
Two New Species of *Philodendron* (Araceae) from Brazil

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ABSTRACT. Two new species of *Philodendron*, *P. simonianum* and *P. vargealtense*, are recognized from southeastern Brazil, both belonging to *Philodendron* sect. *Calostigma*.

Key words: Araceae, Brazil, *Philodendron*.

Philodendron, with more than 600 species, is the second largest genus in the Araceae. It is an exclusively neotropical genus occurring mostly in humid, tropical forests. During a revision of Brazilian species of *Philodendron* sect. *Calostigma* (Schott) Pfeiffer (Sakuragui, 1999), two new species from the Atlantic forest of southeastern Brazil were discovered; they are described herein.

The genus *Philodendron* was described by Schott (1829), and the first infrageneric revision was published three years later (Schott, 1832) based mainly on floral characters. The name *Calostigma* was first mentioned in this last work. A detailed description of the genus, including an analysis of both vegetative and floral parts, was made by Endlicher (1837). Schott (1856) presented a treatment of all known species of *Philodendron* until that date, wherein the number of species was tripled compared to the number of species presented by Kunth (1841). The large number of new species was due mainly to new collections. In Schott's (1856) treatment, the species were divided into 22 "greges" (a taxonomic category no longer recognized), based on vegetative characters. These 22 greges were arranged in 7 taxonomic categories (not named), according to the complexity of the leaf blade. Among these greges, two would be at home in section *Calostigma*: *Macrobium*, number 15, and *Imbea*, number 16, both having as a principal characteristic the presence of a cordate leaf base. A final classification was suggested by Schott in 1860, with very few differences from the treatment presented in 1856.

Pfeiffer (1874) presented a nomenclatural revision for the genus, and in this paper the name *Calostigma* was recognized as defining a section within the genus.

Engler (1878) presented a synopsis for the genus, giving special attention to the Brazilian species. He included 116 species, 47 of which were

described as being native to Brazil. The "greges" proposed by Schott (1856, 1860) were left almost intact, being, however, reformulated within sections and subsections. Eleven of Schott's 22 greges were considered in two large sections: *Polyspermium* and *Oligospermium*. The species included in section *Calostigma* by Schott (1856) were considered as belonging to section *Oligospermium* by Engler. Both Engler's further classifications for *Philodendron* (Engler, 1879, 1899) were little modified in relation to his *Flora Brasiliensis* treatment (Engler, 1878).

The last revision including all *Philodendron* species was completed by Krause (1913). Many new species were added in this work, with a total of 222 species. Few changes were made in the infrageneric classification in relation to Engler's last work (Engler, 1899).

Mayo (1990) presented an infrageneric revision of *Philodendron* in which he recognized three subgenera: *Philodendron*, *Pteromischum* (recognized in Krause's treatment (1913) within *Euphilodendron*), and *Meconostigma*. The section *Oligospermium* was considered a synonym of section *Calostigma* (Schott) Pfeiffer (Pfeiffer, 1874).

The species of section *Calostigma* are characterized by having basal or subbasal placentation and typically solitary or few ovules per locule. Owing to its size and diversity, there are no other characters that completely characterize the group (Croat, 1997). According to this last author it includes 5 subsections and 6 series: subsection *Macrobium* (series: *Macrobium*, *Ecordata*, *Reticulata*, *Pachycaulia*); subsection *Glossophyllum* (series: *Glossophyllum* and *Ovata*); subsection *Oligocarpidium*; subsection *Buloana* and subsection *Eucardium*. The major change suggested by Croat (1997) in relation to Mayo's (1990) infrageneric treatment was that section *Belocardium* Schott was submerged in *P.* subsect. *Macrobium*.

The geographic distribution of section *Calostigma* corresponds more or less to the distribution of the entire genus and extends across a wide range of habitats such as forests, swamps, and rocky fields. In Brazil, 26 species have been recognized (Sakuragui, 1999), representing subsections *Macrobium* and *Glossophyllum* (sensu Croat, 1997).

