

A Revised Key for the Genus *Asterostigma* C. A. Fisch. & Mey. (Araceae: Tribe *Spathicarpeae*) and a New Species from Southeastern Brazil

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ABSTRACT

An updated key for the genus *Asterostigma* is presented together with some considerations about the geographic distribution of the genus. A new Brazilian species of *Asterostigma* (*A. lombardii*) is also described and illustrated. It occurs in the Brazilian states of Minas Gerais and probably Espírito Santo and has a seasonally induced dormancy period. *Asterostigma lombardii* differs from its closest relative [*A. riedelianum* (Schott) O. Kuntze, from Bahia] mainly because of its boat-shaped synandrodies formed by completely connate staminodes and acutely pointed stigma lobes.

INTRODUCTION

Despite its small size, the neotropical tribe *Spathicarpeae* Schott still remains poorly known. This group is placed in the subfamily Aroideae (Mayo *et al.*, 1997), and comprises eight genera, all terrestrial and tuberous. Members of this tribe occur mainly in colder areas of South America and only a few species in four genera also inhabit hotter regions (*Taccarum* Brongn. ex Schott, *Asterostigma* C. A. Fisch. & Mey., *Gearum* N. E. Br. and *Spathicarpa* Hook.).

The genus *Asterostigma* has nine species occurring in Southern and Southeastern South America (Mayo *et al.*, 1997), and most species are endemic to Brazil. Only two species (*A. pavonii* Schott from Bolivia and Peru and *A. integrifolia* Madison from Peru and Ecuador) occur further

north, growing on eastern Andean slopes. All species are unifoliolate and most (except *A. integrifolia*) have a pinnately lobed leaf blade.

The last monograph of *Asterostigma* was published by Engler (1920), which included a key to the species. Since then, new species have been described (Bogner, 1969, 1997; Madison, 1976), including *A. lombardii* E. G. Gonçalves, published here. A new key, incorporating these novelties is therefore needed.

Asterostigma lombardii E. G. Gonç. **sp. nov.**, *Asterostigmae riedeliano* affine sed lobis stigmatis angustatis, parte feminea laxiflora et staminodiis in synandrodium naviculariformis sanguineum connatis differt. Typus: Brazil. Minas Gerais: Caratinga, Fazenda Montes Claros, mata de encosta. 5 Nov. 1995, *J. A. Lombardi* 658 (Holotypus BHCB)

Herb: terrestrial, geophyte. Stem: hypogaeal, tuberous. Leaves: *cataphylls* 20–29 × 2–2.5 cm, linear-lanceolate, with reddish-brown spots; *petioles* terete, 40–57 × 1–2 cm, purple-mottled; *leaf blade* pinnately compound, overall dimensions 40–47 × 33–40 cm, venation reticulate; *anterior division* 20–26.5 × 33–40 cm, 4–5 lanceolate leaflets, 13.5–18 × 1.8–2.6 cm, apex acuminate, base cuneate at the acropetal side, decurrent at the basipetal side, 6–9 lateral veins per side on each leaflet; *posterior divisions* 18–20 × 30–40 cm, basal lobes pinnately compound, basioscopic portion 2–4 lobed, acrosopic portion 2–3 lobed, lobules 4–20 × 1.0–2.3 cm, apex acuminate, base cuneate in the direction of the

petiole insertion, decurrent in the direction of the apex of the basal lobe. Inflorescence: usually solitary; *peduncle* 27–33 × 0.3–0.5 cm, concolorous with the petiole; *spathe* lanceolate, 8–13.8 × 3–3.5 cm, not conspicuously constricted, withish, purple at the base; *spadix* 6–9 × 0.5–0.7 cm, female portion 2.2–4.5 × 0.5–0.7 cm, adnate to spathe for 1–1.2 cm at the base, male portion 5–9.5 × 0.4–0.5 cm. Flowers: naked, unisexual; *male flowers* connate in a flat synandrium, 2–4 stamens, ca. 1 mm long, oblong in upper-view, ca. 2 mm in the longer diam., 1 mm in the shorter diam., tecae in the margin of the synandrium, opening by an apical pore; *female flowers* surrounded by a whorl of blood-red staminodes, rhombic in upper view, angles of the synandrode bearing curled-down tips, ovary globose, only the lower half hidden within the synandrode, ca. 2 × 2 mm, 3–5 uniovulated locules, ovules anatropous, funicle very short, placentation axilar, style short, ca. 1 × 1 mm, stigma star-shaped, ca. 2 mm diam., with 3–5 triangular acutely pointed lobes. Infructescence: unknown. Figure 1.

