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Three New Species of *Anthurium* (Araceae) from the Atlantic Forest of Rio de Janeiro, Minas Gerais, and Espírito Santo, Brazil

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Abstract. This study describes and illustrates three new species of *Anthurium* Schott sect. *Urospadix* Engl. subsect. *Obscureviridia* Engl. from the Atlantic Forest of southeastern Brazil: *A. temponiae* Nadruz & Theófilo, *A. martinellii* Nadruz & Theófilo, and *A. erythrospathaceum* Nadruz & Theófilo. Information about their conservation status within priority areas of the Atlantic Forest is included, together with distribution maps and an updated key to the species of subsection *Obscureviridia*.

Key words: Conservation, section *Urospadix*, subsection *Obscureviridia*, taxonomy.

The lack of knowledge of the Brazilian flora is worrying given that about half of its plant species could now be threatened with extinction. This reduction in biodiversity is in great part related to the destruction of natural habitats (Giulietti et al., 2009). The Atlantic Forest of Brazil includes approximately 20,000 plant species, of which 8000 are endemic; however, 92.5% of its original area has been lost. The catalogue *Plantas Raras do Brasil* includes 2291 species of phanerogams, of which more than 1000 occur in southeastern Brazil, especially in the states of Rio de Janeiro and Espírito Santo (Giulietti et al., 2009).

The family Araceae comprises approximately 144 genera and 3645 species (Boyce & Croat, 2018). In Brazil, 38 genera and 511 species of Araceae are recognized, of which the genus *Anthurium* Schott is the second largest with 137 species (Flora do Brasil 2020, under construction). Twenty-seven species of Araceae are considered rare in Brazil, of which 17 belong to *Anthurium*. Eight of them are from the Atlantic Forest, three from Rio de Janeiro State, two from Minas Gerais, and three from Espírito Santo (Temponi et al., 2009).

Various efforts have been made to fill the gaps in distribution and description of new taxa by the Araceae research study group in Brazil (e.g., Pontes & Alves, 2011; Rocha et al., 2014; Temponi & Coelho, 2014; Valadares & Sakuragui, 2014; Calazans et al., 2015; Cardozo et al., 2015; Buturi et al., 2016). Here we present some results from research carried out in the southeastern region of Brazil. Three new species of *Anthurium* are described, one each from the states of Rio de Janeiro, Minas Gerais, and Espírito Santo.

Methods

Leaf width measurements were made in the central region in elliptic leaves, in the widest part in ovate leaves, and at the petiole-blade junction in ovate leaves with cordate bases. Measurements of spathe width were made at the widest points (middle or base). Measurements of petiole and spadix width were made in the mid-region. The descriptive terminology for leaves follows Ellis et al. (2009) and for inflorescences and infructescences Croat and Bunting (1979). The marginal vein concept follows Mayo (1978).

In some regions of eastern Brazil, the species of *Anthurium* sect. *Urospadix* Engl. subsect. *Obscureviridia* Engl. present very short peduncles and the use of ratios is useful to compare pairs of species (e.g., Engler, 1905; Gonçalves & de Paula, 2016). These ratios refer to the relations between the lengths of different structures, such as leaf blade in relation to petiole (leaf blade:petiole ratio), peduncle in relation to petiole (peduncle:petiole ratio), spathe in relation to peduncle (spathe:peduncle ratio), and spadix in relation to peduncle (spadix:peduncle ratio). The ratios between the reproductive and vegetative structures were obtained from fertile branches. Although the use of these ratios does not seem intuitive, it has proved useful in the taxonomic revision of this subsection currently underway (Valadares, in prep.).

The conservation status of each species was evaluated following the guidelines of IUCN (2012). Although

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data for all three species were inadequate for assignment of a conservation status, potential threats are enumerated herein.

Taxonomic Treatment

1. Anthurium erythrospathaceum Nadruz & Theófilo, sp. nov. TYPE: Brazil. Minas Gerais: Diamantina, Vila de Galheiros, Campo Rupestre sobre afloramento rochoso, 18°16′15″S, 43°47′07″W, 11 Feb. 2014, *G. Martinelli et al. 18192* (holotype, RB-739789!). Figures 1, 2, 3J–M.

Diagnosis. *Anthurium erythrospathaceum* Nadruz & Theófilo differs from other species of *Anthurium* subsect. *Obscureviridia* Engl. that have glandular punctations visible on the leaf blade after drying, including *A. minarum* Sakur. & Mayo, *A. binotii* Linden ex Regel, and *A. queirozianum* Nadruz, in having a short, erect stem, only 9 to 12 pairs of primary lateral veins, a reddish geniculum, and berries reddish apically and orange toward the base.