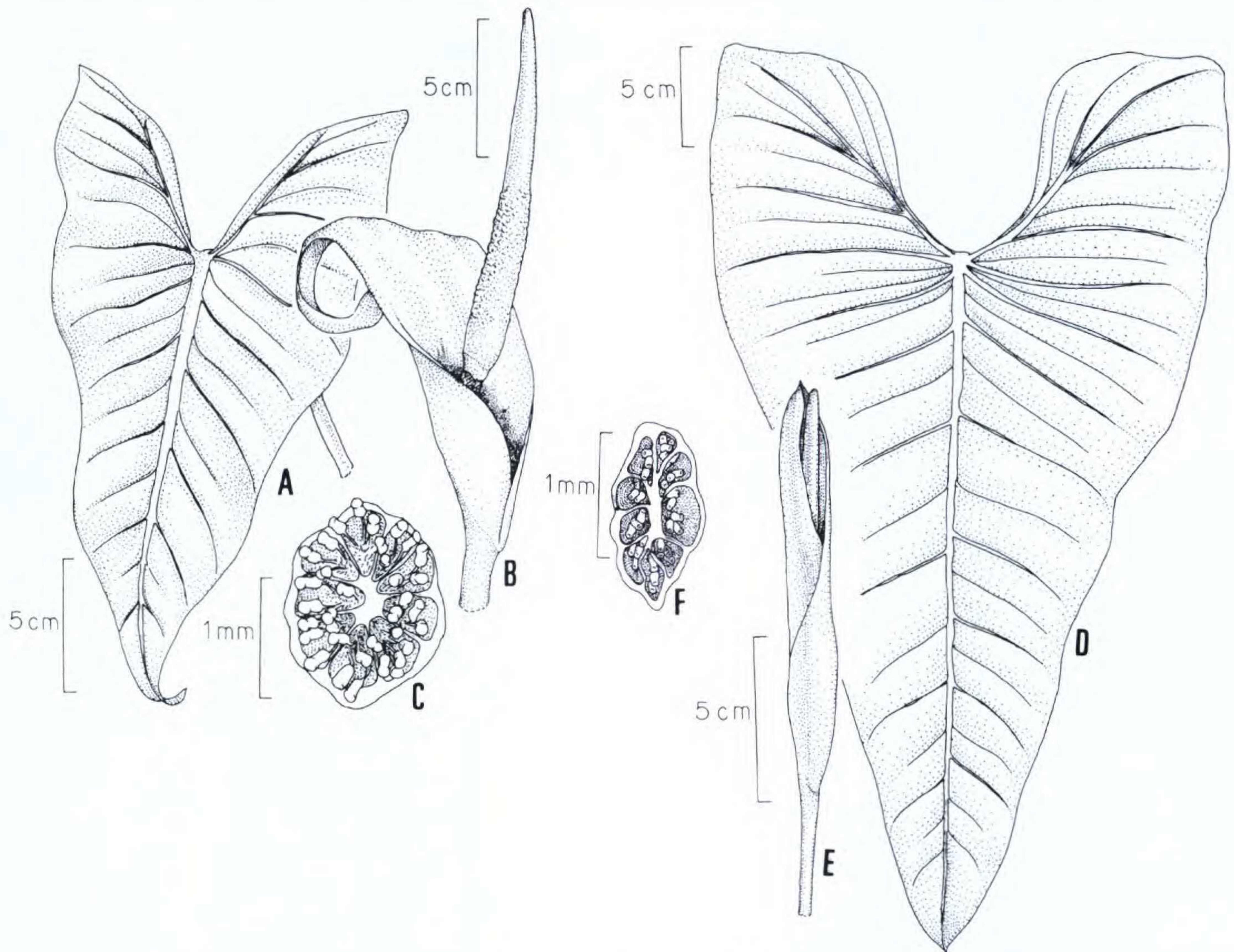


Figure 1. A–C. *Philodendron simonianum* Sakuragui. —A. Leaf. —B. Inflorescence at anthesis. —C. Cross section of the ovary. D–F. *Philodendron vargealtense* Sakuragui. —D. Leaf. —E. Inflorescence. —F. Cross section of the ovary.

***Philodendron simonianum* Sakuragui, sp. nov.**

TYPE: Brazil. São Paulo: Mpio. de Natividade da Serra, Pouso Alto–Natividade da Serra road, Mata Atlântica forest, 27 Nov. 1996, C. M. Sakuragui & L. A. Takahashi 629 (holotype, SPF; isotypes, K, MO). Figure 1A–C.

