Two New *Caladium* Species (Araceae)

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ABSTRACT

Two caladiums that have been widely cultivated are fully described and named as new species, together with notes on earlier confusion over their names.

KEY WORDS

Caladium clavatum, *Caladium praetermissum*, 'Hilo Beauty', Araceae.

INTRODUCTION

For many decades two *Caladium* species have been in cultivation under a variety of names. One of these is usually cultivated under the name *Alocasia 'Hilo Beauty'* in Europe and in the United States of America. It was also pictured in the several editions of A. B. Graf's 'Exotica' under that name. This species does not flower very often and in over forty years it has only flowered twice in the Botanical Garden of Munich. The other is known in cultivation incorrectly, as *Caladium bicolor* (Aiton) Vent. var. *rubicundum* Engl. Both taxa are undescribed species of *Caladium* and are introduced and established here with new names.

Caladium clavatum Hett., Bogn. & J. Boos **sp. nov.**

Type: collected from a living plant, cultivated in the Botanical Gardens of Wageningen University (Netherlands) (donated by P. Resslar, USA, from cultivated stock, probably originating from a plant introduced into cultivation by B. Feuerstein & N. Caroll, originating from E. Ecuador, found along a road branching off the road from Baeza to Tena, running along the Napo river westward to Francisco de Orellana ("Coca"), Napo Prov., Ecuador), 22 July 2008, *Hetterscheid H.AR.529-T* (holotype, WAG, spiritcoll.). Plate 1.

Diagnosis

A congeneribus ceteris tubere propagulis longis rhizomatiformibus, pistillis proximalibus partibus stylinis lateraliter connatis differt.

Plant a seasonally dormant herb. Underground part a depressed-globose tuber, 9 cm in diam., 7 cm high, top truncated, producing annual, rhizomatous offsets; offsets to 11 cm long and .8 cm in diam., terete throughout or with an apical tuber. Flowering at the end of the vegetative period or directly after dormancy and then without leaves. Leaf long-petiolate; petiole to 90 cm long, to 1.5 cm in diam., dark brownish purple with darker spots, paler when older; lamina broadly obcordate, peltate, 15–60 cm long, 10–45 cm wide, top broadly acute, aristate, upper surface dark green with whitish spots in young plants, older plants greenish violet with a greyish waxy hue and small, irregularly

Plate 1 *Caladium clavatum*; upper left - tuber; upper right - leaf upper surface; lower left - inflorescence; lower right - spadix partly exposed, showing peltate synandrodes. Photographs: W.L.A. Hetterscheid.

angulate pinkish spots, primary and major lateral veins prominent, raised, deep violet to maroon, lower surface greyish purple. Inflorescence single or two, flowering shortly after each other and producing a strong sweet scent during female anthesis; peduncle shorter than petioles, 35–40 cm long, .7–.8 mm in diam., smooth, dull dark greyish purple with a pale grey wax-layer; spathe 13–19 cm long, base and limb separated by a strong constriction; base strongly convolute, ovoid, 4–5 cm long, 3–3.5 cm in diam. (closed), 12–13 cm wide when spread, outside dull dirty greenish with or without a purple flush, at the base dark pink or not, near the margins bright pink to whitish or dirty green, all parts covered by a wax layer, inside deep dark maroon, very glossy; limb oblique, upper part revolute, ovate, 9–15 cm long, 5–6.5 cm wide, top acute or obtuse with a very small acute apiculum, margins revolute, inside white with margins pale pink or pink all over, outside very pale green with pale pinkish flushes. Spadix slightly shorter than spathe, 11.5–13.5 cm long, base obliquely inserted on the spathe base; female zone cylindric-fusiform, 23–26 mm long, 12–13 mm in diam. at the middle, top and base slightly attenuated, flowers densely crowded; sterile zone more or less cylindric or conical, 2–4 cm long, 14 mm in diam. at the base, 10 mm in diam. at the top, entirely covered by synandrodes, these more or less distant; male zone conical with attenuated and subcylindric basal part, 7–7.5 cm long, 13–16 mm in diam. near the base of the conical part, the latter slightly bilaterally compressed, subacute, covered all over by densely crowded synandria. Pistils elongate, cylindric, 3 mm long, .8 mm in diam.; ovary 2 mm long, free; stylar region 1 mm long, those of adjacent pistils laterally fused to form a (dis-)continuous layer; stigma more or less orbicular, .6–.8 mm in diam., .1 mm thick, shallowly corrugate, off-white. Synandria peltate, consisting of 4–5 stamens, 2.5 mm long, 2–3 mm in diam., irregular angulate and lobed in upper view. Synandrodes elongate, more or less clavate (lower ones) to subpeltate, 2–4 mm long, with an obconical, stalk-like base, 1–3 mm long, decreasing in length in the upper parts of the sterile zone, and an irregular to suborbicular, more or less flattened upper part, the latter 1 mm high, 2–3 mm in diam., off-white, entire or with a small central depression or irregular grooves radiating from the centre, oval to subangulate or irregular in upper view. Pollen in monads (pers. comm. M. Grayum to J. Boos). Infructescences unknown.

