Two new aroids from South America

Abstract


Two new species of Araceae from South America are described and illustrated. The one is Anthurium ensifolium from Bahia, eastern Brazil, which is tentatively placed in A. sect. Urospadix subsect. Obscureviridia. It seems close to A. cleistanthum, a poorly known species from Espírito Santo, Brazil, and also resembles A. erskinei from Bahia. The other is Gorgonidium bulbostylum from Andean Bolivia, which differs from all other species of the genus by the unusual aspect of the style that has an inflated, more or less ovoid apical portion. The stigma is also peculiar in being globose and conspicuously lobed, with lobes upwardly directed.

1. Anthurium ensifolium

Twelve years ago we received at the Munich Botanical Garden living material of an interesting Anthurium from the state of Bahia, Brazil, since when it has been in cultivation. The very narrow, coriaceous leaves and very short-peduncled inflorescences are characteristic for this species. Apparently related to A. cleistanthum G. M. Barroso, we recognize it as a new species. It is easy to grow and flowers nearly all around the year. Descriptive terminology follows Croat & Bunting (1979).

Anthurium ensifolium Bogner & E. G. Gonç., sp. nova – Fig. 1-2
Holotypus: Brazil, Bahia, Itapetinga, 1990, Bogner 2450 (M; isotypus UB).

Ad sectione Urospadicem Schott pertinens. Internodia brevia, 4.5-5.5 cm diam.; cataphylla lanceolata, 5-7 cm longa, 0.6-0.8 cm lata, in fibras persistentes soluta; petiolarus 3.4-4.5 cm longus, 0.3-0.5 cm diam., adaxiale canaliculatus, marginibus acutis; lamina coriacea, lineari-oblonga vel lineari-elliptica, 34-57 cm longa, 2-4.5 cm lata; nervis primariis lateralibus 24-26 utroque, arcuatis; pedunculus 2.5-3 cm longus, 0.4-0.8 cm diam.; spatha recta vix patens, coriacea lanceolata vel ovato-lanceolata 9.5-10 cm longa, 2.3-2.5 cm lata; spadix castaneus vel purpureascens, 7-9.2 cm longus, inferne 0.7-1.5 cm diam. sursum attenuatus.
Stem thick, internodes short, 4.5-5.5 cm diam.; roots more or less dense, whitish to greenish, smooth; cataphylls lanceolate, 5-7 cm long, 0.6-0.8 cm wide, persisting as a mass of fibres. Leaves erect to slightly spreading; petiole 3.4-4.5 cm long, 0.3-0.5 cm diam., adaxially shallowly canaliculate with acute margins, abaxially rounded, the surface minutely white-punctate in fresh material, medium to dark glossy green; geniculum slightly thicker than the petiole, clear glossy green, 0.5-1 cm long; sheath 1.4-2 cm long; blade coriaceous, linear-elliptic to linear-oblong, acute to shortly acuminate at apex, obtuse to acute at base, 34-57 cm long, 2-4.5 cm wide, broadest at middle or slightly below, margins very weakly undulate in dry material; surface mat, medium to dark green, sometimes slightly glaucous or velvety, lower face mat, slightly paler, densely white-punctate in living plants; both faces drying mat, yellowish brown;

