

*Xanthosoma belophyllum* is stemless and possesses a tuber; the sinus of the leaf blade penetrates to the main ribs of the basal lobes, producing, consequently, a denudate part of 1–2.5 cm length. The species was cited by us in Notes II (1959) under *X. jacquinii*; in Flora of Suriname (1953) we cited under *X. belophyllum* a specimen belonging, in all probability, to *X. sagittifolium*. The species is said to be cultivated as a vegetable in tropical America and this has been, probably, the case in Surinam as well as two of the three collections have been made in the coastal area. *Xanthosoma jacquinii* is characterized by a stem, 75–100 cm, crowned by a rosette of leaves. The sinus of the leaf blade penetrates to the main ribs of the basal lobes, leaving a denudate part of 2–3 cm length. The plants are provided with arm-thick, cylindrical rhizomes. As stated by SIMMONDS (1950) the species is not cultivated and occurs in damp forest.

*Xanthosoma sagittifolium* is characterized by a stem up to 3 m, and by its thick, elongate-tuberous to ellipsoid, angular rhizome. The sinus of the leaf blade does not penetrate to the main ribs of the basal lobes; there is, consequently, no denudate part of the basal ribs. To this species we attribute the cultivars known as “pom tajer” and “taja wirie” or “tajer blad” (tajer leaves, a leafy vegetable). Culture experiments will be needed to clarify the status of the second cultivar which is grown as a rosulate, never flowering herb.

We think it wise to give a new key to the Surinam species of this genus:

- 1. a. Leaves pedatifid or pedatisect . . . . . 2
- b. Leaves entire, either hastate or sagittate to cordate . . . . 3
- 2. a. Leaves pedatisect; leaflets usually 11 (5–12)
- . . . . . 1. *X. helleborifolium* (Jacq.) Schott
- b. Leaves pedatifid, consisting of 5–9 divisions
- . . . . . 2. *X. hoffmannii* (Schott) Schott
- 3. a. Plants stemless; underground part tuberous; tubers small 4
- b. Plants provided with a distinct stem; underground part
- rhizomatous to elongate-tuberous . . . . . 5



4. a. Central part of the leaf blades rectangular; apical part triangular; basal part slightly hastate . . . . . 3. *X. belophyllum* (Willd.) Kunth  
 b. Leaf blades triangular, hastate, white-spotted on both sides . . . . . 4. *X. conspurcatum* Schott
5. a. Main ribs of the basal lobes of the leaf blade with a 2–3 cm long denudate part in the sinus. Rhizome cylindrical. Not cultivated . . . . . 5. *X. jacquini* Schott  
 b. Main ribs of the basal lobes of the leaf blade not denudate. Rhizome angular. Cultivated species . . . . . 6. *X. sagittifolium* (L.) Schott
1. *Xanthosoma helleborifolium* (Jacq.) Schott – In Surinam represented by var. *variegatum* (Desf.) Engl.  
 See Jonker and Jonker in Flora of Suriname I. 2 (1953), p. 50–52.
2. *Xanthosoma hoffmannii* (Schott) Schott – in Surinam represented by var. *wendlandii* (Schott) Engl.  
 See Jonker and Jonker, Notes on the Araceae of Surinam II, Acta Bot. Neerl. 8 (1959), p. 141–142.
3. *Xanthosoma belophyllum* (Willd.) Kunth, Enum. III (1841), p. 114; Schott, Syn. Ar. (1856), p. 59; id., Prod. Syst. Ar. (1860), p. 184; Engler in Mart., Flor. Bras. III. 2 (1878), p. 189; Engler in DC., Mon. Phan. Prod. II (1879), p. 472; Engler u. Krause, Das Pflanzenr. IV 23. E (1920), p. 52, Fig. 9L; – non Jonker and Jonker in Flor. Sur. I. 2 (1953), p. 53; Jonk. and Jonk. in Act. Bot. Neerl. II (1953), p. 357; – *Caladium belophyllum* Willd., Enum. Plant. (1809), p. 987; — *Caladium jacquini* auct. non Schott, Jonker and Jonker in Acta Bot. Neerl. 8 (1959), p. 143.