Herb. Stem erect, up to 5 cm, sparsely covered with roots; cataphylls and prophylls 2.4–6.2 cm, entire and reddish to chestnut at stem apex, decomposed toward the stem base. Leaves erect or borne at an angle of 30° in relation to the stem; petiole 3.2–16.5 × 0.34–0.43 cm, canaliculate with acute margins adaxially, obtuse abaxially, green to reddish; geniculum 0.4–1.3 cm, reddish; blade elliptic, 6.2–18.7 × 3.4–7.4 cm, length:breadth ratio 1.8–2.5:1, leaf blade:petiole ratio 1.1–1.9:1, chartaceous when fresh, greenish, concave in cross section, with flat reddish margin, slightly discolorous, glossy above, somewhat paler below, with glandular punctations on abaxial surface; base obtuse-rounded; apex straight-acute; calcium oxalate deposits inconspicuous in dried material; midrib obtuse on both surfaces, reddish green to reddish; primary lateral veins obscured on both surfaces, only weakly distinct from higher-order veins when dried, in 9 to 12 pairs; collective vein arising above the base of the leaf blade 0.2–0.4 cm from the margin; marginal vein 1. Inflorescence with peduncle terete, peduncle:petiole ratio 8.1:1, reddish, erect pre-anthesis and at anthesis, spreading in fruit, 26 × 0.25–0.36 cm; spathe 4.3–10.1 × 1.1–1.8 cm (measured at the base at the widest point), length:breadth ratio 3.9–5.6:1, shorter than peduncle, elliptic to ovate, reddish green pre-anthesis, then becoming red, erect pre-anthesis, at anthesis forming a 90° angle with the spadix or becoming reflexed, forming a right angle at the junction with the peduncle, never surrounding the spadix post-anthesis; spadix 3.9–8.6 × 0.49–0.53 cm, length:breadth ratio 7.9–16.2:1, spadix:peduncle ratio 0.15:1, cylindric, vinaceous pre-anthesis and at anthesis, sessile; flowers 7 in primary spiral, 6 in secondary spiral, tepals vinaceous; androecium with obovate filaments, stamens 1.5 × 0.6 mm; gynoecium 2 × 1.2 mm, obovoid, ovary bilocular, with 1 ovule per locule, placentation axial-subapical, funicle with trichomes. Fruit a berry, reddish at apex and orange toward the base; seed not seen.

Habitat and distribution. *Anthurium erythrospathaceum* is rupicolous or saxicolous, heliophilous, and found on rock outcrops. It is known only from the type locality in the central region of Minas Gerais, in the municipality of Diamantina.

IUCN Red List category. The locality does not lie within a conservation area but at Galheiros, an area where economic impacts on the habitat consist of agriculture and cattle ranching. Despite this, it is not yet possible to assign the species to one of the IUCN "threatened with extinction" categories because of the need for more information on the species' range, so for the present it is assigned to the Data Deficient (DD) category. Living specimens are currently in cultivation at the Rio de Janeiro Botanical Garden.

Etymology. The specific epithet refers to the red coloration of the spathe.

Discussion. *Anthurium erythrospathaceum* belongs to section *Urospadix* subsect. *Obscureviridia* because of the chartaceous leaf blade that is slightly discolorous to concolorous, with primary lateral veins hardly visible (Coelho et al., 2009). This species belongs to a group of species that have glandular punctations visible on the leaf blade after drying, which includes *A. minarum*, *A. binotii*, and *A. queirozianum*. *Anthurium erythrospathaceum* occurs in sympatry with *A. minarum* in the Cadeia do Espinhaço but differs in having only nine to 12 pairs of primary lateral veins and a reddish geniculum, while *A. minarum* has 20 to 25 pairs of primary lateral veins and a green geniculum. *Anthurium erythrospathaceum* differs from *A. binotii* in having a reddish geniculum and berries reddish apically and orange toward the base, while in *A. binotii* the geniculum is green and the berries blackish at the apex and translucid yellow toward the base, and its range includes the Serra do Mar and the Serra da Mantiqueira (Parque Nacional do Itatiaia, Rio de Janeiro State; see Fig. 2). Finally, the new species can be distinguished by its short, erect stem from *A. queirozianum*, which has an elongated creeping stem and is restricted to the muçununga vegetation of the northern part of Espírito Santo.

Descriptions of new species associated with subsection *Obscureviridia* have been published in various papers of the past 20 years (e.g., Gonçalves & Jardim, 2009; Coelho, 2010; Gonçalves & de Paula, 2016), but only Valadares and Sakuragui (2014) have placed them together in an identification key. In this paper, we present an updated version of the key for the species

Figure 1. *Anthurium erythrospathaceum* Nadruz & Theófilo. —A. Habit. —B. Geniculum seen from abaxial side. —C. Geniculum seen from adaxial side. —D. Petiole apex. —E. Petiole in cross section. —F. Leaf blade apex seen laterally. —G. Leaf blade apex seen from adaxial side. —H. Inflorescence. —I. Junction between spathe and peduncle. —J. Spadix in cross section. —K. Detail of the flower on the spadix. —L. Flower at female anthesis. —M. Flower at male anthesis. —N. Flower post-anthesis. —O. Tepal. —P. Gynoecium. —Q. Androecium. Drawn from the type specimen *G. Martinelli et al. 18192* (holotype, RB-739789).

