

## NOTES ON THE ARACEAE OF SURINAME

BY

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The list of *Araceae* published in 1906 by A. A. PULLE in his "Enumeration of the Vascular Plants known from Surinam" comprises 39 species belonging to 14 genera, the largest genera being *Anthurium* with 7 species and *Philodendron* with 12 species. It was found that one of these 39 species was included by mistake, for the specimen Wulschlaegel n. 1764, which is the type of *Spathiphyllum blandum* Schott, was erroneously assumed to have been collected in Suriname.

Already in 1908 TRESLING had collected a species that was not listed by PULLE, viz. *Dieffenbachia picta* (Lodd.) Schott.

Our studies of the collections made between 1915 and 1926 by the Forestry Department (B.W.) revealed the presence of 5 hitherto unrecorded species, viz. *Anthurium digitatum* (Jacq.) G. Don, *Dieffenbachia paludicola* N. E. Br. ex Gleas., *Heteropsis jenmanii* Oliv., *Philodendron guttiferum* Kunth and *Spathiphyllum huberi* Engl.

In 1937 during the expedition to the southern frontier of Suriname the physician ROMBOUTS collected another species that proved to be new to the flora, viz. *Anthurium clavigerum* Poepp.; it was previously known from Peru only.

The entomologist GEYSKES increased in 1939 the total number of species by two by collecting *Heteropsis longispathacea* Engl., so far known from Amazonian Brazil only, and the noteworthy *Anthurium salviniae* Hemsley, previously known from Guatemala and Yucatan.

In 1944 STAHEL recorded for the first time the occurrence in Suriname of the genus *Heteropsis*, of which the most common species, *H. jenmanii* Oliv., originally described from British Guiana, had already been collected several times by the Forestry Department.

In 1948 A. D. HAWKES published in the Bulletin of the Torrey Botanical Club 75, p. 633, an enumeration of the *Araceae* collected in 1944 by Bassett MAGUIRE. His list contains the names of 10 species that were recorded here for the first time as collected in Suriname, and 4 of these were regarded as entirely new. The number of genera was increased by two, viz. *Stenospermation* Schott and the new genus *Maguirea*. The number of species that were said to be new to the Suriname flora and also the number of new species appeared to be remarkably large when the figures for the *Araceae* are compared with those for other families represented in MAGUIRE's collection. Though our revision showed that some of HAWKES' identifications were incorrect, the MAGUIRE collections nevertheless proved to contain some

important additions to the list of Suriname *Araceae*, viz. five hitherto unrecorded species, 3 of which were new, viz. *Anthurium maguirei* A. D. Hawkes, *Stenospermatum maguirei* Jonk. et Jonk. and *Schismatoglottis americana* Jonk. et Jonk., and two new genera, viz. *Stenospermatum* Schott and *Schismatoglottis* Zoll. et Mor. *Maguirea* A. D. Hawkes, however, proved to be identical with *Dieffenbachia* Schott (v. infra).

Finally the collections made by LANJOUW and LINDEMAN in 1948 proved to contain 2 species that were new for Suriname, viz. *Philodendron jenmanii* Krause, previously known from British Guiana and Amazonian Brazil, and *Syngonium hastifolium* Engl., known from Amazonian Brazil only.

As a result of our revision 18 genera, 56 species and 7 varieties of *Araceae* are now known from Suriname; 4 of these species are found as cultivated plants only. Of the 18 genera two are represented by a considerable number of species, viz. *Anthurium* Schott by 11 species and *Philodendron* Schott by 13 species; two of these *Philodendron* species proved to be represented by 2 varieties. The genus *Xanthosoma* Schott comes next with 5 species, of which 3 are known in Suriname as cultivated plants only. It is followed by the genus *Monstera* Adans. with 4 species. Both *Spathiphyllum* Schott and *Dieffenbachia* Schott have 3 species, but one of the species of *Dieffenbachia* is represented by 3 varieties.

Represented by 2 species are the genera *Dracontium* L., *Heteropsis* Kunth, *Montrichardia* Crueger, *Stenospermatum* Schott and *Syngonium* Schott; whereas the genera *Caladium* Vent., *Cyrtosperma* Griff., *Rhodospatha* Poepp., *Pistia* L., *Schismatoglottis* Zoll. et Mor. and *Urospatha* Schott are represented by a single species; the only species of the last named genus is represented by 2 varieties. The genus *Colocasia* Schott is also represented by a single species but the latter is cultivated only.

It is noteworthy that some of the above mentioned genera have their main area in other parts of the world, viz. *Cyrtosperma*, of which 9 species occur in tropical Africa, Malesia, Melanesia and Polynesia and but 2 species in Amazonian Brazil and Guiana, and *Schismatoglottis*, with circ. 75 species in Malesia and Birma and a single species in Suriname. The genus *Spathiphyllum*, on the other hand, is represented by 26 species in tropical America and only 1 in Malesia. The genus *Pistia*, which consists of a single aquatic species, is pantropic, but all the remaining genera occurring in Suriname are confined to tropical America. Among them *Heteropsis* shows the smallest area of distribution, for it is restricted to Brazil and Guiana.