Plant stemless, rosulate. Leaves often bullate. Petiole up to 48 cm long, the basal 20 cm vaginate. Leaf blade herbaceous, sometimes provided with a basal, dark purple spot; central part of the leaf blade rectangular; apical part triangular, acuminate, mucronate; basal part slightly hastate; midrib of the apical lobe up to 30 cm long; main ribs of the basal lobes up to 17 cm long, their denudate part up to 2.5 cm long. Peduncle up to 19 cm long. Spathe circ. 19 cm long; limb white, circ. 12.5 cm long and 6 cm wide; tube subglobose, bluish-green, circ. 6.5 cm long and 3.5 cm in diameter. Spadix circ. 12.5 cm long, provided with an adnate, 1 cm long stipe; female part circ. 1.5 cm long and 1 cm in diameter; ovaries 3- or 4-locular, cylindrical, circ. 2 mm long, crowned by a disciform style and a cushion-shaped stigma; sterile part circ. 4.5 cm long, constricted; male part circ. 6.5 cm long, rosa-coloured.

Underground part tuberous, circ. 2.5 cm in diameter, black, inside white.

Distribution: Venezuela, Guiana, Colombia; also cultivated.

Coronie, Leasowes, along road near Sarah lake (Jonker and Jonker 550, ster. Febr. 1956 [U]); Lower Suriname Riv., plant. Peperpot (Lindeman 3694, fl.

Apr. 1953 [U]); between Coppename Riv., Right Branch, and Emma Range, in poor myrtaceous forest with lianas, alt. 300 m (Wessels Boer 1455, fl. May 1963 [U]).

4. *Xanthosoma conspurcatum* Schott

See Jonker and Jonker in Flora of Suriname I. 2 (1953), p. 52, and the revised description in Jonker and Jonker, Notes on the Araceae of Suriname II, Acta Bot. Neerl. 8 (1959), p. 140–141, with the exception of the incorrect statement that the underground part is not tuberous. Though classified in a different section by Engler and Krause, Das Pflanzenreich IV. 23 E (1920), this species is closely related to *X. belophyllum* (Jacq.) Schott.

5. *Xanthosoma jacquinii* Schott, Melet. I (1832), p. 19; id., Syn. Aroid. (1856), p. 57; id., Prod. Syst. Aroid. (1860), p. 183; Engler in Mart., Flor. Bras. III. 2 (1878), p. 169; id., in DC., Mon. Phan. Prod. II (1879), p. 470; Hemsley, Biol. Centr. Amer. Bot. III (1885), p. 418; Engler u. Krause in Das Pflanzenreich IV. 23 E (1920), p. 47; Simmonds in Kew Bull. 1950 (1951), p. 400; – non Jonker and Jonker in Acta Bot. Neerl. 8 (1959), p. 143.

Aerial stem up to 1 m (according to SIMMONDS, l.c., up to 3 m) high, crowned by a tuft of large leaves. Petiole up to 90 cm long, vaginate in the basal part. Leaf blade herbaceous to subcoriaceous, triangular to ovate, acute at the apex, sagittate to hastate at the base; midrib of the apical lobe circ. 36 cm long; main ribs of the lobes circ. 26 cm long; their denudate part 2–3 cm long. Peduncle up to 24 cm long. Spathe circ. 14 cm long; limb white; tube purple inside. Spadix not stipitate, circ. 12 cm long; female part subglobose, circ. 1.2 cm long and 1 cm in diameter; ovaries 3-locular, cylindrical, circ. 1.5 mm long and 1.5 mm wide, crowned by a disciform style. Sterile part slender, constricted, circ. 3 cm long. Synandrodia oblong; the basal ones no larger than the other synandrodes. Male part ellipsoid at the base and tapering towards the apex, circ. 7.5 cm long, yellow. Rhizome cylindrical, armthick.

Distribution: S. Florida, West-Indian Islands, Central America, tropical South America.

Emma Range, above main camp, along creek, alt. 650 m (Daniëls and Jonker 770, fl. July 1959 [U]); id., island in Wosuna fall, alt. 300 m (Daniëls and Jonker 836, fl. Aug. [U]); junction of Paloemeu Riv. and Tapanahoni Riv., marshy creek valley (Wessels Boer 1217, fl. Apr. 1963 [U]).

Vernacular name: Bospomtajer.

6. *Xanthosoma sagittifolia* (L.) Schott

See Jonker and Jonker in Flora of Suriname I. 2 (1953), p. 53, and the revised description in Notes of the Araceae of Suriname II, Acta Bot. Neerl. 8 (1959), p. 142–143.