REMARKS

Asterostigma lombardii belongs to section *Rhopalostigma* Schott, because of its connate staminodes. It seems to be close to *A. riedelianum*, from the lowland for-

ests of the state of Bahia. but it differs in having narrowed stigmatic lobes (instead of oblong ones), a laxly flowered female zone and naviculariform (boat-shaped) perigone (instead of simply urceolate). Another species that could be compared to *A. lombardii* is *A. cubense* (A. Rich) Kunth ex Bogner, an obscure taxon on which only a single inflorescence is known (Bogner, 1969). *Asterostigma cubense* is distinct from *A. lombardii* because it does not have a naviculariform perigone and the stigma lobes are filiform, rather than triangular-elongated as in *A. lombardii*.

Asterostigma lombardii occurs in the Brazilian states of Minas Gerais and probably Espírito Santo. Interestingly, the state of Minas Gerais includes half of the known species (5 spp.) of *Asterostigma* and can be considered a possible center of diversity of the genus. However, comprehensive surveys of most Araceae are still lacking, specially for tuberous taxa. Further research is needed to establish accurately the ranges of *Asterostigma*.

ETYMOLOGY

The epithet is given in honor of Júlio Lombardi, curator of the herbarium BHCB, who collected the type material and cultivated the plant at the University of Minas Gerais, making possible the complete observation of the floral structures.

KEY TO THE GENUS ASTEROSTIGMA

- 1. Leaf pinnately compound 2
- 1. Leaf entire, cordate *A. integrifolia* Madison (Ecuador) 2
- 2. Basal divisions of the leaf pinnately compound in flowering individuals 3
- 2. Basal divisions of the leaf entire *A. pavonii* Schott (Peru) 3
- 3. Gynoecium surrounded by a whorl of 3–5 free staminodes 4
- 3. Gynoecium surrounded by cup-like synandrode, representing a whorl of connate staminodes 6
- 4. Female zone of the spadix partially adnate to the spathe, for at least half its length 5
- 4. Female portion of the spadix completely free *A. tweedianum* Schott (Southern Brazil) 4
- 5. Spathe oblong-elliptic; stigma almost sessile; male zone of the spadix with synandria laxly arranged *A. luschnathianum* Schott (Southeastern Brazil) 5
- 5. Spathe lanceolate or oblong-lanceolate; stigma with a discernible style; male zone of the spadix with synandria densely arranged *A. lividum* (Lodd.) Engl. (Southern and Southeastern Brazil) 6
- 6. Stigma lobes acutely pointed, simple or with a bifid tip 7
- 6. Stigma lobes oblong-clavate *A. riedelianum* (Schott) O. Kuntze (Brazilian states of Bahia and Minas Gerais) 7
- 7. Stigma lobes usually bifid; synandrode hiding most of the ovary *A. cryptostylum* Bogner (Central Brazil) 7