In the following paper a few taxonomic and phytogeographic remarks are made on some of the genera and species. There are also descriptions of two new species.

**DRACONTIUM L.:** *D. foecundum* Hook.f., known from Trinidad and British Guiana, is to be expected in Suriname as it was collected twice on the British bank of the Corantyne River. Known from Suriname are *D. asperum* K. Koch and *D. polyphyllum* L.

CYRTOSPERMA Griff.: this genus has but once been found in Suriname and this collection has to be referred to *C. spruceanum* (Schott) Engl., not to *C. americanum* Engl. as was done by PULLE. *C. americanum* is known from French Guiana only.

UROSPATHA Schott: PULLE mentioned *U. hostmannii* Schott only. Now more material of this genus has been collected, and this does not belong to *U. hostmannii* but, in our opinion, to *U. sagittifolia* (Rudge) Schott. We consider *U. caudata* (Poepp.) Schott as conspecific with the latter.

According to ENGLER the difference would be that *U. sagittifolia* has a rough and verrucose petiole and *U. caudata* a smooth one. This feature, however, is of no value as the petiole is often rough towards the base and smooth in the upper part. GLEASON too appears to have come to this conclusion for he remarked on a label attached to Jenman n. 5779 in the Kew herbarium: "The petiole is smooth at the apex but becomes rough towards the base so that *U. caudata* and *U. sagittifolia* are one species".

The other difference mentioned by ENGLER, viz. the length of the denudate part of the main ribs in the basal lobes of the leaf blade, has no value either as the variability of this character is so great that no line can be drawn. *U. hostmannii* is regarded by the present authors as a variety of *U. sagittifolia*, characterized by the narrower leaves and we consider *U. spruceana* Schott, *U. decipiens* Schott and *U. dubia* Schott identical with this variety. Its correct name appears to be *U. sagittifolia* (Rudge) Schott var. *spruceana* (Schott) Engl. Both SCHOTT and ENGLER mention as type of *U. spruceana* Schott the specimen "Spruce n. 945". However, 945 is not the collector's number but the number given to this collection in the MARTIUS herbarium. The correct collector's number is 1235; this number is cited both by SCHOTT and ENGLER as the type of *U. decipiens* Schott.

ANTHURIUM Schott: in the genus *Anthurium* PULLE cited 7 species but one of them, viz. *A. trinerve* Miq. we consider conspecific with *A. scandens* (Aubl.) Engl., which was also cited by PULLE. The two collections referred by PULLE to *A. acaule* Schott do not belong to this species but to *A. gracile* (Rudge) Engl., a species also cited by him. To the remaining 5 species, A. D. HAWKES, l.c., added in 1948: 1°. *A. galeottii* (Hort.) C. Koch; the specimen cited by him, however, belongs to *A. scolopendrinum* (Ham.) Kunth, which was mentioned already by PULLE; 2°. *A. hookeri* Kunth, the specimen is named by the present authors *A. crassinervium* (Jacq.) Schott, see below; 3°. a new species, *A. maguirei* A. D. Hawkes; 4°. *A. nigrescens* Engl.; this specimen is regarded by the present authors as belonging to *A. polyrrhizum* C. Koch et Augustin; 5°. another new species, *A. stahelii* A. D. Hawkes, which, however, does not belong to this genus but to *Philodendron* Schott, and is conspecific with *P. myrmecophilum* Engl. Three of these species therefore have to be added to the five good species of PULLE's list, which brings the number to eight. To these

eight we added as a result of the study of our unidentified material: *A. salviniae* Hemsl., *A. clavigerum* Poepp. and *A. digitatum* (Jacq.) G. Don. Consequently 11 species of *Anthurium* are now known from Suriname. It seems desirable to give a few taxonomic and phytogeographic notes on some of the species of this genus.

Noteworthy is the discovery by GEYSKES of *A. salviniae* Hemsley in the Toemoek-Hoemoek Mts. Up till now this species was known from Guatemala (Heyde and Lux n. 4278 [K] and Salvin s.n. [K]) and Yucatan (A. Schott n. 638 [BM]).

The correct names of the large-leaved rosulate not rarely cultivated *Anthurium* species which are known as *A. crassinervium* (Jacq.) Schott and *A. hookeri* Kunth, were not easy to determine. The type of *A. hookeri*, figured by HOOKER in Botan. Magaz. t. 2978 as *Pothos crassinervium* Jacq., has a rather short, cylindrical spadix. According to ENGLER, in Das Pflanzenr. IV. 23B (1905), p. 77, Fig. 24, *A. crassinervium* (Jacq.) Schott has a rather long, narrowly cylindrical spadix. The original plate of JACQUIN, Icon. III (1793), t. 609, however, shows a short, cylindrical spadix. The type material of JACQUIN in the Vienna herbarium was destroyed by war action. The herbarium of the British Museum, Natural History, at London possesses a specimen named *Pothos crassinervium* Jacq., Icon. hort. Vindob., which has a short cylindrical spadix.