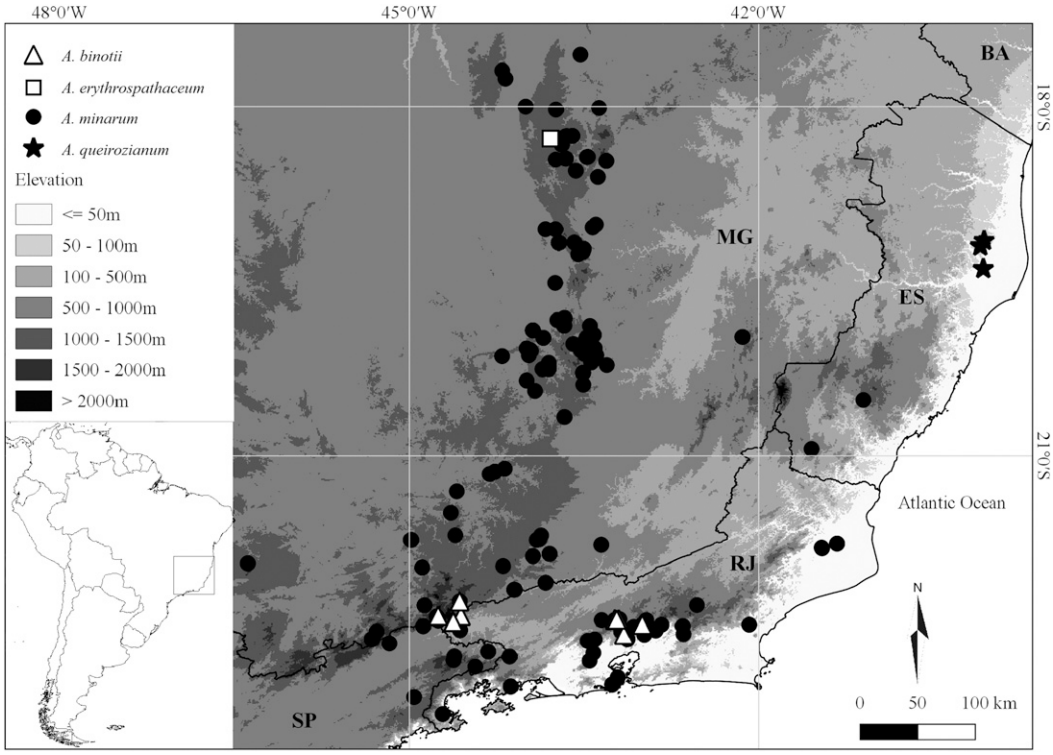

Figure 2. Map showing geographic distribution of *Anthurium erythrospathaceum* Nadruz & Theófilo and close relatives.

of the Atlantic Forest of Brazil, based on a taxonomic revision currently being prepared by the second author (Valadares, in prep.).

2. Anthurium martinellii Nadruz & Theófilo, sp. nov. TYPE: Brazil. Espírito Santo State: Mun. Cachoeiro de Itapemirim, Fazenda Mangabeira, Pedra da Andorinha, 20°46′59″S, 41°21′34″W, 31 Aug. 2004, *G. Martinelli 15975* (holotype, RB-622539!). Figures 3E–I, 4, 5.

Diagnosis. *Anthurium martinellii* Nadruz & Theófilo differs from *A. cleistanthum* G. M. Barroso in having a glossy leaf blade, spadix conical, salmon-colored pre-anthesis and vinaceous at anthesis, and berries vinaceous apically and yellowish toward the base.

Herb. Stem erect, up to 5 cm, sparsely covered with roots; cataphylls and prophylls 6.1–7.2 cm, entire to decomposed at the stem apex, decomposed toward the stem base, chestnut brown. Leaves borne at an angle of 30°–40° in relation to stem; petiole 2.1–5.6 × 0.55–0.62 cm, flattened and slightly sulcate with acute margins adaxially, rounded abaxially, greenish; geniculum 1.5–1.7 cm, greenish; blade narrowly oblong to narrowly elliptic, 27–47.8 × 3.4–6.2 cm, length:breadth ratio 7.7–7.9:1, leaf blade:petiole ratio 12.8–14:1, chartaceous, greenish, convex in cross section, with revolute greenish margin, slightly discolorous, glossy above, somewhat paler below, without glandular punctations; base acute-cuneate; apex acute to straight-apiculate; calcium oxalate deposits inconspicuous in dried material; midrib flattened to rounded adaxially and rounded to acute abaxially, greenish; primary lateral veins obscured on both surfaces, distinct from higher-order veins when dried, in 12 to 14 pairs; collective vein arising at the base of the blade 0.6–0.9 cm from the margin; marginal vein 1. Inflorescence with peduncle compressed laterally, peduncle:petiole ratio 1–1.1:1, green-vinaceous, curved in fruit, 2.3–3.6 × 0.79–0.86 cm; spathe 3.4–9.7 × 1.1–3.4 cm (measured at the base at the widest point), length:breadth ratio 2.8–3:1, spathe:peduncle ratio 1.4–2.6:1, ovate, greenish vinaceous, erect at anthesis and post-anthesis, forming an acute angle at junction with peduncle, decurrent for 0.3 cm, never surrounding the spadix post-anthesis; spadix 2.7–8.8 × 0.78–1.19 cm, length:breadth ratio 3.4–7.3:1, spadix:peduncle ratio 1.1–2.4:1, conical, salmon-colored pre-anthesis, vinaceous at anthesis, and chestnut brown post-anthesis, sessile; flowers 8 per primary spiral, 6 in secondary spiral; tepals salmon-colored to vinaceous; androecium with stamens 1.5 mm, anthers reddish green pre-anthesis;