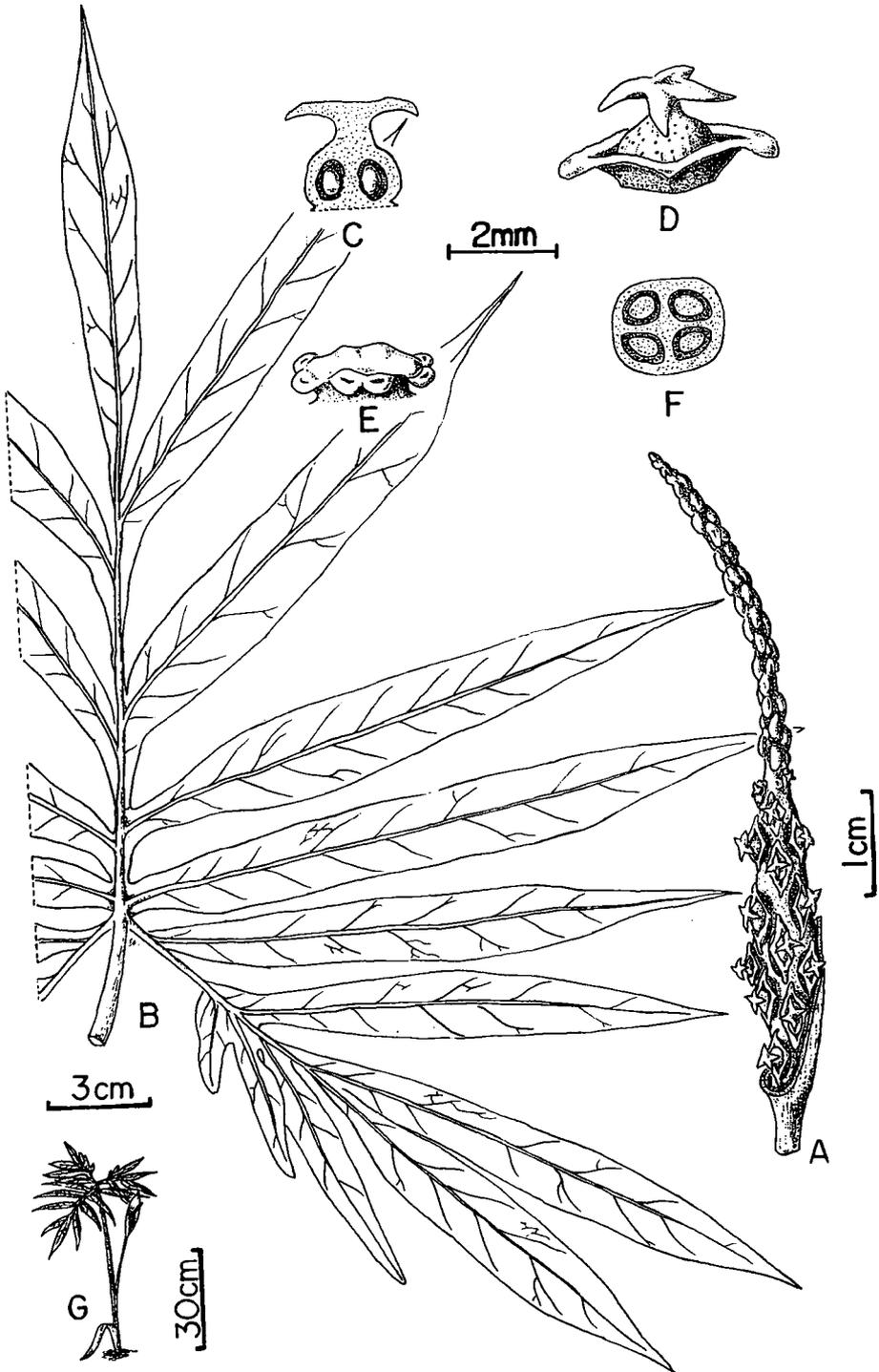


Fig. 1. *Asterostigma lombardii* E. G. Gonçalves. A, inflorescence; B, leaf; C, gynoecium, longitudinal section; D, female flower, side view; E, synandrium, side view; F, ovary, cross section; G, habit. Drawn from *Lombardi* 658 by the author.

7. Stigma lobes usually simple, not bifid; synandrode smaller, revealing the upper half of the ovary 8
8. Stigma lobes triangular-elongated; synandrode strongly boat shaped
 *A. lombardii* E. G. Gonç. (Brazilian states of Minas Gerais and probably Espírito Santo)
9. Stigma lobes filiform, synandrode urceolate
A. cubense (A. Rich.) Kunth ex Bogner (occurrence unknown, possibly not a Cuban species)

ACKNOWLEDGMENTS

I would like to thank Élder Paiva for describing the colors of fresh material, and for preparing and sending the pickled inflorescence of *A. lombardii*. I am grateful to Simon Mayo for his useful suggestions on the manuscript. I am also grateful to Josef Bogner for sending some detailed photographs and pickled inflorescences of *A. pavonii*, to help in the preparation of the key.

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