**Philodendron** Schott

1. *Philodendron hederaceum* Schott

In Notes on the Araceae of Suriname II, Acta Bot. Neerl. 8 (1959),

p. 153 we reported the first record of this species from Surinam. It has since been collected in other parts of Surinam as well.

Perica Riv., near plant. Poelwijk (Splitgerber 813, fl. Apr. 1838 [L]); id., Capoerica ridge (Lindeman 5438, defl. Jan. 1954 [U]); Marowijne Riv., Nassau Mts., alt. 400–550 m (Cowan and Lindeman 39189, fl. Jan. 1955 [NY, U]); Emma Range, IJzermantop, alt. 850 m (Daniëls and Jonker 1107, fl. Sept. 1959 [U]); id. 1110, ster. Sept. 1959 [U]; Zuid Riv., near Lucy Riv. (Schulz and Maguire 10018, fl. July 1963 [BBS, NY, U]); Kabalebo Riv. (Florschütz and Maas 2613, fl. Jan. 1965 [U]).

## 2. *Philodendron ornatum* Schott

In Notes on the Araceae of Surinam II, Acta Bot. Neerl. 8 (1959), p. 152–153 we reported the first record of this species in Surinam: sterile specimens collected near the bauxite mines at Moengo. The species appeared to be rather common in the Emma Range, both flowering and fruiting specimens were collected. In the granite part of the Emma Range the species occurred both as epiphytes on trees and growing on large boulders. In the dolerite part, however, it was never terrestrial but always epiphytic. For synonymy and description see Notes II, p. 152–153. The dimensions of the leaves in the full-grown, often flowering plants are larger, however, than recorded. The rosulate leaves of the new material reach a length of 60 cm and a width of 45 cm. The denudate part of the posterior ribs is up to 6 cm long. Petiole up to 80 cm.

We are now in a position to give a description of the inflorescence: Spathe up to 22 cm long and 9 cm wide, acute, usually closely convolute but during a short flowering period it opens. The colour of the inner side of the limb varies from yellow to crimson with a white margin; tubular part red inside. Spadix obliquely sessile. Female part cylindrical, 4.5–8.5 cm long and 1.5–2.5 cm in diameter. Ovaries 3- to 6-locular; each locule containing many biseriate ovules. Sterile part of the spadix very short; male part tapering towards the apex, white to cream-coloured, circ. 7.5 cm long and 0.9 cm in diameter. Male flowers consisting of 3–4 anthers which are circ. 1.7 mm long and 1 mm wide. Fruits about 7 mm long and 3 mm in diameter; seeds circ. 1 mm long.

Emma Range, path between camp 15 and main camp, alt. 500 m, on granite rock (Daniëls and Jonker 773, fl. July 1959 [U]; id. 939, fl. Sept. 1959 [U]); id., near South camp, alt. 565 m, epiphytic (Daniëls and Jonker 1121, fl. Nov. 1959 [U]); Cottica Riv., Moengo, forest near bauxite mines (A. M. E. Jonker-Verhoef and F. P. Jonker 484, ster. Jan. 1956 [U]).

## 3. *Philodendron sphalerum* Schott

Recently collected material from Surinam lead us to the conclusion that we had to unite *P. sphalerum* Schott and *P. longipetiolatum* Engl. The two species were separated before on the base of rather minor characters i.e. length of petioles and leaf blades. The synonymy, a revised description and a list of collections follow.

*Philodendron sphalerum* Schott, Prodr. Syst. Aroid. (1860), p. 235; Engler in DC., Mon. Phan. Prod. II (1879), p. 373; Engler in Bot. Jahrb. 26 (1899), p. 540; Pulle, Enum. (1906), p. 79; Engler und

Krause in *Das Pflanzenreich* IV. 23 Db (1913), p. 89; Jonker and Jonker in *Acta Bot. Neerl.* 2 (1953), p. 74; id. in *Flora of Sur.* I. 2 (1953), p. 74; id. in *Acta Bot. Neerl.* 8 (1959), p. 150; — *Philodendron longipetiolatum* Engl. in *Bot. Jahrb.* 1 (1881), p. 483; Engler in *Bot. Jahrb.* 26 (1899), p. 540; Engler und Krause in *Das Pflanzenreich* IV. 23 Db (1913), p. 88; Jonker and Jonker in *Acta Bot. Neerl.* 2 (1953), p. 360; id. in *Flora of Sur.* I. 2 (1953), p. 74; id. in *Acta Bot. Neerl.* 8 (1959), p. 151.