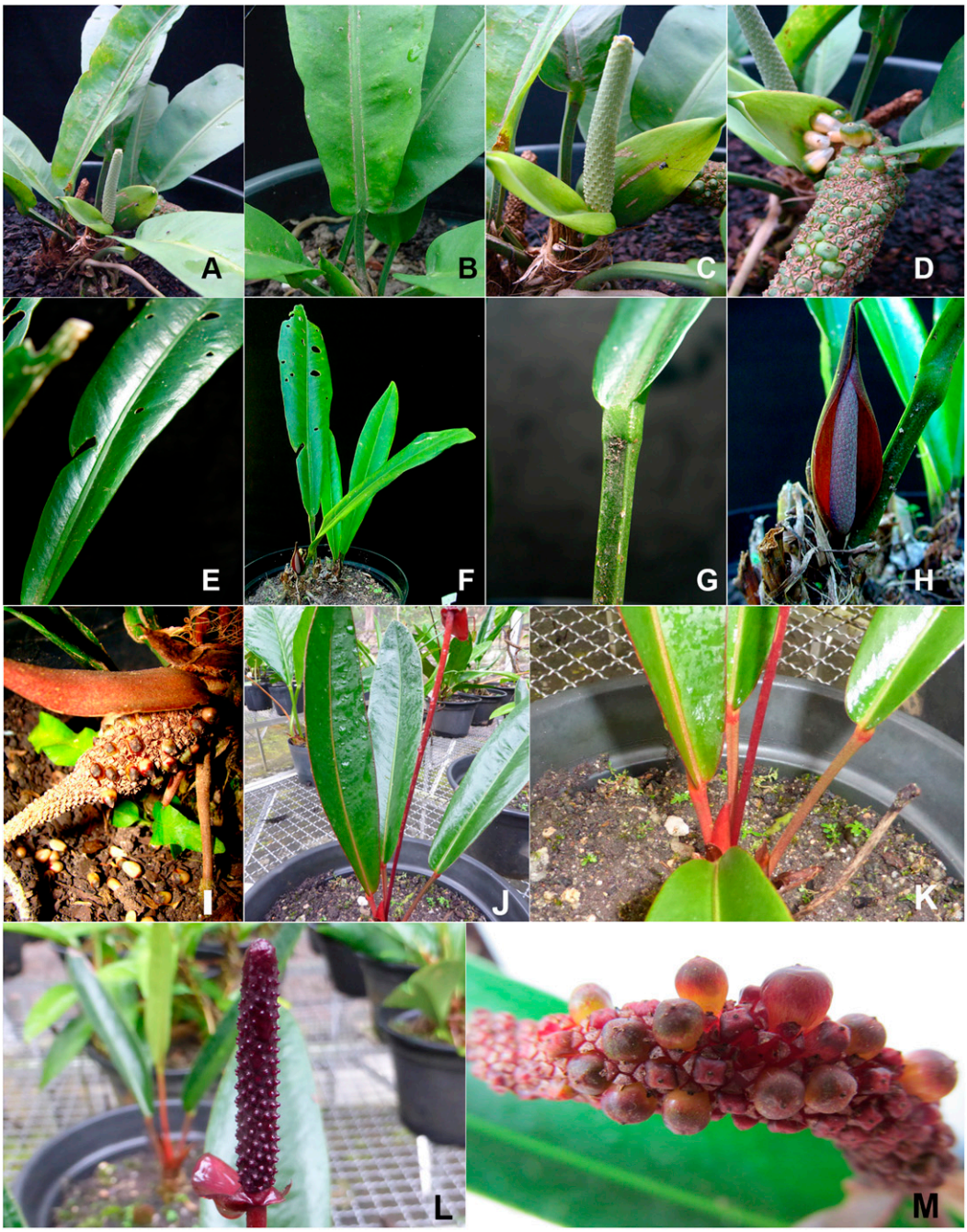

Figure 3. A–D. *Anthurium temponiae* Nadruz & Theófilo. —A. Habit. —B. Lower half of leaf blade. —C. Inflorescence. —D. Infructescence. E–I. *Anthurium martinellii* Nadruz & Theófilo. —E. Leaf blade. —F. Habit. —G. Detail of petiole seen from adaxial side. —H. Inflorescence. —I. Infructescence. J–M. *Anthurium erythrospathaceum* Nadruz & Theófilo. —J. Habit. —K. Details of petiole and peduncle. —L. Inflorescence. —M. Infructescence.

gynoecium 0.2 × 0.1 cm in front view, oblong, color not seen, ovary bilocular, with 1 ovule per locule, placentation axial, funicle with trichomes. Fruit a berry, vinaceous at apex and yellowish toward the base; seed not seen.

Habitat and distribution. *Anthurium martinellii* is a saxicolous, terrestrial, sciophilous species, growing among forest and rock outcrops in submontane dense ombrophilous forest. It is known only from the type