Distribution

ECUADOR, Napo Prov.; BOLIVIA (but see note 2).

Etymology

The species epithet "clavatum" refers to the shape of the synandrodes of this new species.

Note 1: Engler's name *Caladium bicolor* var. *rubicundum* Engl. (*Flor. Bras.*, 1872:181; plate 41) was used when this species was introduced to the horticultural public, probably in the 1973 Edition of Graf's *Exotica*, using a picture of a single leaf tagged "*Caladium bicolor rubicunda*".

However *C. clavatum* is by no means a form of *C. bicolor* since the latter has sessile synandrodes, free styles, a peduncle longer than the petioles, no scent and does not produce rhizomatous offsets.

The rhizomatous offset development is a unique character setting *C. clavatum* apart from all other *Caladium* species, and the fusion of adjacent stylar regions is also a character of this species unique in the Araceae. In *Syngonium*, a genus phylogenetically closely related to *Caladium*, all the gynoecia are fused entirely in one inflorescence.

For differences with *C. praetermissum* n. sp., see below.

Note 2: the natural distribution of *C. clavatum* in S. America remains unknown. Since many *Caladium* species have been moved around by humans as so-called "indian charm" plants (Rodway, 1917), their present distribution may be entirely or partly artificial, where plants escaped

from villages and established themselves in the surrounding ecosystems.

Caladium praetermissum Bogn. & Hett. **sp. nov.**
Alocasia 'Hilo Beauty' (in Graf, 1985)

Type: collected from a living plant, grown in the Munich Botanical Garden, origin unknown (only known in cultivation), May 1981, *Bogner 1557* (holotype, M), Plate 2.

Diagnosis

A Caladio bicolore caule rhizomatoso crasso, foliis dilute viridibus maculis maioribus irregulariter albis aut cremeis vel aliquantum cinereis, synandriis clavatis inter floribus femineis et masculis differt.

Evergreen herb. Underground part a thick rhizome, 3.5–18 cm long and 2.5–8.0 cm in diam., suberect to erect, outside brown, producing few short rhizomatous offsets. Petiole nearly terete, the ventral side somewhat flattened, 34–108 cm long and (.5–) .7–1.5 cm in diam., uniformly purple-colored or purplish, only the upper part slightly paler; sheath 10–35 cm long. Leaf blade cordate-peltate, membranous, 21–42 cm long and 14–31 cm wide, pale green to mid green, with larger, irregular cream-colored to somewhat greyish spots (spots darkening with age of the leaves) on upper surface, lower surface much paler; spots translucent, apex cuspidate, basal lobes 6–13 cm long and rounded, sinus (at base) v-shaped and 4–10 cm deep, insertion of petiole 2–3 cm below the sinus, venation reticulate, midrib strong, on each side with 6–8 primary lateral veins, the two basal ones running into the basal lobes and divided at nearly a quarter to a third of their length and then further divided, main venation on both sides pale green to purplish tinged, second order veins between the primary ones thinner and forming an interprimary collective vein, third order veins much thinner and anastomosing, the primary lateral veins terminating in a collective vein along the margin in a distance of 1–3(–4) mm of it, marginal vein thin and inconspicuous. Cataphylls 13–19 cm long. Peduncle ca. 25 cm long and .3–.4 cm in diam., same color as petiole. Spathe 10 cm long, only very slightly constricted, limb of spathe cream-colored, apex mucronate, ca. 3 mm long. Spadix much shorter than spathe, ca. 5 cm long; female zone ca. 2 cm long and 6 mm in diam.; sterile zone with synandrodes between female and male flowers .8–1.0 cm long and ca. 2 mm in diam.; male zone 1.8–2.0 cm long and ca. 3 mm in diam., fertile to apex, apex acute. Flowers unisexual, naked. Female flowers densely arranged, stigma orbicular, nearly as broad as ovary, .9–1.0 mm in diam., slightly depressed in the center. Synandria somewhat densely arranged, lower ones more or less elliptic and upper ones lobed in upper view, .7–.8 mm in diam., thecae lateral. Synandrodes loosely arranged, subclavate to peltate, ca. .8 mm long and stipe ca. .3 mm in diam., widened at top and there ca. .5 mm in diam., flattened, orbicular in upper view. Infructescences unknown. Chromosomes: 2n = 28.