Fig. 1. Anthurium ensifolium – habit of a cultivated individual at the Munich Botanical Garden.
midrib slightly prominent above, obtuse to acutely keeled below; venation almost invisible on both faces in living plants, becoming strongly conspicuous after drying, primary lateral veins 24-26 per side in dry leaves, arising from midrib at an angle of 30-50° arcuate, slightly prominent on surface, more so on lower face; interprimary veins slightly less prominent than primaries; tertiary veins prominent on both faces in dried leaves, reticulate veins prominulous when dry; collective vein 3-4 mm from leaf margin. Inflorescences usually pendent, much shorter than the leaves; peduncle 2.5-3 cm long, 0.4-0.8 cm diam., 1.2-1.5 times shorter than the petioles; spathe erect, inserted at an angle of 40-45° on the peduncle, coriaceous, lanceolate, 9.5-10 cm long, 2.3-2.5 cm wide, broadest slightly above the base, sometimes almost at middle,
shortly acuminate at apex, obtuse at base, spathe margins meeting obtusely, outside semi-mat, medium green, densely white-punctate in fresh material, inside paler and less densely punctate; spadix brown to slightly purplish, stipitate for 5-6 mm, tapered, 7-9.2 cm long, 0.7-1.5 cm diam. at base, 4-5 mm diam. at apex, broadest near base; flowers rhomboidal, 1.5-2 mm long, 2.5-3 mm wide; 6-8 flowers visible in principal spiral, 6-7 flowers visible in alternate spiral; tepals mat; lateral tepals 0.6-1 mm wide, inner margins concave, outer margins 2-sided; pistils not emergent; stigma ellipsoid; stamens only partially covering the ovary, filaments not exerted, anthers 0.6-0.8 × 0.5-0.8 mm, thecae ovoid, 0.6-0.8 × 0.3-0.4 mm. Inflorescence unknown.

Relationships. – Anthurium ensifolium is easily recognized by the linear, erect leaves, very short peduncles and wide coriaceous spathe that partially encloses the spadix, even after anthesis. Another interesting feature is that the whole inflorescence is not erect at anthesis, but rather perpendicular to the stem axis.

Anthurium ensifolium is tentatively included in A. sect. Urospadix subsect. Obscureviridia Engl. and seems closest to A. cleistanthum G. M. Barroso (1957) from Espírito Santo state. Both species have short-pedunculate inflorescences and proportionally wide spathes compared with other species of A. sect. Urospadix. However, A. cleistanthum has leaves that are up to four times longer than wide, whereas they are 12-15 times longer than wide in A. ensifolium. The leaves are also much more coriaceous in A. ensifolium. Also similar is A. brachypodium G. M. Barroso (1957: 98, t. 14, nom. illeg., non Sodiro 1901: 12), which has, however, much broader leaves (up to 7 times longer than broad) too.

Anthurium ensifolium also resembles A. erskinei Mayo, which occurs in the Chapada Diamantina mountains of central Bahia, above 1000 m (Mayo 1978). Both species have stiff coriaceous leaves, with primary, interprimary and reticulate veins that are inconspicuous in fresh leaves but become conspicuous after drying. However, A. erskinei has much broader leaves (1.75-3.4 times longer than wide) that are ovate, elliptic or obovate, but never linear-lanceolate. Another important difference is that the spathe in A. erskinei is usually perpendicular to the spadix after anthesis, whereas the spathe in A. ensifolium is kept almost parallel to the spadix, even after anthesis.

2. Gorgonidium bulbostylum

The neotropical genus Gorgonidium Schott has four recognized species, all restricted to the Andes, occurring in Peru, Bolivia and northern Argentina (Mayo & al. 1997), including one discovered only recently (Hetterscheid & al., in press). All species are geophytic, losing all aerial parts during the winter. The genus belongs to the tribe Spathicarpeae and is one of the few neotropical aroid genera that have been revised since 1920 (Bogner & Nicolson 1988). Like most geophytic aroids, complete collections are rare and most species are only known from less than ten specimens.

The single, incomplete collection from Bolivia on which this new species is based, was recognized by the authors as a new species in the spring of 2002, during a visit of the junior author (EGG) to the Munich Botanical Garden. Dissection of the flowers showed it to be a hitherto unknown Gorgonidium, so this species is here described as new.

Gorgonidium bulbostylum Bogner & E. G. Gonç., sp. nova – Fig. 3-4

Holotypus: Bolivia, Tarija, Provincia Arce, entrando por la quebrada del Río Cabildo, en dirección a Charajas, 2350 m, bosque de Podocarpus, 21.1.1988, Liberman, Pedrotti & Venanzoni 1857 (LPB; isotypus M).