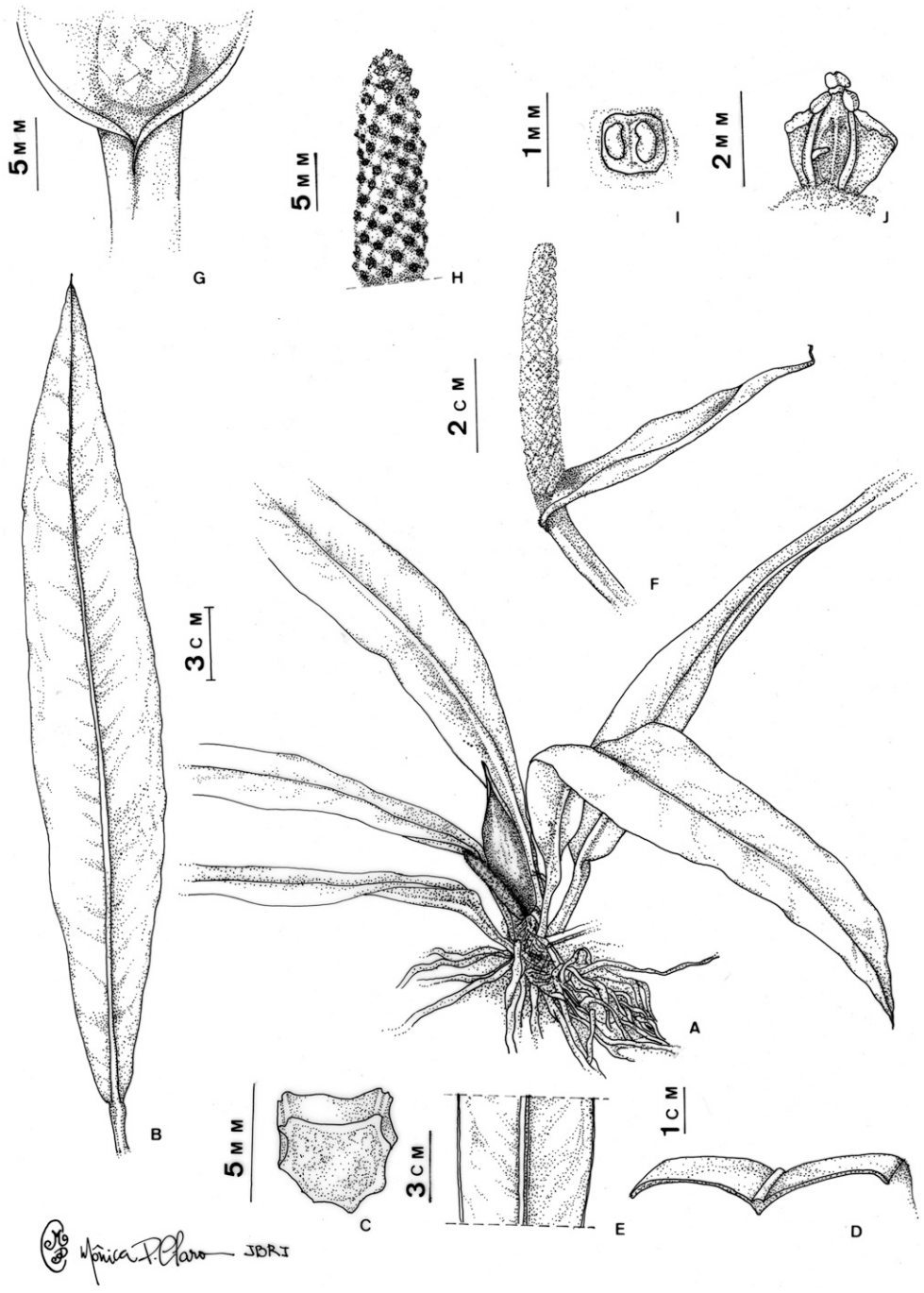

Figure 4. *Anthurium martinellii* Nadruz & Theófilo. —A. Habit. —B. Leaf. —C. Petiole in cross section. —D. Midvein in cross section. —E. Abaxial surface of leaf blade. —F. Inflorescence. —G. Junction between spathe and peduncle. —H. Spadix. —I. Ovary in cross section showing the locules. —J. Flower. Drawn from the type specimen *G. Martinelli 15975* (holotype, RB-622539).

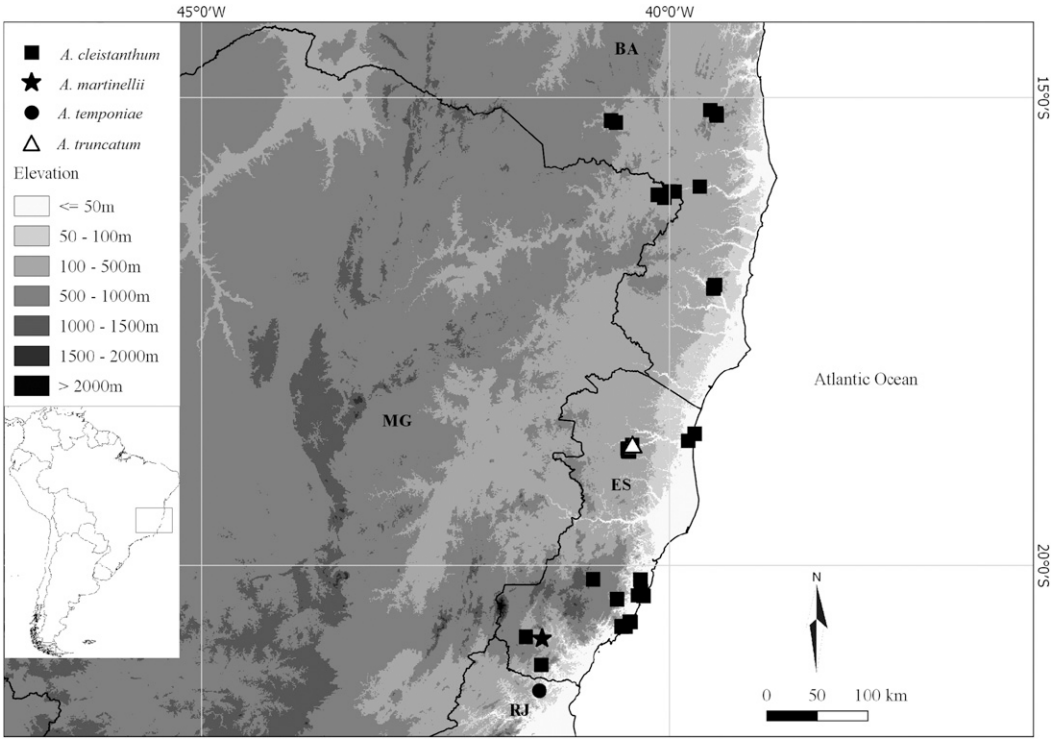

Figure 5. Map showing geographic distribution of *Anthurium temponiae* Nadruz & Theófilo, *A. martinellii* Nadruz & Theófilo, and their most closely related congeners.

locality in the southern region of Espírito Santo State, in the municipality of Cachoeiro de Itapemirim.

IUCN Red List category. The locality of *Anthurium martinellii* does not lie within a conservation area but on a privately owned farm where it is subject to human pressures in the form of urbanization, coffee agriculture, cattle ranching, and mineral extraction. Nevertheless, it cannot be confirmed that the species is under threat of extinction; more information on the species' range is still needed, so it is classified as Data Deficient (DD).