Etymology

The species epithet "*praetermissum*" means overlooked or forgotten, referring to it being considered an *Alocasia* for a long time.

Cultivation

C. praetermissum is an evergreen herb which grows well in a pot in light, humus-rich soil but needs warm (greenhouse-) conditions. In Munich one group of this species grows in a peat swamp in a stove house and these specimens are two to three times bigger than those growing in pots. Cultivated plants usually possess three to four leaves simultaneously.

Note 1: It is not clear why this plant is identified in cultivation as an *Alocasia* because all species of that genus possess a sterile appendix which is easily observable. Furthermore the leaves of the genus *Alocasia* are usually coriaceous but membranous in *Caladium*.

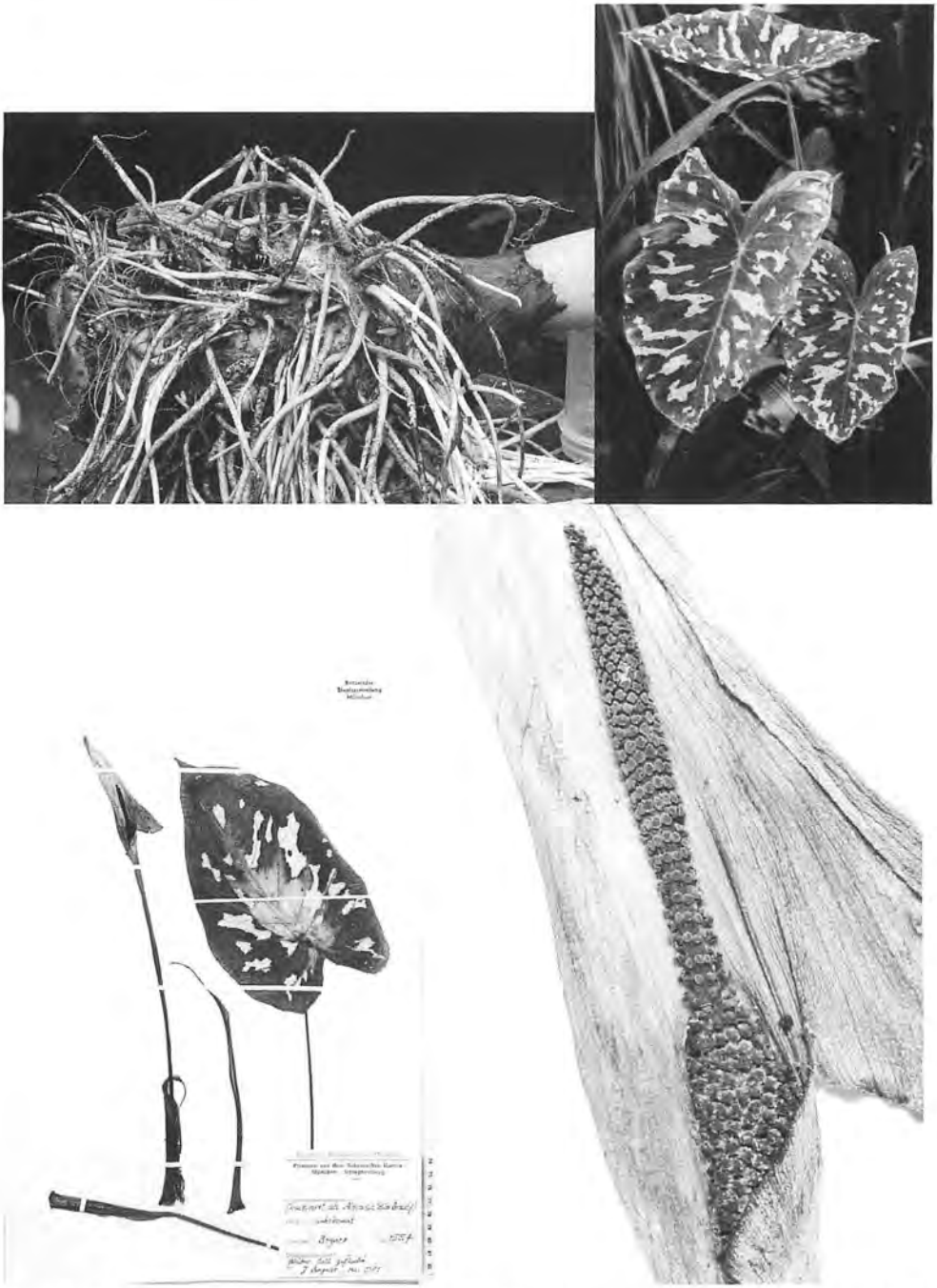

Plate 2 *Caladium praetermissum*; upper left - rhizome; upper right - leaves; lower left - holotype (*Bogner 1557*, M); lower right - holotype, spadix exposed. Photographs: upper left: W.L.A. Hetterscheid; upper right: J. Bogner; lower: F. Höck.

Note 2: *C. praetermissum* is similar to *C. bicolor* (Aiton) Vent. in habit but differs in sprouting from a thick underground rhizomatous stem, in having pale green leaf blades with larger, white or more or less cream-colored spots and especially in having clavate synandrodes between the female and male flowers, orbicular in upper view, which in *C. bicolor* are respectively flat and sessile and in upper view elongate.

Caladium praetermissum can easily be distinguished from other species of this genus by the clavate synandrodes which are orbicular in upper view and by a leaf blade proportion with a length/width ratio of ca. 3:2. Additionally it can be distinguished from the other new species presented here, *Caladium clavatum*, by the