Haec species *P. appendiculato* affinis sed spadicis zona sterili terminali elongata gradatim angustata, spatha reflexa differt. Lamina foliaris ovata usque ovato-triangularis, subcoriacea, apice acuminata, basi sagittata, nervis lateralibus primariis utrinque 3 vel 4. Spatha ovata, sine constrictione, sub anthesi reflexa. Ovarium 9- ad 11-loculare, loculis 4- vel 5-ovulatis, placenta sub-basali.

Scandent herb. Internodes 2–4 cm long, greenish becoming pale. Prophyll 20–23 × 3 cm, narrowly triangular, green to greenish yellow becoming cream and then brownish red. Petiole 27–39 cm long, green to greenish purple (vinaceous). Leaf blade 36–42 × 14–20 cm, ovate to ovate-triangular, subcoriaceous, paler abaxially, acuminate apically, sagittate basally, anterior lobe 27–40 × 14–23 cm; with 3 or 4 primary lateral veins per side, posterior lobes bluntly acute apically, 7–10.5 × 7–

10.5 cm, 7 basal veins, first and second free to the base, third and higher fused to 1.5–2 cm, fifth and sixth fused to 0.8–1.5 cm, posterior rib ± straight, not at all naked along the sinus, sinus triangular, 0.6–1 cm deep. Inflorescences 3 or 4 per sympodium. Peduncle 4–8 cm long. Spathe 12–13.5 cm long, narrowly ovoid, without a medial constriction, reflexed at anthesis, externally greenish becoming white (at anthesis), internally white, reddish purple at base. Spadix 13–14 cm long, fertile male zone 3.2–4 cm long, cream to pinkish cream; apical sterile zone 4–5 cm long, cream becoming grayish pink post anthesis, medial sterile zone 0.5–0.6 cm long, both the medial and apical sterile zones cream becoming grayish pink after anthesis; female zone 4–5 cm long, pale green becoming pale chestnut-brown. Fertile male flowers with stamens 0.8–2 × 0.7–1.2 mm; sterile male flowers with staminodes 1–2 × 0.8–1.2 mm; medial sterile male flowers with staminodes 1.8–2.3 × 0.8–1.5 mm; female flowers with gynoecium 1.2–2 × 1–1.8 mm, cylindrical; ovary with 9–11 locules; ovules 4 or 5 per locule. Berries: not observed.

This species is characterized by the presence of a long, tapering, apical sterile zone in the spadix and a reflexed spathe during anthesis, the latter feature being quite unusual in the genus.

Among Brazilian species of *P.* sect. *Calostigma*, it can be distinguished from *P. appendiculatum* Nadruz & Mayo, a related species that also occurs in this region and has an apical appendix, by the following features: (i) absence of a strong medial spathe constriction (present in *P. appendiculatum*); (ii) spathe internally reddish purple at the base (cream-colored in *P. appendiculatum*); (iii) apical sterile zone 4–5 cm long, always narrowing toward the tip (2–3.5 cm long and mostly clavate in *P. appendiculatum*).

Philodendron simonianum was collected in the Município of Natividade da Serra, São Paulo, growing as a hemiepiphyte on trees and shrubs in a humid, shady, dense forest near the coast.

The species is named after Simon Mayo for his enormous contribution to the knowledge of Brazilian aroids.

Philodendron vargealtense Sakuragui, sp. nov.

TYPE: Brazil. Espírito Santo: Mpio. de Vargem Alta, São José da Fruteira, 9 Dec. 1956, *Pereira 2300* (holotype, RB). Figure 1D–F.

Haec species *P. myrmecophilo* similis sed ovarii loculis pluriovulatis, placenta sub-basali differt. Lamina foliaris triangulari-ovata, chartacea usque ad subcoriaceam, apice acuta, basi sagittata, nervis lateralibus primariis utrinque 5 vel 6. Spatha cymbiformis medio moderate constricta. Ovarium 8- vel 9-loculare, loculis 6- vel 7-ovulatis, placenta sub-basali.