Etymology. This species is named for Dr. Gustavo Martinelli, the collector of the type specimen, in recognition of his many excellent collections of Brazilian Araceae.

Discussion. *Anthurium martinellii* belongs to section *Urospadix* and is closest to the group recognized by Engler (1905) as subsection *Obscureviridia* because of the obscured primary lateral veins. It is very similar to *A. cleistanthum* and *A. truncatum* E. G. Gonç., both of which have a dull (not glossy) leaf blade and primary lateral veins only weakly distinct from higher-order veins when dried.

3. Anthurium temponiae Nadruz & Theófilo, sp. nov. TYPE: Brazil. Rio de Janeiro State: Mun. Campos dos Goytacazes, Morro do Coco Distr., Fazenda Pedra Lisa, Morro do Baú, 21°20′26″S, 41°23′16″W, 10 Nov. 2004, *J. M. A. Braga 7657* (holotype, RB-429036!). Figures 3A–D, 5, 6.

Diagnosis. *Anthurium temponiae* Nadruz & Theófilo is distinguished from *A. cleistanthum* G. M. Barroso by having the leaf blade membranaceous, gynoecium green with vinaceous dots around the stigmatic area during anthesis, and berries greenish at apex and whitish toward the base.

Herb. Stem erect, up to 5 cm, sparsely covered with roots; cataphylls and prophylls 7–7.8 cm, entire and green at stem apex, becoming decomposed and straw-colored toward the stem base. Leaves borne at an angle of 45°–90° in relation to the stem; petiole 11.2–14.3 × 0.38–0.44 cm, flattened with acute margins adaxially, rounded abaxially, greenish; geniculum 0.6–1 cm, greenish; blade narrowly elliptic, 19.7–53 × 4.1–15.6 cm, length:breadth ratio 3.4–4.8:1, leaf blade:petiole ratio 1.76–3.71:1, membranaceous, gray-greenish to greenish, concave in cross section, with flat greenish margin, slightly discolorous, matte above, somewhat paler below, without glandular punctations; base obtuse-rounded to cordate; apex acute with an apiculate tip; calcium oxalate deposits conspicuous in dried material; midrib acute adaxially and obtuse abaxially, greenish; primary