If this specimen were accepted as isotype, HOOKER would have been correct in referring his specimen to *A. crassinervium* (Jacq.) Schott and *A. hookeri* Kunth would be synonymous with *A. crassinervium* (Jacq.) Schott.

In that case a new name would have to be found for the species with the long, narrowly cylindrical spadix, i.e. for the species to which the material collected in Suriname belongs. However, as it is not certain that the specimen in the British Museum is an isotype, the present authors named the material from Suriname *A. crassinervium* (Jacq.) Schott, basing their identification on the figure given by ENGLER, l.c., and conforming to the generally accepted view. They disagree therefore with A. D. HAWKES who identified the Suriname material collected by MAGUIRE as *A. hookeri* Kunth. ENGLER wrongly considered *A. huegelii* Schott conspecific with *A. hookeri* Kunth; the base of the leaf blade is in these two species quite different. The description of *A. hookeri* given by ENGLER, l.c., is consequently highly confused, see also N. E. BROWN in Gardn. Chron. 48 (1910), p. 153.

*Anthurium martianum* C. Koch et Kolb is said to have been collected in Suriname and brought into culture. Material from cultivation is preserved in the herbaria B and M, but none of the herbaria possess material of this species collected in Suriname.

*Anthurium scandens* (Aubl.) Engl. is cited by PULLE from Suriname. He also mentioned *A. trinerve* Miq., which differs, according to ENGLER, by peduncles that are twice to three times as long as the petioles, the peduncles and petioles of *A. scandens* being of equal length. *A. trinerve* Miq. however is a later homonym of *A. trinervium* Mart. In our opinion, however, there is no difference between the common

*A. scandens*, known from the West Indies and Guiana, and *A. trinerve* Miq., known from Guiana and Amazonas. Consequently we unite the two species under the name *A. scandens* (Aubl.) Engl. and consider *A. trinerve* Miq. = *A. brachyspathum* C. Koch et Bouché and also *A. scandens* var. *violaceum* (Sw.) Engl. synonyms. If this is agreed *A. scandens* (Aubl.) Engl. becomes the most common species in this genus.

*A. digitatum* (Jacq.) G. Don, once collected in Suriname (B.W. n. 4169), is very variable in the number of leaflets that compose the subdigitate leaf. According to ENGLER this number is 9–13. We found, however, that in the specimen cultivated in the Aroid House in the Royal Botanic Gardens at Kew the number varies from 5–13. The first leaves have a smaller number of leaflets than the subsequent ones; as a rule there are more than 5 leaflets. The same kind of variability, though in a smaller degree, was observed in *A. pentaphyllum* (Aubl.) G. Don; in this species the number of leaflets may vary from 3 to 9; as a rule we found 5. In both species the leaflets of the first leaves are sessile; in the subsequent ones the length of the petiolules in *A. pentaphyllum* may reach 2.5 cm, whereas in *A. digitatum* it may increase to 9 cm.

SPATHIPHYLLUM Schott: of this genus PULLE cited 3 species as known from Suriname, viz. 1°. *S. blandum* Schott, collected by WULLSCHLAEGEL (type), but this specimen was not collected in Suriname, the locality, "Bluefields, Mosquito, at the beach of the lagoon", being situated in the West-Indian Islands, probably in Jamaica; the species is not known from Suriname; 2°. *S. candolleianum* Schott; PULLE's specimen (Hostmann n. 1154) is regarded by the present authors as belonging to *S. humboldtii* Schott; and 3°. *S. cuspidatum* Schott; the specimen (Splitgerber s.n.) was cited by ENGLER and KRAUSE in *Das Pflanzenr.* IV. 23B (1908), p. 128, and was seen neither by PULLE nor by the present authors.

New to the flora of Suriname is *S. huberi* Engl., previously known from Brazil (Para) only. It was twice collected in Suriname.

STENOSPERMATION Schott: This genus was reduced by MACBRIDE in *Field Mus. Nat. Hist. Bot. Ser.* XL (1931), p. 6 to *Rhodospatha* Poepp. "since it has in general no distinction except the basal instead of lateral attachment of the ovules. If this character properly forms a basis of generic definition, other groups in the family now included under one name (as *Philodendron*, for example) should be segregated". We do not agree with this opinion. All *Philodendron* species have a 2- or more-celled ovary with axile placentation; the number of ovules, however, varies from several to few or even a single one in each cell; in the latter case this ovule is basal-axile. The genus *Rhodospatha*, however, has a 2-celled ovary with axile placentation, and the genus *Stenospermation*, on the contrary, has a one-celled or very incompletely 2-celled ovary, with a basal, annular placenta. The difference between *Rhodospatha* and *Stenospermation* is consequently greater and of more

fundamental importance than that between the *Philodendron* species. If *Rhodospatha* and *Stenospermatum* are united, then the genera *Heteropsis* and *Monstera* too would have to be included in the genus *Rhodospatha* s.l. There would even be more reason to unite the genera *Heteropsis* and *Monstera* for these two genera differ in general appearance only.