Epiphytic climber. Internodes 2–5 cm long, up to 1 cm in diameter. Leaves entire. Petiole often sulcate in the apical part, vaginate at the base, 10–30 cm long. Leaf blade pergamentaceous, elliptical-lanceolate to triangular-ovate, 10–27 cm long and 4–13 cm wide, acute and cuspidate at the apex, acute, obtuse, rounded or truncate and, usually, more or less cuneate at the base; cusp 1–2.5 cm long; principal lateral veins 4–7 on each side of the midrib, occasionally hardly conspicuous. Sheath 1.5–4.5 cm long. Peduncle 4–9 cm long. Spathe convolute, swollen in the basal half, lanceolate, acuminate, apiculate at the apex, 5–8 cm long, 2–3 cm wide when expanded, outside greenish-white or bright green on the back and light yellow along the margins, inside creamy yellow or white. Spadix shortly stipitate; female part 1.5–2.5 cm long and circ. 2 mm in diameter, light green; sterile part clavate, 0.8 cm long; male part 2–3 cm long, up to 4 mm in diameter, white. Male flowers consisting of 2–3 stamens; stamens prismatic, truncate, circ. 1 mm long and 1 mm wide. Pistils prismatic, circ. 1.5 mm long and 1 mm in diameter; ovary 4- to 6-locular, crowned by a discoid stigma; each locule containing a single, basal ovule.

Distribution: Guiana.

French Guiana (Melinon s.n. [P], type of *P. longepetiolatum* Engl.).

British Guiana, Essequibo Riv. (Jenman 1320 [K]).

Surinam, Lower Suriname Riv., near plant. Kwatta (Kegel 850 [GOET], named by Engler, l.c. (1879), p. 371 and by Pulle, l.c., p. 79; *P. heterophyllum* Poepp.); Suriname Riv., Jodensavanne, Mapane creek, in forest near camp VIII (Lindeman 6720, fl. Dec. 1954 [U]; Schulz 8731, fl. May 1961 [U]); airstrip near Oelemari Riv. (Wessels Boer 1148, fl. March 1963 [U]); Perica Riv., Capoeira ridge (Lindeman 5139, fl. Dec. 1953 [U]); between Left Coppename Riv. and Bakhuis Mts. (Florschütz and Maas 2784 & 2854, fl. Feb. 1965 [U]); without locality (Splitgerber s.n., ex Schott, l.c., type of *P. sphalerum* Schott).

Note: The present authors observed a flowering specimen, Feb. 1956, near Kwakoegeon, Lower Saramacca Riv. It was, however, impossible to collect it.

Four other species are new to Surinam, viz.:

4. *Philodendron camposportoanum* G. M. Bar. in *Arqu. Jard. Bot.* Rio Jan. 14 (1956), p. 269.

Epiphytic on trees and also growing on top of large granite boulders. Petiole terete, up to 43 cm long; the basal 15 cm vaginate. Leaf blade broadly ovate, subcoriaceous, tripartite, light green and prominently veined beneath; midlobe obovate, acuminate at the apex, circ. 33 cm long and 13 cm wide; lateral lobes obliquely ovate to falcate,

acute at the apex, up to 24 cm long and 9 cm wide; main ribs of the lateral lobes not denudate. Peduncle 9–15 cm long. Spathe circ. 4.5 cm long and 5 cm wide, shortly cuspidate at the apex, green on both sides. Spadix circ. 5.5 cm long; female part thick-cylindrical to subglobose, circ. 3 cm long and 2 cm in diameter; ovaries 4- to 6-locular; each locule containing numerous, biseriate ovules; male part circ. 2.5 cm long, tapering towards the apex; intermediate sterile part short and inconspicuous. Berries orange-coloured, circ. 5 mm in diameter, arranged in a broad-cylindrical infructescence, crowned by the dried male part and enclosed at its base in a white collar formed by the remains of the spathe.

Distribution: Brazil (Mato Grosso and Amazonas).

Emma Range, E of main camp, path to camp 15, alt. 300 m (Daniëls and Jonker 781, fl. July [U]; Daniëls and Jonker 942, fr. Sept. [U]).