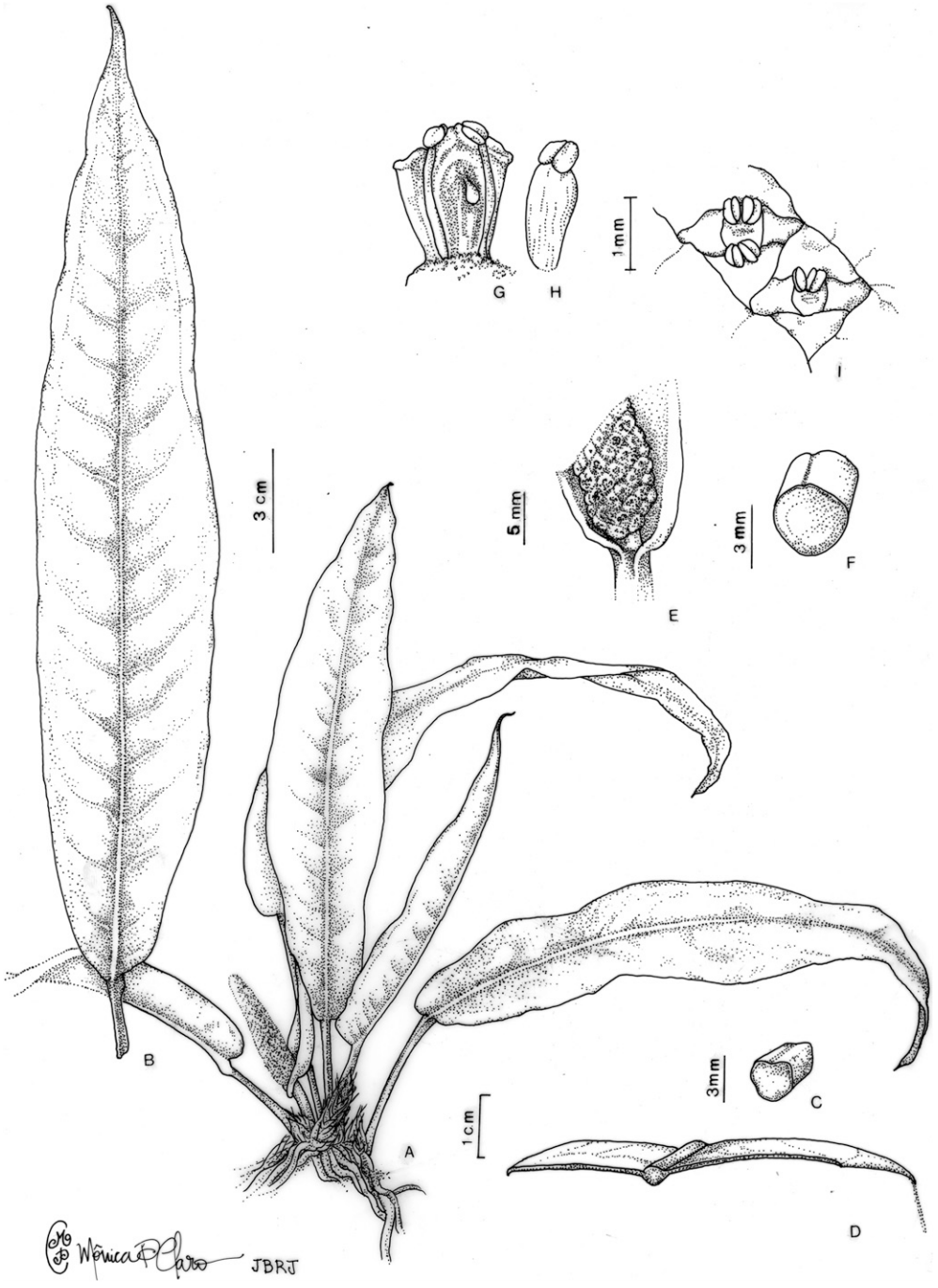

Figure 6. *Anthurium temponiae* Nadruz & Theófilo. —A. Habit. —B. Leaf. —C. Petiole in cross section. —D. Midvein in cross section. —E. Junction between spathe and peduncle. —F. Peduncle in cross section. —G. Flower with detail of position of ovule in ovary. —H. Stamen. —I. Flower at male anthesis. Drawn from the type specimen *J. M. A. Braga 7657* (holotype, RB-429036).

lateral veins obscured on both surfaces, only weakly distinct from higher-order veins when dried, in 13 to 14 pairs; collective vein arising at the base of the blade 0.8–1.1 cm from the margin; marginal vein 1. Inflorescence with peduncle terete, shorter than petiole, greenish, curved in fruit, 0.72–1.2 × 0.34–1.2 cm; spathe 2.8–8.5 × 1.5–3.4 cm (measured at the base at the widest point), length:breadth ratio

1.8–2.5:1, spathe:peduncle ratio 3.8–7:1, elliptic to ovate, greenish, apex rostrate, erect at anthesis, post-anthesis, and in fruit, confluent and decurrent at junction with peduncle, decurrent for 0.3 cm, never surrounding the spadix post-anthesis; spadix 2.9–7.2 × 0.38–0.68 cm, length:breadth ratio 7.6–10.5:1, spadix:peduncle ratio 4–6:1, cylindric, whitish green pre-anthesis, whitish at anthesis, and chestnut brown post-anthesis, sessile; flowers 6 to 7 in primary spiral, 5 in secondary spiral, tepals green with straw-colored apex; androecium with filaments hyaline, oblong, anthers 0.2 × 0.04 cm, chestnut brown at anthesis; gynoecium 0.2 × 0.1 cm in front view, ellipsoid, green with vinaceous dots around the stigmatic area during anthesis, ovary bilocular, with 1 ovule per locule, placentation axial, funicle with trichomes. Fruit a berry, greenish at the apex and whitish toward the base; seed not seen.

Habitat and distribution. *Anthurium temponiae* is a rupicolous, saxicolous, and sciophilous species growing in a submontane semideciduous seasonal forest on the slope of an inselberg. It is known only from the type specimen collected in the Norte Fluminense region.

ICUN Red List category. The locality where *Anthurium temponiae* occurs does not lie within a conservation area and is subject to pressures from the human population in the form of intense urbanization, sugar cane agriculture, and cattle pasture, with a high incidence of fires. Despite these factors, it cannot yet be confirmed that the species is classifiable as within one of the IUCN "threatened with extinction" categories. More information is needed regarding the populations and their geographic distribution, which thus categorizes the species as Data Deficient (DD).

Etymology. This species is named after Dr. Lívia Godinho Temponi, in recognition of her important contributions to the systematics of Brazilian Araceae, especially the genus *Anthurium*.

Discussion. This species belongs to section *Urospadix* and is closest to the group of species recognized by Engler (1905) as subsection *Obscureviridia* because of the obscured primary lateral veins and the similar green color and appearance of the two surfaces of the leaf blade (concolorous). This species is very similar to *Anthurium cleistanthum* and *A. truncatum*. In *A. cleistanthum* the leaf blade is chartaceous, the gynoecium is green with blackish dots around the stigmatic area during anthesis, and the berries are greenish with blackish dots to green-violet at the apex and translucent toward the base. In *A. truncatum* the leaf blade is convex in cross section with a revolute margin, and with calcium oxalate deposits inconspicuous in dried material.

Key to the Species of *Anthurium* subsect. *Obscureviridia* from the Atlantic Forest of Brazil

1. Stem elongated, more than 5 cm long 2
1′. Stem rhizomatous or erect, up to 5 cm long 7
2. Stem internodes completely covered with prophylls and cataphylls 3
2′. Stem internodes visible except at apex, up to 5 cm long 5
3. Collective vein arising at two thirds of the leaf blade length ..... *A. purpureum* N. E. Br.
3′. Collective vein arising from the leaf blade base or at up to one fifth of its length 4
4. Epiphytic or terrestrial plants; leaf blade more than 60 cm long, primary lateral veins in 21 to 23 pairs; pustules absent from leaf and spathe ..... *A. gladiifolium* Schott
4′. Rupicolous plants; leaf blade up to 30 cm long, primary lateral veins in 9 to 16 pairs; circular pustules present on the leaf and spathe surfaces ..... *A. fragae* Nadruz
5. Leaf blade dark green, glandular punctations present on the abaxial surface ..... *A. queirozianum* Nadruz
5′. Leaf blade pale green to dull green, glandular punctations absent 6
6. Petiole up to 25 cm long; leaf blade coriaceous when dried, sinus parabolic or hippocrepiform when present, basal vein 1 or absent; peduncle curved in fruit ..... *A. idimae* Theófilo & Nadruz
6′. Petiole more than 30 cm long; leaf blade membranaceous when dried, sinus triangular when present, basal veins 2; peduncle erect in fruit ..... *A. ameliae* Nadruz & Cath.
7. Glandular punctations present on abaxial surface of leaf blade 8
7′. Glandular punctations absent 10
8. Primary lateral veins in 9 to 12 pairs; geniculum reddish ..... *A. erythrospathaceum* Nadruz & Theófilo
8′. Primary lateral veins in 11 to 25 pairs; geniculum green 9
9. Leaf blade often with irregular white patches when dried; berries vinaceous to greenish vinaceous or vinaceous at apex and yellowish toward base ..... *A. minarum* Sakur. & Mayo
9′. Leaf blade without irregular white patches; berries blackish at apex and translucid yellow toward base ..... *A. binotii* Linden ex Regel
10. Primary lateral veins distinct from higher-order veins when dried 11
10′. Primary lateral veins only weakly distinct from higher-order veins when dried 14
11. Cataphylls and prophylls chestnut brown; leaf blade convex in cross section, glossy above when fresh; peduncle compressed laterally; spathe longer than spadix ..... *A. martinellii* Nadruz & Theófilo