Scandent herb. Internodes 1.5–3 cm long, greenish becoming grayish. Prophyll 25–30 × 3–4 cm, narrowly triangular, green to greenish cream and then becoming brownish. Petiole 39–42 cm long, green sometimes vinaceous apically. Blade 30–56 × 19–25 cm, oval-triangular, chartaceous to subcoriaceous, acute apically, sagittate basally, anterior lobe 27–36 × 19–25 cm, with 4 or 5 primary lateral veins per side, interprimary lateral veins distinct, posterior lobes 11.5–13 × 10–11 cm, 4 or 5 basal veins, the first free to the base, the second fused to 0.9–1.5 cm, the third and fourth fused to 2–2.5 cm, posterior rib straight, naked for 2–2.5 cm along the sinus, sinus hippocrepiform, 2–2.5 cm deep, 3–3.5 cm wide. Inflorescence 1 or 2 per sympodium. Peduncle 3–6 cm long. Spathe 12–14 cm long, cymbiform with a moderate medial constriction, white externally becoming green post anthesis, bronze internally post anthesis. Spadix 9–11 cm long; male zone 6–7 cm long; medial sterile zone

1–1.5 cm long; female zone 4.5–5.5 cm long. Fertile male flowers with stamens 0.8–1.5 × 1–1.3 mm, sterile male flowers with staminodes 1.5–2 × 1.3–1.8 mm; fertile female flowers with gynoecium 0.9–1.8 × 0.7–1.5 mm; ovary 8–9 locules; ovules 6–7 per locule. Berries: not observed.

Philodendron vargealtense can be distinguished from the other Brazilian species of *P.* sect. *Calostigma* by the following combination of features: anterior lobe with 4 or 5 primary lateral veins, posterior lobe with 4 or 5 basal veins, interprimary lateral veins distinct, leaf blade sagittate basally. The leaves of *P. vargealtense* are rather similar to those of *P. myrmecophilum* Engler, but *P. vargealtense* differs from this species in presenting 6 or 7 ovules per locule with subbasal placentation while in *P. myrmecophilum* the locules are uniovulate with basal placentation.

The species occurs in humid and shady habitats as scandent or rupicolous. It is known so far only from the type locality.

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Literature Cited

- Croat, T. B. 1997. A revision of *Philodendron* subgenus *Philodendron* (Araceae) for Mexico and Central America. *Ann. Missouri Bot. Gard.* 84: 311–704.
- Endlicher, S. 1837. *Genera Plantarum* 1(3): 237.
- Engler, A. 1878. Araceae. In C. P. F. von Martius, *Flora Brasiliensis* 3(2): 25–224, t. 2–52.
- . 1879. Araceae. In A. & C. deCandolle, *Monographiae Phanerogamarum*, Vol. 2. Masson, Paris.
- . 1899. Beiträge zur Kenntnis der Araceae IX. 16. Revision der Gattung *Philodendron* Schott. *Bot. Jahrb.* 26: 509–564.
- Krause, K. 1913. Araceae–Philodendroideae–Philodendreae–Philodendrinae. In A. Engler (editor), *Das Pflanzenreich* 60 (IV.23Db): 1–143.
- Kunth, C. S. 1841. *Enumeratio Plantarum* 3: 46–52. Stuttgart & Tübingen.
- Mayo, S. J. 1990. History and infrageneric nomenclature of *Philodendron* (Araceae). *Kew Bull.* 45: 37–71.
- Pfeiffer, L. 1874. *Nomenclator botanicus*. Kassel.
- Sakuragui, C. M. 1999. *Taxonomia e Filogenia de Philodendron sect. Calostigma* (Schott) Pfeiffer no Brasil. Dissertation, Instituto de Biociências, University of São Paulo, Brazil.
- Schott, H. W. 1829. Für Liebhaber der Botanik. *Wiener Zeitschr. Kunst, Literatur, Theater und Mode* 1829 (3) 94: 779–780.
- . 1832. Araceae. Pp. 16–22 in H. W. Schott & S. Endlicher, *Meletemata Botanica*. C. Gerold, Vienna.
- . 1856. *Synopsis Aroidearum. Typis congregationis mechitharisticae*, Vienna.
- . 1860. *Prodromus systematis Aroidearum. Typis congregationis mechitharisticae*, Vienna.