Caudex ignotus. Petiolus 64 cm longus, ad basim 1.5 cm diam.; lamina bipinnatifida, 28 × 48 cm, lobis lateralis primariis pinnatifidis, 4(-5?) utroque, lobulis triangularibus vel ob lanceolatis. Spatha vittata, cymbiformis, 16 × 3.2 cm; spadix spathe brevier, c. 9 cm longus, inflorescentia
Fig. 3. Gorgonidium bulbostylum – A: spadix, spathe partially cut; B: leaf; C: female flower, side view; D: gynoecium, longitudinal section; E: ovary, cross section; F: synandrium, side view. – Drawn from Liberman & al. 1857 by E. G. Gonçalves.
mascula 4.5 × 0.8 cm, feminina 4.8 × 1.2 cm; synandria (4)5-6-andrica, filamentis connatis, connectivis inconspicuis, thecis rotundatis; pistillum 3-5 mm longum, staminodiis 5-6 capitatis; ovarium 6-loculare, loculis uniovulatis, ovulis orthotropis; stylum ad apicem incrassatum, bulbiforme; stigma hemisphaericum, apice lobato, lobulis sursum spectantis.

Leaf solitary; petiole c. 64 cm long, 1.5 cm in diameter at the base and 0.8 cm at the apex; blade ovate in outline, bipinnatifid, c. 28 × 48 cm, primary lateral lobes 4(-5?) on each side, pinnatifid, elliptic to oblanceolate, 15-29 × 5-15 cm, lobules (minor lobes) triangular to elliptic or oblanceolate, sometimes falcate, 2-9 × 1.5-2.5 cm. Inflorescence solitary; peduncle 8 × 0.3 cm; spathe cymbiform, coriaceous, with yellowish longitudinal stripes, 16 × 3.2 cm; spadix sessile, c. 9 cm long; female zone 4.8 × 1.2 cm, obliquely adnate to the spathe, male zone 4.5 × 0.8 cm. Flowers unisexual, some bisexual flowers occurring only between the male and the female zones. Male
flowers with a synandrium of (4)5-6 stamens, filaments completely connate, 2-2.5 × 1.5 mm, thecae sessile, situated near the apex, globose, 0.4-0.5 × 0.5 mm, dehiscing by a median pore: pollen grains ellipsoid (to slightly ovoid), 37 × 20 µm, inaperturate, exine nearly psilate; connective inconspicuous, flat to very slightly rounded. Female flowers with pistils 3-5 mm long, surrounded by 5-6 strongly capitate staminodes, 1.5-2 × 0.5 mm, with vestigial thecae; ovary broadly ovoid, 2-2.5 × 1-1.5 mm (broader than tall), with six locules, each locule with a single ovoid orthotropic ovule, funicle short, slightly curved; style as long as or, sometimes, longer than the ovary, 2-2.8 × 0.8-1 mm, upper part of the style with a bulb-like swelling; stigma rounded, 6-lobed, lobes upright. Bisexual flowers with fully developed thecae, some stamens fused. Infructescence unknown.

Relationships. – Gorgonidium bulbostylum is so far known only from the type locality, in southern Andean Bolivia. It differs from other species of the genus by the style, which is inflated and more or less ovoid in the apical portion, and by the stigma, which is globose and conspicuously lobed, with the lobes upwardly directed. This kind of stigma is only known in species of other genera, such as Taccarum peregrinum Schott. In the other species of Gorgonidium the stigmas are either planar and lobed (G. vermicidum) or subhemispheric and inconspicuously lobed (G. mirabile and G. vargasii).

Acknowledgements

We like to thank Stephan Beck, La Paz, Bolivia, for his kind cooperation, Thomas B. Croat, St Louis, Missouri, and the referees, Simon Mayo, Kew, and Dan H. Nicolson, Washington D.C., for valuable comments on the manuscript. The second author acknowledges financial support from FAPESP (Ph.D. grant 99/029221-7) and, for his visit to European herbaria, from the Margaret Mee Fellowships Programme, Royal Botanic Gardens, Kew, the Fundação Botânica Margaret Mee, Rio de Janeiro, and the Instituto Plantarum de Estudos da Flora Ltda, Nova Odessa, São Paulo.

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