PULLE was not acquainted with the Suriname species of the genus *Stenospermatum*, but MAGUIRE collected two specimens, both named by HAWKES: *Stenospermatum spruceanum* Schott. A specimen collected in British Guiana was cited by him in the same paper as *Rhodospatha*

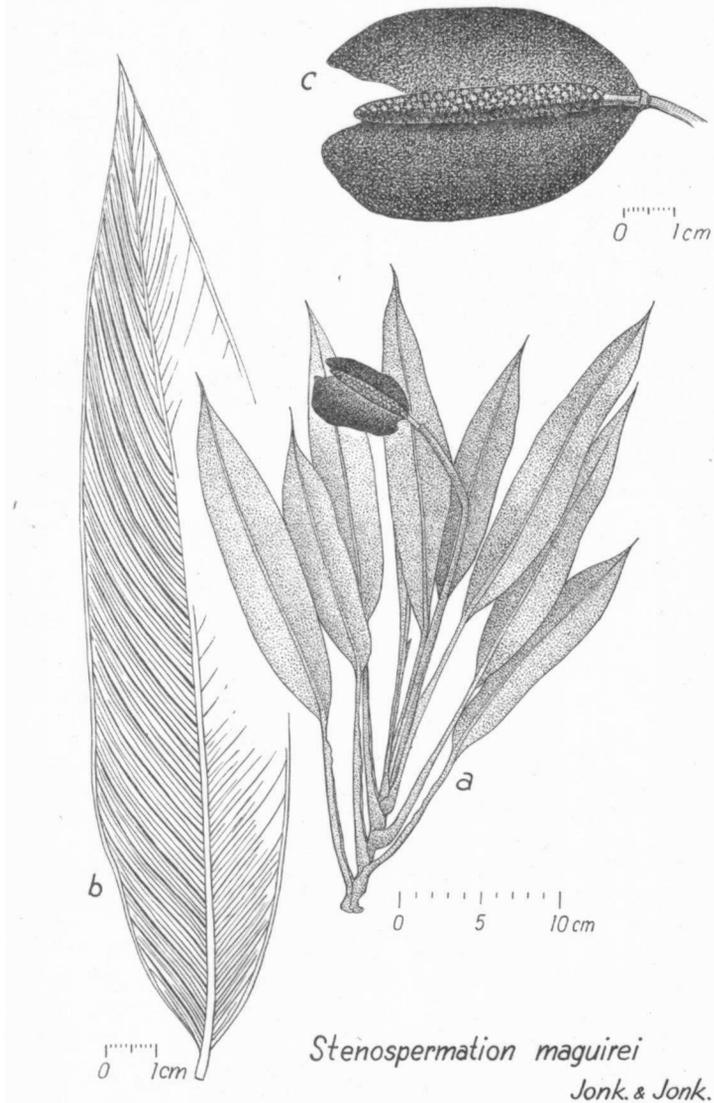


Fig. 1. a. flowering plant, b. leaf, c. spathe and spadix.

*spruceana* (Schott) Macbr. Consequently it is not possible to decide whether he agrees with the above mentioned opinion of MACBRIDE. The two specimens collected by MAGUIRE in Suriname, however, do not belong to *S. spruceanum* Schott. In our opinion one of them (Maguire n. 24459) belongs to *S. multiovulatum* (Engl.) N. E. Br., originally regarded by ENGLER as a variety of *S. spruceanum* Schott. The other one belongs to a new species, named by us in honour to its collector *Stenospermatum maguirei* Jonk. et Jonk. (fig. 1).

*Stenospermatum maguirei* n.sp. Caudex scandens, internodiis 1–1.5 cm longis. Foliorum petiolus 9.5–13.5 cm longus usque ad 1–3 cm infra laminam vaginatus, vagina apicem versus latitudine decrescente; lamina coriacea, elliptica, basi acuta, apice 1 cm longo acuminata, 15.5–22 cm longa, 3–4.5 cm lata. Pedunculus teres, robustus, circ. 2.5 cm longus. Spatha late-elliptica, decidua, circ. 6.5 cm longa, 3.5 cm lata, alba. Spadix stipite 8 mm longo suffultus, anguste cylindricus, 5 cm longus, 0.6 cm diam. Stamina 4.25 mm longa, 0.7 mm lata. Pistillum 1.7 mm longum, 2 mm crassum, ovario obconico, stylo discoideo, stigmatate capitato. Ovula circ. 10, 0.5 mm longa, funiculi 0.5 mm longi. Typus: Maguire 24556 in herbario NY — Surinamo, in monte Tafelberg, altitudine 300 m.

This species differs from *S. multiovulatum* (Engl.) N. E. Br. by being a climber and by the leaf sheath which may nearly reach the base of the leaf blade and becomes gradually narrower towards the top. The leaf blade is acuminate and smaller than in *S. multiovulatum*. The inflorescence is erect. *S. spruceanum* Schott differs by its wider and more robust leaves and the obtuse to rounded apex of the leaf sheath.

