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A new species of *Philodendron (Araceae)*

Abstract

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Philodendron geniculatum is described as a species new to science and illustrated. This species has been in cultivation for decades in the USA, Europe and Asia (Taiwan), but has not flowered until recently. It is characterised by a conspicuous geniculum on the apex of the subterete petiole, by an elliptic leaf blade with a thick, whitish midrib, many parallel primary lateral veins on each side, an auriculate base and a cuspidate apex, as well as by persistent red cataphylls drying brown soon and becoming fibrous later. *P. geniculatum* has a single inflorescence with a striking spathe, outside burgundy-red in the lower part and intensively red in the upper part. The species is morphologically closest and probably related to *P. scherberichii,* from which we delimit it.

Additional key words: aroids, *Philodendron geniculatum, Philodendron scherberichii,* taxonomy, botanical garden, Colombia

Introduction

This new *Philodendron* species flowered in April 2012 in cultivation in the Botanischer Garten München-Nymphenburg for the first time after decades of thriving in vegetative condition. Earlier treatments with gibberellin acid were without any success, the reason for its recent flowering after such a long time is therefore unclear. According to Graf (1963: 193, 1982: t. 245, 2423), this species was introduced from Colombia by the Alberts & Merkel Nursery in Florida (11580 Hagen Ranch Rd., Boynton Beach, FL, 33437, USA), but the exact collection locality and the date of introduction are not given. The species was first depicted by Graf (1963) as "*Philodendron*(?) 'Jet Streak' (species C)", indicating some doubt about its placement in that genus. Later on, it was even cultivated under the name "*Rhodospatha* 'Jet Streak'", but Graf (1982) also mentioned explicitly that it may belong to another genus. Probably it was treated under the genus *Rhodospatha* because of the presence of a conspicuous geniculum, which is a typical feature of this genus but rare in *Philodendron* (Fig. 1A). For us, it was always clear that this species was a true *Philodendron* and not a *Rhodospatha,* but the latter name was kept elsewhere for this plant in cultivation. Now we are glad to describe correctly this handsome and by now reasonably well-known species.

Results and Discussion

Philodendron geniculatum Bogner & Croat, **sp. nov.**
Holotype: Cultivated in the Botanischer Garten München-Nymphenburg, preserved at flowering 10 April 2012, *J. Bogner 2969* (M; isotypes: COL, MO).

Caules non florescentes internodiis longis (12–16 cm), caules florescentes foliis dense dispositis; petiolo genic-

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ulo distincto apicali; laminis foliorum nervo mediano crasso albido, nervis lateralibus primariis multis (21–25 in utrique lateribus) dense dispositis. Spatha extus in parte inferiore intense purpurea in parte superiore laete rubra. Flores feminei pallide viridi, stigma trichomatibus occupatum; ovarium 3- vel 4-loculatum placentione axillare ovulis multis; flores sterili et masculini cremei, pollinis grana ellipsoidea inaperturata, psilata.

Plant creeping or climbing but not appressed-climbing. *Non-flowering shoots* rooting at the nodes, with 12–16 cm long internodes; *petioles* 13–14 cm long and basally with a sheath c. 1.5 cm long; *leaf blades* 25–28 × 13–16 cm. *Cataphylls* 15–23 cm long, intensively red when young, drying brown soon, persisting intact at upper nodes, eventually becoming fibrous. *Flowering shoots* with somewhat larger and more densely arranged leaves and with short internodes; *petioles* 16–25 cm long and (4–)5–6 mm in diameter, smooth to slightly rough, dark green to somewhat reddish tinged, rounded below and flat on upper side, basally with a sheath up to 5 cm long, apically with a conspicuous geniculum c. 1.5 cm long and 1 cm in diameter, the latter very deep red, rough; *leaf blades* 29–39 × 17–23 cm, elliptic, 1.6–1.7 cm times longer than wide, about twice as long as petiole; base obtuse or auriculate to broadly cordulate, apex cuspidate and 1–1.5 cm long; subcoriaceous, more or less dark green and weakly glossy above and light green underneath, margin slightly hyaline and sometimes reddish tinged, releasing an aromatic odour when crushed; *venation* parallel-pinnate, veins sunken on upper side and prominent underneath; *midrib* broad, whitish to whitish green, at base c. 0.8 cm wide and narrowing towards apex; *primary lateral veins* (21–)23–25 on each side of the midrib, at a distance of 0.5–1.2 cm from each other; *secondary veins* thinner and between the primary ones; *third order veins* much thinner than the others. *Inflorescence* single (always?); *peduncle* c. 8 cm long, below 0.6 cm in diameter and becoming thicker towards the spathe, there 1.3 cm in diameter, deep red and upper part with longitudinal, white lines. *Spathe* 17–18 cm long, slightly constricted before anthesis; *lower part* a convolute tube, c. 6 cm long and 4 cm in diameter, opening to the apex of the tube at anthesis, outside burgundy-red and inside more or less dark red, smooth; *lamina* c. 10 cm long and 7.5 cm wide in the middle, outside intensively red and inside pink to pinkish, constriction c. 3 cm in diameter, apex cuspidate, c. 1.5 cm long. *Spadix* c. 16 cm long, erect at anthesis, obliquely adnate to the base of the spathe for c. 2.5 cm; *stipe* very short, c. 0.5 cm long and dark red; *pistillate portion* c. 4 cm long and c. 1.2 cm in diameter, flowers densely arranged, light green; *sterile portion* c. 1.5 cm long and 1.4 cm in diameter, cream-coloured; *staminate portion* c. 10 cm long and c. 1.2 cm in diameter, narrowing towards the apex, cream-coloured, apex blunt. *Pistils* c. 1.5 mm long; *ovary* cylindrical, light green, c. 1.2 mm long, 3- to 4-locular, with many hemiorthotropous ovules with short but distinct funicles in each locule, placentation axile; *stigma* sessile, discoid, papillose (trichomes 200–250(–300) µm long), whitish, 0.8–0.9 mm in diameter and as wide as the ovary; *stamens* c. 1.2 mm long, apically truncate, c. 1.8 mm in diameter, somewhat angled in view from above; *thecae* lateral; *pollen grains* inaperturate, ellipsoid, 38–45 µm long and 26–28 µm in diameter, exine psilate (smooth). *Fruits* unknown.