latter possessing leaf blades which are nearly as long as wide, ca. 1:1, and the latter growing from a depressed globose tuber. Furthermore, both species also differ from *C.. bicolor* in their color, *Caladium praetermissum* having pale green leaf blades with larger cream-colored spots and *C.. clavatum* having leaf blades with a reddish to violet tinge, with the veins more or less deeper red to purple and the large spots pale reddish pinkish colored.

Note 3: When all plants in cultivation are derived vegetatively from one clone, the latter may then be regarded as a cultivar, which should carry the name *C. praetermissum* 'Hilo Beauty' or *C.* 'Hilo Beauty' (the cultivar epithet established by Graf, 1982 as part of the name *Alocasia* 'Hilo Beauty').

Note 4: The natural distribution of *C. praetermissum* remains a mystery. In the general area of Hilo on Hawaii, plants are found with leaves similar to *C. praetermissum* but smaller, broader and thicker. These plants usually show a tuber shape typical for *C. bicolor* but every now and then specimens are found with a more elongate, rhizome-like tuber (pers. comm. P. Resslar, USA). These plants are also said to resemble *C. marmoratum* Mathieu, a species described from Ecuador. It needs further study to establish if *C. praetermissum* is an aberrant offshoot of these plants around Hilo. The name *Caladium marmoratum* stands for a form of *C. bicolor* with the typical flat and elongate synandrodes, as could be observed from a redrawing at Kew of the original illustration, and is therefore not applicable to the species described here. In any case, however, the cultivar name *Caladium* 'Hilo Beauty' would be appropriate since a cultivar name only requires a genus name and the cultivar epithet.

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