RHODOSPATA Poeppl.: after the specimen cited already by PULLE as *R. oblongata* Poeppl. (Wullschlaegel n. 1570) no material of this genus was collected in Suriname. *Rhodospata melinonii* (Engl.) Engl. et Krause, known only from French Guiana but collected as far westwards as the French bank of the Marowijne R., was included by the present authors in the genus *Heteropsis* Kunth (v. infra).

HETEROPSIS Kunth: according to PULLE, Enum. (1906), no material of this genus had been collected up till then. STAHEL, in 1944, for the first time mentioned the occurrence in Suriname of *H. jenmanii* Oliv. Under the vernacular name "kamina" this species was well known to the natives who used the aerial roots for making baskets and ropes. *H. longispathacea* Engl. was once collected in Suriname; its aerial roots are useless for making ropes. *Rhodospata melinonii* (Engl.) Engl. et Krause is referred by the present authors to this genus. It is known from French Guiana only, but is to be expected in Suriname, as in French Guiana the species is rather common and has been collected i.a. on the French bank of the Marowijne River. Its transference to the genus *Heteropsis* is justified in our opinion by the fact that the cells of the 2-locular ovary each contain two basal ovules. This is found in the genera *Monstera* and *Heteropsis*, but by its general appearance the species fits much better in the latter and, moreover, the top of the

fruit is marginate which is typical for that genus. The name becomes therefore *Heteropsis melinonii* (Engl.) Jonk. et Jonk., nov. comb.

**MONSTERA** Adans.: the differences between this genus and the genus *Heteropsis* Kunth are mainly found in general appearance of the species.

In *Monstera* the petioles are longer, the leaf blades not so rigidly coriaceous as in *Heteropsis* and the fruits are not marginate at the apex. PULLE, l.c., mentioned 3 species from Suriname and later authors did not add other species. The most common one is *M. pertusa* (L.) De Vriese, regarded by ENGLER as "typus polymorphus". In our opinion the varieties of this species that were described by ENGLER, on account of differences in the leaves, are of little value, as the leaves vary greatly in the same plant. A collection of KEGEL, n. 236, incomplete material and consisting of a single leaf, was cited by PULLE, probably on the authority of a determination label signed by ENGLER, as *M. dilacerata* C. Koch. In our opinion this specimen very probably belongs to *M. pertusa*.

The remaining material was regarded by PULLE as belonging to *M. obliqua* Miq. In our opinion only the material with entire, narrow, falcate, oblique, elliptical leaves belongs to this species, and we consider *M. falcata* Engl., from Amazonian Brazil and Bolivia, and *M. fendleri* Krause, from Trinidad and Tobago, conspecific. The species was described by MIQUEL as a *Monstera* and not, as stated by ENGLER, as *Heteropsis obliqua*. The combination *Monstera obliqua* (Miq.) Engl. consequently is superfluous. The material with entire, wider, ovate leaves, included by PULLE in *M. obliqua*, belongs in our opinion to *M. sagottiana* Engl., earlier known from French Guiana.

PULLE also included in *M. obliqua* material with rather narrow, oblique, elliptical to ovate, fenestrate leaves. This belongs in our opinion to *M. expilata* Schott, which is considered by ENGLER a variety of *M. obliqua* (var. *expilata* (Schott) Engl.). *M. expilata* is known also from Amazonian Brazil and French Guiana.

Consequently in our opinion the number of *Monstera* species in Suriname is now four.

**DIEFFENBACHIA** Schott: PULLE knew from Suriname *D. seguina* (L.) Schott only. To this variable species, regarded by ENGLER as "typus polymorphus", still most specimens collected in Suriname are to be referred. The great variability, however, mainly originated in cultivation. In the material from Suriname it is possible to distinguish 3 varieties, of which the typical variety, according to Art. 35 of the International Code of Botanical Nomenclature var. *seguina*, was named by ENGLER var. *viridis* Engl.

According to ENGLER a specimen, collected in Suriname by WEIGELT and seen neither by PULLE nor by the present authors would belong to it. The remaining material belongs to the varieties *ventenatiana* (Schott) Engl. and *lingulata* (Mart. ex Schott) Engl.

*Dieffenbachia picta* Schott is perhaps but a variety of *D. seguina* with spotted leaves or even a mere form of *D. seguina* (L.) Schott var.

*seguina*. An incomplete specimen collected by TRESLING at the Upper Sipaliwini River, very probably belongs to it. On account of the variability of the cultivated material, it is considered by ENGLER a "typus polymorphus"; it is badly known. It has been recorded from Trinidad and Tobago and has perhaps also been found in Brazil.

*D. paludicola* N. E. Br. ex Gleas., a marsh plant known up till now from British Guiana only, was collected by the Forestry Department at the Corantyne River. MAGUIRE and STAHEL collected the species at Sectie O; this collection was described by A. D. HAWKES, l.c., as the type of a new species and a new genus: *Maguirea spathicarpoides* A. D. Hawkes.