Distribution — According to Graf (1963), the new species has been imported to the USA from Colombia. While the exact original collection locality of *Philodendron geniculatum* is unknown, there is great likelihood that the species occurs in Nariño Department on the western slopes of the Andes. This part of Colombia is home to *P. scherberichii* Croat & M. M. Mora, a definitely distinct, but seemingly very closely related species (see Affinities, below). Compared to other species in the genus, this pair of species is so unique that it is very unlikely that they evolved in two very distant parts of Colombia. It must be noted, however, that the second author collected specimens of a very similar species on the eastern slopes of the Cordillera Central *(Croat 103852)* even after this paper was in press.

Etymology —The specific epithet *geniculatum* refers to the prominent geniculum at the apex of the petiole.

Affinities —*Philodendron geniculatum* is characterised by its creeping habit with long internodes in non-flowering shoots but short internodes in flowering shoots (Fig. 1A); persistent red cataphylls drying brown soon and becoming fibrous later; subterete petioles with a conspicuous geniculum at the apex (Fig. 1D); an elliptic leaf blade with a thick, whitish midrib, 21–25 primary lateral veins on each side, an auriculate base and a cuspidate apex; and a spathe with a convolute tube that is burgundy-red outside and red inside and with a lamina intensively red outside and pinkish inside (Fig. 1B–C).

Based on the key to the sections and subsections of *Philodendron* subgenus *Philodendron* given by Croat (1997), *P. geniculatum* belongs to the subsection *Canniphyllum* (Schott) Mayo within section *Philodendron*. That group as originally defined by Krause (1913) has only three species each in Central America (*P. chiripoense* Croat & Grayum, *P. cretosum* Croat & Grayum and *P. roseospathum* Croat) and in South America (*P. cuneatum* Engl., *P. juninense* Engl. and *P. fibrillosum* Poepp.). Subsection *Canniphyllum* is characterised by persistent cataphylls, subterete petioles with a prominent geniculum, entire leaves with elongate blades with an acute, obtuse or cordulate base, as well as by the axile placentation with many ovules per locule.

The new species is most easily confused with *Philodendron scherberichii* (Croat & al. 2007) and using the interactive key for *P.* sect. *Philodendron* (Mora &

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Fig. 1. *Philodendron geniculatum* – A: flowering plant at the Botanical Garden Munich, source of the holotype; B: inflorescence, note the spathe colour and the whitish midrib of the leaf blades; C: inflorescence, spathe opened to show the spadix, note the light green female flowers (below) with wet stigmas; D: petiole with geniculum at the apex. – Photographs by Till Hägele (Munich).

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al. 2008), the type specimen of *P. geniculatum* keyed to that species. However, *P. scherberichii* differs in having appressed-climbing stems, cataphylls more promptly deciduous, proportionately shorter petioles (c. $^1/_3$ the length of the blades), oblong-elliptic glossy blades about 2.7 times as long as wide (versus weakly glossy and 1.6–1.7 times as long as wide in *P. geniculatum*) and cordate rather than cordulate at base (broadly rounded rather than tapering to base with small auricles as in *P. geniculatum*). Furthermore, *P. scherberichii* has an inflorescence with the spadix protruding forward out of the spathe and with the spathe opening to the very base (versus with the spadix erect and spathe opening only to the apex of the tube). In addition, *P. scherberichii* differs in having 4–6 locules with only 3–5 ovules per locule borne in a single translucent envelope.

The low number of ovules per locule caused the placement of *Philodendron scherberichii* in section *Macrobelium,* whereas species with large numbers of ovules per locule like *P. geniculatum* are generally classified in section *Philodendron*. This disparate placement of the two seemingly related species might be due to a somewhat artificial sectional classification of the genus. It is therefore likely that *P. geniculatum* and *P. scherberichii* will prove to be more closely related than is currently recognised based only on the relative number of ovules per locule.

Chromosome number — Unfortunately the chromosome number could not be established exactly. The metaphase plates showed $2n = 34$ or 36, based on the accession cultivated in the Botanical Garden München-Nymphenburg, from which also the holotype specimen was preserved.

Cultivation — *Philodendron geniculatum* grows well in tropical greenhouses in the USA, Europe and Asia (Taiwan), where it is found in botanical gardens and private collections. This species is best growing as a creeper rooting in the ground of plant beds in a humus-rich soil. It can be easily propagated by cuttings.

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