5. *Philodendron tessmannii* K. Krause in Notizblatt 11 (1932), p. 617.

Epiphytic climber on trunks; internodes 2–7 cm long. Petiole long-vaginate; vaginate part 4–7 cm long; apical terete part 0.2–2 cm long. Leaf blade pergamentaceous to coriaceous, elliptical or oblanceolate to obovate, acuminate at the apex and obtuse to cuneate at the base, 10–20 cm long and 3.5–8 cm wide; the two halves slightly unequal. Peduncle 2–4 cm long. Spathe 6–10 cm long; limb up to 2 cm wide, green, mucronate to acuminate. Spadix shortly stipitate; stipe up to 0.5 cm long; female part cylindrical to ovoid, 2–3 cm long and circ. 0.7 cm in diameter, green; male part elongate-conical, 4–5 cm long and 0.7 cm in diameter, greenish white to yellow. Ovaries 3- to 4-locular, 2 mm long and 1 mm in diameter; each locule containing numerous biseriate ovules; stigma discoid. Male flowers consisting of 2 or 3 stamens, circ. 0.6 mm long and 0.5 mm wide.

Distribution: Peru, French Guiana.

Peru: Amazonas, mouth of Rio Santiago (Tessmann 3940, fl. Sept. 1924, isotype [NY]); Junin, near Iquitos (Ellenberg 2967, ster. Sept. 1957 [U]).

French Guiana: Charvein (Benoist 47, fl. Oct. 1913 [P]).

Surinam: Emma Range, E slope of Gonggrijp top, alt. 900 m (Daniëls and Jonker 932, fl. Sept. 1959 [U]); id., South track, alt. 825 m (Daniëls and Jonker 1061, fl. Aug. 1959 [U]).

6. *Philodendron scabrum* K. Krause in A. Engler, Das Pflanzenreich IV. 23 Db (1913), p. 58.

Climber in savannah forest. Stem minutely asperate; internodes 6–14 cm long. Petiole 6–11 cm long; the basal 3 cm vaginate; the upper part verruculose, flattened or slightly canaliculate above. Leaf blade coriaceous, dark green above, lighter beneath, triangular to ovate, cordate at the base, acute and mucronate at the apex, 11–14 cm long and up to 9 cm wide; stronger lateral veins circ. 3 in each half of the leaf blade, hardly distinct from the numerous weaker lateral veins; basal lobes rotundate to obtuse, 3–5 cm long and 2–4 cm wide, their main ribs not denudate in the parabolic sinus, running at a distance of 0.2–0.8 cm from the margin. Peduncle terete, 5.6 cm long. Spathe 6–8 cm long; tube ovoid, dark green outside, crimson

inside; limb mucronate, light green on both sides. Spadix obliquely and adnately stipitate; stipe 0.4 cm long; female part light green, circ. 0.9 cm long and 0.6 cm in diameter; male part light red tinged with white, circ. 5 cm long and 0.5 cm in diameter. Pistil circ. 2 mm long and 1 mm in diameter; stigma densely papillose; ovary 6- to 8-locular; each locule containing 6-8 ovules. Male flower consisting of 2-4 stamens, each 1 mm long and 1 mm wide. Inflorescence producing the smell of aniseed. Fruits unknown.

Distribution: Brazil, Amazonas, Rio Branco (once collected, type Ule 8482).

Lobin savannah, between Zanderij I and Hannover (J. & W. A. E. van Donselaar 339, ster. Aug. 1958 [U]); Waneweg, 30 km S of Paramaribo (Kramer and Hekking 2873, fl. Feb. 1961 [U]).

### 7. *Philodendron polypodioides* Jonk. et Jonk., n. sp. (Fig. 3).

Caulis scandens. Foliorum petiolus teres, circ. 80 cm longus ad 11 cm longitudinis vaginatus. Lamina coriacea, trilobata, triangulata et cordato-sagittata; lobo antico et lobis posticis laciniato-pinnatipartita; laciniae lineares vel interdum bifurcatae nervis principalibus 6. Costae posticae in sinu ad 2 cm denudatae. Pedunculi circ. 3 ex axilla provenientes, 16-18 cm longi. Spatha extus viridis, circ. 14-18 cm longa. Spadix sessilis; pars feminea ad 6.5 cm longa, 1 cm crassa; mascula circ. 5 cm longa. Ovarium circ. 9-loculare; ovula plura, biseriata. Fructus ignotus. Holotypus: Wessels Boer 1103 in herbario U, e Surinamo ad flumen Oelemari prope portem aeronauticum.