SYNGONIUM Schott: the two species, cited by PULLE, viz. *S. affine* Schott and *S. vellozianum* Schott, are in our opinion conspecific. A difficulty was caused by the specific epithet. The oldest name quoted in the literature is *Xanthosoma? gracile* Miq., published in Delect. Sem. Hort. Amst. 1853. A type specimen has not been preserved, but in the Kew Herbarium we saw a drawing made by N. E. Brown of a specimen of *Xanthosoma gracile* Miq. preserved in the herbarium of C. KOCH. This drawing figures a plant with hastate leaves, which does not belong to one of the species mentioned above and the name *S. gracile* (Miq.) Schott consequently cannot be regarded as a synonym. *Arum auritum* Vell. is a later homonym of *A. auritum* L. and the correct name therefore is *Syngonium vellozianum* Schott. Of this species two varieties exist. The typical variety was named by ENGLER var. *latilobum* Engl. According to Art. 35 of the International Code of Botanical Nomenclature the varietal epithet must repeat the specific epithet without citation of the author's name; the correct name consequently is *S. vellozianum* Schott var. *vellozianum*. This variety has not been collected in Suriname. The Suriname material belongs to var. *poehpigii* Engl., later renamed by ENGLER var. *oblongisectum* Engl., but this name has to be rejected as illegitimate.

A second Suriname species was collected by LANJOUW and LINDEMAN in the Tibiti savannah, viz. *S. hastifolium* Engl.; it was previously known from Amazonian Brazil only.

XANTHOSOMA Schott: of the two species cited by PULLE, *X. conspurcatum* Schott has been collected only once, viz. by WULLSCHLAEGEL in 1851. *X. helleborifolium* (Jacq.) Schott var. *variegatum* (Desf.) Engl. is a seldom collected weed.

A number of *Xanthosoma* species are cultivated in tropical America as vegetables, for the edible rhizomes or as a fodder. STAHEL mentions for Suriname *X. sagittifolium* (L.) Schott; ENGLER mentions for Suriname *X. caracu* C. Koch et Bouché; and in the HERMANN herbarium from Suriname, preserved in the Botanical Museum and Herbarium at Utrecht, two leaves of *Xanthosoma belophyllum* (Willd.) Kunth are represented; they are said to be called Tayer leaves. Apart from this collection no specimens of these cultivated *Xanthosoma* species have been collected in Suriname.

**CALADIUM** Vent.: *C. bicolor* (Ait.) Vent. is spontaneous in Suriname, but is it also cultivated for the edible leaves and spadices. PULLE, partly following ENGLER, distinguished two forms. In our opinion the large number of varieties established by ENGLER and KRAUSE, are of little value. Most of these varieties have been based on material from cultivation. *C. schomburgkii* Schott is to be expected in Suriname, as it is known from French and British Guiana.

**COLOCASIA** Schott: *C. esculenta* (L.) Schott (= *C. antiquorum* Schott) is cultivated in nearly all tropical countries as a vegetable and also for the edible rhizomes. This is done in Suriname also, but it is impossible for us to decide to which varieties these plants may belong, as no specimens have been collected.

**PHILODENDRON** Schott: Pulle listed from Suriname 12 species. Of one of them, *P. spliigerberi* Schott, only leaves have been described. The type specimen was seen neither by PULLE nor by the present authors. Presumably it has been destroyed in the Vienna herbarium by war action.

Examination of the types of *P. linnaei* Kunth and of *P. decurrens* Krause revealed that they are conspecific and that the name of the latter therefore must be regarded as a synonym of the former. The type of *P. linnaei* (Dahlberg s.n.) has neither circ. 3 basal ovules in each ovary cell as stated by KUNTH nor 2 basal ovules as stated by SCHOTT and by ENGLER and KRAUSE, but each cell contains a small number of ovules spread over the whole length of the dissepiment.

Related is *P. insigne* Schott, which was collected three times in Suriname; it differs in the shape of the leaves and the size of the peduncles and leaf sheaths. In our opinion *P. calophyllum* Brogn. ex Linden et André must be regarded as a synonym of *P. insigne*. *P. laciniatum* (Vell.) Engl., cited by PULLE, was named by the present authors for reasons of priority *P. pedatum* (Hook.) Kunth. We stated the occurrence in Suriname of the var. *palmatisectum* (Engl.) Jonk. et Jonk., nov. comb. (= *P. laciniatum* (Vell.) Engl. var. *palmatisectum* Engl.). Contrary to what one would expect from the varietal epithet, the leaves of the variety are subpinnatisect.

*Philodendron fragrantissimum* (Hook.) Kunth has been collected in Suriname three times. *P. demerarae* Gleas. is a synonym. Maguire n. 23412, collected in British Guiana and cited by HAWKES as *P. demerarae*, however, does not belong to this species but to *P. pedatum* (Hook.) Kunth.

*P. grandifolium* (Jacq.) Schott and *P. acutatum* Schott (= *P. wullschlaegelii* Schott = *P. cyclops* A. D. Hawkes) differ, according to our studies in: *a.* the shape of the leaf blade; *b.* the length of the peduncle: short in *P. grandifolium*, longer in *P. acutatum*; *c.* the ovary: in *P. grandifolium* 6-celled with 2 basal ovules in each cell and 9- or 10-celled in *P. acutatum* with several biseriata ovules in each cell.