11′. Cataphylls and prophylls greenish; leaf blade concave in cross section, pale green to dull green above when fresh; peduncle terete; spathe shorter than or equal to spadix 12
12. Primary lateral veins fewer than 15; peduncle:petiole ratio 2.8–4.5:1; flowers 4 to 5 per primary spiral; berries reddish . . . . . *A. angustifolium* Theófilo & Sakur.
12′. Primary lateral veins more than 30; peduncle:petiole ratio 0.5–1.2:1; flowers 6 to 14 per primary spiral; berries greenish 13
13. Spathe revolute; seed oblong, convex, yellowish . . . . . *A. lacerdae* Reitz
13′. Spathe navicular; seed rounded to obovate, plano-convex, whitish to blackish white . . . . . *A. coriaceum* G. Don
14. Peduncle longer than petiole 15
14′. Peduncle shorter than petiole 23
15. Leaf blade glossy above when fresh; spathe navicular 16
15′. Leaf blade pale green to dull green above when fresh; spathe expanded 17
16. Pustules absent; peduncle decumbent in fruit; spathe never decurrent at junction with peduncle . . . . . *A. cachoeirense* Theófilo & Sakur.
16′. Pustules present on leaf blade; peduncle, and spathe in dried material; peduncle erect in fruit; spathe decurrent at junction with peduncle . . . . . *A. molle* E. G. Gonç. & J. G. Jardim
17. Prophylls and cataphylls entire and persistent when older; leaf blade glaucous . . . . . *A. gaudichaudianum* Kunth
17′. Prophylls and cataphylls decomposing or caducous when older; leaf blade not glaucous 18
18. Primary lateral veins darker than leaf blade in dried material; peduncle:petiole ratio 1.6–2.6:1 19
18′. Primary lateral veins concolorous in dried material; peduncle:petiole ratio 3.3–9.4:1 20
19. Leaf blade elliptic, base acute; primary lateral veins 11 to 13; spadix cylindrical, brown-violet in dried material . . . . . *A. inconspicuum* N. E. Br.
19′. Leaf blade oblong, oval to lanceolate, base obtuse, truncate to cordate; primary lateral veins 22 to 27; spadix tapered, brownish in dried material . . . . . *A. maricense* Nadruz & Mayo
20. Leaf blade with calcium oxalate deposits conspicuous in dried material 21
20′. Leaf blade with calcium oxalate deposits inconspicuous in dried material 22
21. Leaf blade ferruginous after drying; primary lateral veins 6 to 15; spathe membranaceous; berries black-violet at apex and vinaceous toward base . . . . . *A. raimundii* Mayo, Haigh & Nadruz
21′. Leaf blade greenish gray after drying; primary lateral veins 18 to 20; spathe coriaceous; berries green with blackish dots at apex and gray-greenish to whitish toward base . . . . . *A. viridispathum* E. G. Gonç.
22. Leaf blade elliptic to lanceolate, base acute, with revolute margin; primary lateral veins 31 to 32; spadix tapered; gynoecium vinaceous with blackish dots at apex and translucent toward base . . . *A. mucuri* E. G. Gonç. & L. F. A. Paula
22′. Leaf blade oval, obovate to oblong, base obtuse to rounded, with flat margin; primary lateral veins 12 to 20; spadix cylindrical; gynoecium violet at apex and greenish toward base . . . . . *A. microphyllum* (Hook.) G. Don
23. Leaf blade length:breadth ratio 3.4–17:1; peduncle curved in fruit 24
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25′. Leaf blade membranaceous; gynoecium green with vinaceous dots around the stigmatic area during anthesis; berries greenish at apex and whitish toward the base . . . . . *A. temponiae* Nadruz & Theófilo
26. Leaf blade chartaceous; primary lateral veins 6 to 15; spathe oval, chartaceous; spadix cylindrical . . . . . *A. truncatum* E. G. Gonç.
26′. Leaf blade coriaceous; primary lateral veins 24 to 26; spathe lanceolate, coriaceous; spadix tapered . . . . . *A. ensifolium* Bogner & E. G. Gonç.
27. Leaf blade flat in cross section; calcium oxalate deposits conspicuous in dried material; spathe chartaceous; spadix vinaceous in anthesis, stipe ca. 0.3 cm long; flowers 5 in secondary spiral . . . . . *A. alcatrazense* Nadruz & Cath.
27′. Leaf blade convex in cross section; calcium oxalate deposits inconspicuous in dried material; spathe coriaceous; spadix gray greenish in anthesis, stipe absent; flowers 11 to 13 in secondary spiral . . . . . *A. macropodum* E. G. Gonç.

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