Climber in high forest. Leaves large. Petiole terete, circ. 80 cm long, the basal 11 cm vaginate. Leaf blade subcoriaceous, trilobate, triangular and cordate to sagittate in outline, both the anterior lobe and the posterior ones laciniately pinnatipartite. Anterior lobe circ. 50 cm long and 50 cm wide; posterior ones circ. 40 cm long and 40 cm wide; basal laciniae of the anterior overlapping those of the posterior lobes. Laciniae up to 25 cm long and 1-3 cm wide, ribbon-shaped, gradually tapering towards the subobtuse apex, sometimes bifurcate and occasionally the prongs also bifurcate, provided with up to 6 longitudinal, parallel principal veins. Sinus between the laciniae 1-2.5 cm wide. Midrib of the posterior lobes denudate in the sinus between the posterior lobes; denudate part up to 2 cm long. Circ. 3 inflorescences arising in the leaf axil; peduncles terete, stout, 15-20 cm long. Spathe 14-18 cm long and 2.5 cm in diameter when convolute, mucronate, green outside. Spadix sessile; female part circ. 6.5 cm long and 1 cm in diameter; male part circ. 5 cm long. Pistil circ. 3 mm long and 1.5-2 mm in diameter; stigma capitate, sessile; ovary circ. 9-locular; each locule containing numerous biseriata ovules. Male flowers consisting of circ. 4 stamens. Fruit unknown.

Litani R., Oelemari Riv., near air strip in dry forest (Wessels Boer 1103, fl. March 1963, holotype [U]).

Affinities: This new species belongs in Section *Polytomium* Schott as distinguished by Engler and Krause. It is closely related to *P. fendleri* Krause, an endemic species from Trinidad, which differs, however, in leaf characters.