The ovary of *P. grandifolium* is incorrectly figured in the drawing published by ENGLER and KRAUSE in Das Pflanzenr. IV. 23Db (1913), Fig. 21 as 5-celled with several ovules in each cell and incorrectly described by the same authors, l.c., as 10- to 12-celled with a small

number of ovules in each cell. According to the same authors the ovary of *P. acutatum* would be 6- to 8-celled.

*P. grandifolium* has twice been collected in Suriname, and *P. acutatum* ten times. *P. quinquenervium* Miq., cited by ENGLER and KRAUSE as a synonym of *P. acutatum*, is probably specifically distinct. If ENGLER and KRAUSE are right, however, the correct name for his species would be *P. quinquenervium* Miq. Kegel n. 946, cited by ENGLER and KRAUSE and by PULLE as *P. grandifolium*, belongs, according to our delimitation of the species (v. supra) to *P. acutatum* Schott.

From his study of the material collected by MAGUIRE, A. D. HAWKES added a number of species to those cited by PULLE. Among them is one new species: *P. cyclops* A. D. Hawkes. We reduce this species to *P. acutatum* Schott. New for Suriname would have been *P. nobile* Bull to which HAWKES referred Maguire n. 14405. In our opinion this specimen belongs to *P. insigne* Schott, which was already known from Suriname.

Our study of the unidentified material from Suriname produced a number of species new to this country, viz:

a. *P. myrmecophilum* Engl., previously known from Amazonian Brazil and now collected 4 times in Suriname. Maguire and Stahel n. 470, the type of *Anthurium stahelii* A. D. Hawkes belongs also to this species.

b. *P. jenmanii* Krause, previously known from British Guiana and Amazonian Brazil. It was collected in Suriname for the first time by LANJOUW and LINDEMAN in 1948. *P. scabrum* Krause is in our opinion a synonym.

c. *P. dioscoreoides* Gleas., previously known from British Guiana and, although known only in the sterile state, easily recognisable by its leaves.

d. *P. guttiferum* Kunth, previously already known from a great part of tropical America. *P. rudgeanum* Schott, cited by PULLE, was reduced by the present authors to a variety of this species, differing from the type in the short internodes of the branches (*P. guttiferum* Kunth var. *rudgeanum* (Schott) Jonk. et Jonk., nov. comb.). The variety is also known from Trinidad, British and French Guiana.

PULLE referred Kegel n. 850, on the authority of ENGLER, to *P. heterophyllum* Poepp. In our opinion it belongs to *P. sphalerum* Schott, already known from Suriname, where it was collected by SPLITGERBER. This specimen (Splitgerber s.n.), the type specimen, was seen neither by the present authors nor by PULLE or ENGLER. The transfer of the above-mentioned specimen to *P. sphalerum* means that *P. heterophyllum* Poepp. does not occur in Suriname.

The number of *Philodendron* species from Suriname has now been raised to 13; two of these species proved to be represented by 2 varieties. Not yet collected but to be expected are: 1. *P. eordatum* Schott, known from Brazil, French and British Guiana and according to a verbal information by N. Y. SANDWICH common and conspicuous in British Guiana though rarely flowering. In our opinion the variety *poiteauanum* (Schott) Engl. of this species is of no value.

2. *P. longepetiolatum* Engl., known from French and British Guiana.

MONTRICHARDIA Crueger: *M. arborescens* (L.) Schott is common in the coastal region of Suriname, its vernacular name being mokko-mokko. Sometimes its stems are spiny; these spiny specimens were regarded by G. W. F. MEYER and by SCHOTT as a distinct species: *M. aculeata* (G. W. F. Mey.) Schott, and by ENGLER as a variety: var. *aculeata* (G. W. F. Mey.) Engl. In our opinion this difference is of little value. We wish to draw the attention to what SIMMONDS has to say on this topic, however: "The variety *aculeata* (Mey.) Engl. differs from the typical plant in its greater height, spiny stems, rough petioles and the veins more exposed in the sinus. Field work in Grenada, B.W.I., suggested that the variety is a good one, though there is little difference in size and there is intergradation of spyness. A distinction is not normally possible in the herbarium however. It is possible that an ecological difference exists, the typical form preferring fresh water sides, the var. *aculeata* saline or at least brackish water, and it is desirable that this point should be observed by collectors."

The study of the material collected in Suriname showed that a second species exists with an area limited to the river banks of the interior districts i.e. along the upper reaches of the rivers. This species is characterized by the leaf shape, the nervation and the length of the cusp in which the leaf sheath goes out and appeared to be conspecific with *M. linifera* (Arr.) Schott, previously known from Southern Brazil.

Another species, *M. splitgerberi* Schott, was described from Suriname. According to ENDER, Ind. Ar. (1864), p. 55, it is a synonym of *M. arborescens* (L.) Schott. The type specimen, Splitgerber s.n., apparently has been lost and also the drawing preserved in the Vienna herbarium and cited by ENGLER in Das Pflanzenreich IV. 23C (1911), p. 125.

SCHISMATOGLOTTIS Zoll et Mor.: The most remarkable result of our studies of the Suriname *Araceae* was the finding of a new species of the chiefly Malesian genus *Schismatoglottis*. The specimen was collected by MAGUIRE in 1944 on Tafelberg Mt. but was not recognized by A. D. HAWKES, who listed it as *Dieffenbachia seguina* (L.) Schott. The present authors describe it as a new species: *Schismatoglottis americana* Jonk. et Jonk., nov. spec. (fig. 2).

Cataphylla membranacea lanceolata acuta. Foliorum petiolus teres, 13–26 cm longus, supra sulcatus, ad 11 cm longitudinis vaginatus. Lamina herbacea elliptico-oblongata, basi rotundata et ad petiolum subcontracta, apice acuminata, longe-subulata, 20–30 cm longa et 9–13 cm lata; subula circ. 2.5 cm longa; costa crassa; nervis lateralibus I utrinque circ. 6. Pedunculus teres, circ. 24 cm longus. Spatha basi obliqua, parte inferiore persistente, 3–3.5 cm longa. Spadix sessilis, basi adnatus. Ovarium ad 2 mm longum et 0.5–1 mm crassum, cylindricum, stigmatibus annulari sessili coronatum; ovula pauca placentis 2 parietalibus affixa. Semina 1–3, ovoidea, apiculata, 12-costata. Typus: Maguire 24289 in herbario NY—Surinamo in monte Tafelberg.

This is the first species of this genus recorded from America. Closely related however is the monotypic genus *Philonotium* Benth.; *P. spruceanum* Benth. was once collected at Rio Panuré, Amazonian Brazil (Spruce n. 2948). The leaves show the same characteristic nervation and the same distinct marginal vein and long cusp. The

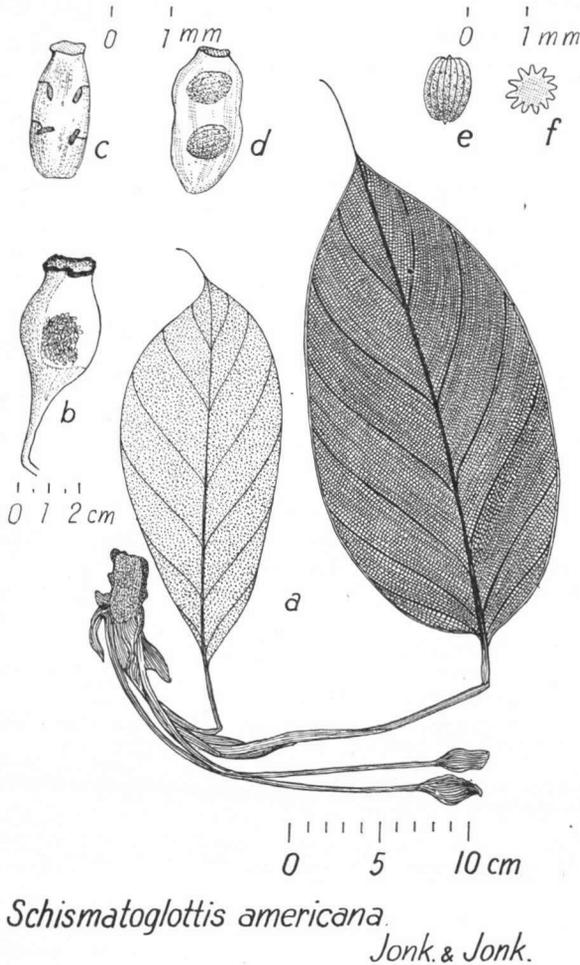


Fig. 2. a. fruiting plant, b. fruiting spadix, c. pistil, d. fruit, e. seed, f. horizontal section of seed.

shape of the leaf sheath and the stamens also agree. *Schismatoglottis* however has 2—4 parietal placentas, whereas *Philonotium* has a single parietal ovule in its unilocular ovary. Some species of *Schismatoglottis* provided with two parietal placentas in the ovary have but a small number of ovules viz. circ. 10. *S. americana* too has 2 parietal placentas

and but 4 ovules. This species is perhaps to be regarded as a link between the asiatic species of the genus, especially those provided with 2 parietal placentas and a small number of ovules, and the genus *Philonotion* from Amazonian Brazil characterized by a 1-celled ovary with a single parietal ovule. More material is needed, however, to decide whether the genus *Philonotion* should be sunk in *Schismatoglottis*.

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 grateful thanks to the directors of the herbaria at Berlin, Brussels, Göttingen, Kew, München, Leiden, New York, Stockholm and Uppsala for the loan of herbarium specimens. A special word of thanks is due to the directors, keepers and staff of the herbaria and botanical gardens, personally visited by the authors, viz. at Amsterdam, Brussels, Gent, Kew, Leiden, London and Paris, for the hospitality and great assistance given during their stay.

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