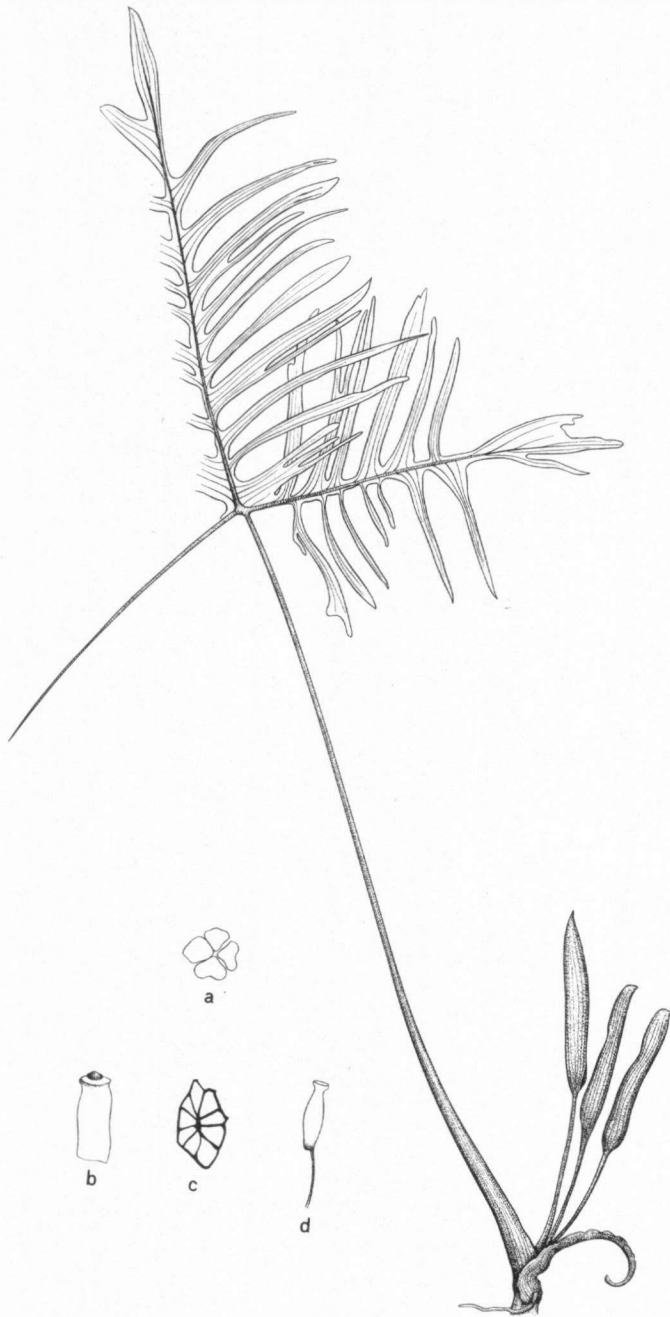


Fig. 3. *Philodendron polypodoides* Jonk. et Jonk. ( $\times 0.15$ ). a. male flower; b. pistil; c. ovary, cross section; d. ovule.

**Schismatoglottis** Zoll. et Mor.

In Notes on the Araceae of Surinam I (Acta Bot. Neerl. 2 (1953), p. 360–362) the present authors reported the occurrence of a species of the chiefly Malesian genus *Schismatoglottis* in Surinam. The specimens were collected by Maguire on Mt. Tafelberg and described as a new species: *S. americana* Jonk. et Jonk. In the same publication it was suggested that the genus *Philonotion* Schott probably should be sunk in *Schismatoglottis*. Later on more material of *Philonotion* was collected, both in Venezuela and Colombia. It was studied by G. S. BUNTING (Annals of the Missouri Botanical Garden 47, 1960, p. 69–71) who, confirming our suggestion considered *Philonotion* a section of the genus *Schismatoglottis*. He regarded *Philonotion williamsii* Steyerl. as a variety of the only other species, *Philonotion spruceanum* Schott, and, consequently, the new section contained two species, viz. *Schismatoglottis spruceana* (Schott) Bunt. and *S. americana* Jonk. et Jonk.

In 1961 Kramer and Hekking collected more material of *S. americana* in the Kappel savannah, S of Mt. Tafelberg. On the basis of the varying leaf shape in this material we were at first inclined to unite *S. americana* and *S. spruceana*. A careful consideration, however, lead us to the conclusion that the two species are distinct and that the newly collected material from Surinam also belongs to *S. americana* of which species a revised description follows here:

Stemless rosulate herb. Cataphylls membranous, lanceolate, acute. Leaves petiolate. Petiole terete, sulcate in the apical part, 8–27 cm long; the basal part vaginate; sheath up to 11 cm long and up to 2 cm wide. Leaf blade thick and fleshy in the living state, in dried material papyraceous to membranous, dark green above and light-to greyish green beneath. On both sides of the midrib 5 or 6 lateral veins, distinct on the back, and between these numerous fine, indistinct lateral veins. On the back of dried leaves minute dots appear in rows between the veins. Leaf blade elliptical to oblanceolate, more or less cuneate to rounded at the base, acuminate and long-subulate at the apex, 10–30 cm long and 2–13 cm wide; the filiform appendix 2.5 cm long, rather stiff. Peduncle 10–24 cm long. Spathe cucullate, subulate at the apex and oblique at the base, 5–7 cm long and circ. 2 cm wide; basal part light green; apical part creamy white; the filiform apical appendage 0.5 cm long. Spadix sessile, adnate in the basal part; the basal female part circ. 1.5 cm long and 0.5 cm in diameter, white; the intermediate sterile part circ. 1 cm long and the apical, male part 2–2.5 cm long, creamy white. Ovary up to 2 mm long and 0.5–1 mm in diameter, cylindrical; placentas 2; ovules few. Stigma annular. Fruit containing 1–3 seeds. Seeds 12-costate, ovoid, apiculate.

Distribution: known from Surinam only.

Tafelberg, northern slope, camp I, about base of waterfalls, alt. 564 m (Maguire 24289, fl. & fr. Aug. 1944 [NY (holotype), U]); Kappel savannah, S foot of Mt Tafelberg, along rivulet, sand stone, alt. 300 m (Kramer and Hekking 2961, fl. Feb. 1961 [U]).



Note: From the above description it appears that the dimensions of the leaves on which Bunting's key was based, are no longer applicable. We distinguish the two species by the consistency of the leaf blades. In the dried specimens of *S. spruceana* the leaf blades are coriaceous, brown above and greyish brown beneath; the lateral veins are all equal and indistinct, not showing the stronger lateral veins and indistinct ones between them as in *S. americana*.