

# *Oxypetalum gyrophyllum* and *O. oblanceolatum*, New Species of Asclepiadoideae (Apocynaceae) from Brazil, and a Key for the *O. insigne* Group

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**ABSTRACT.** *Oxypetalum gyrophyllum* Farinaccio & Mello-Silva and *O. oblanceolatum* Farinaccio & Mello-Silva, two new species of Asclepiadoideae (Apocynaceae) from Brazil, are described and illustrated. Both species may be included in the *O. insigne* (Decaisne) Malme group. *Oxypetalum gyrophyllum* is closely related to *O. glabrum* (Decaisne) Malme, differing mainly by bigger and more circular leaves, a smaller corpusculum, and smaller teeth, which are curved inward and included versus curved outward and free. *Oxypetalum oblanceolatum* is immediately distinguished from all species of this group by oblanceolate leaves, an uncommon character state in the genus. A key for the species of the *Oxypetalum insigne* group is provided.

**RESUMO.** *Oxypetalum gyrophyllum* Farinaccio & Mello-Silva e *O. oblanceolatum* Farinaccio & Mello-Silva, duas novas espécies de Asclepiadoideae (Apocynaceae), do Brasil são descritas e ilustradas. Ambas podem ser incluídas no grupo de *Oxypetalum insigne* (Decaisne) Malme. *Oxypetalum gyrophyllum* é semelhante a *O. glabrum* (Decaisne) Malme, mas difere pelas folhas maiores e circulares, pelo retináculo menor, e pelos dentes menores, inclusos e incurvados. *Oxypetalum oblanceolatum* é distinto das demais espécies do grupo pelas folhas oblanceoladas, um estado de caráter pouco comum no gênero. Uma chave para as espécies do grupo de *Oxypetalum insigne* é também apresentada.

**Key words:** Apocynaceae, Asclepiadoideae, Brazil, *Oxypetalum*, *Oxypetalum insigne* group, taxonomy.

*Oxypetalum* R. Brown (Asclepiadoideae, Apocynaceae) is a Neotropical genus comprising ca. 100 (Cáceres Moral, 1993) to 150 (Hoehne, 1916) species, or possibly up to 180 (Rapini et al., 2001) species. We recognize about 130 species, as did Rapini et al. (2003), distributed mainly in Brazil and Argentina (Cáceres Moral, 1993). Brazil is the center of diversity of the genus (Morillo, 1997), with most of the species

being found in the southeast and south. These species occur mainly in savannahs, grasslands, and forest edges (Occhioni, 1956; Fontella-Pereira et al., 1984, 1985, 1989, 1995; Fontella-Pereira & Valente, 1993; Goyder, 1995; Rapini et al., 2001; Farinaccio & Mello-Silva, 2004). *Oxypetalum* is recognized by a combination of certain character states not always present in all species. These include the showy flowers, the rostrated, stigma-like gynostegium, and the horizontal caudicles of the pollinaria, usually with lateral teeth.

Several authors have recognized the *Oxypetalum insigne* (Decaisne) Malme group as an assemblage of species that are more or less well-delimited morphologically (e.g., Decaisne (1838) as *Calostigma*; Malme, 1927; Occhione, 1952; Fontella-Pereira et al., 1984; Rapini et al., 2001; Farinaccio, 2002; Farinaccio & Mello-Silva, 2004). This group includes twining species occurring only in Brazil with a laminar corpusculum longer than the pollinia. *Oxypetalum gyrophyllum* and *O. oblanceolatum* can be included in the *O. insigne* group. Other members of this group are *O. glabrum* (Decaisne) Malme and the recently described *Oxypetalum leonii* Fontella (Fontella-Pereira, 1996), *Oxypetalum rusticum* Rapini (Rapini, 2002), and *O. helios* Farinaccio (Farinaccio, 2002).

## KEY FOR THE SPECIES OF THE *Oxypetalum insigne* GROUP IN BRAZIL

- 1a. Stems velutinous-villous or woolly; leaves with dense indument on both sides.
  - 2a. Stems velutinous-villous; cymes corymbiform; corpusculum up to 2.1 mm long . . . . . *O. insigne*
  - 2b. Stems woolly; cymes racemiform; corpusculum more than 2.4 mm long . . . . . *O. rusticum*
- 1b. Stems pubescent to glabrous; leaves nearly glabrous to glabrous adaxially.
  - 3a. Leaves oblanceolate, abaxial surface tomentose . . . . . *O. oblanceolatum*
  - 3b. Leaves lanceolate to ovate-lanceolate, ovate, elliptic, or oblong, abaxial surface glabrate.
    - 4a. Style-head apex bifid with stems filiform.
      - 5a. Apex of leaves acuminate; peduncle 7–13 mm; pedicels 8–12 mm; seg-



- ment of the corona entire with a central tooth-like appendage  
 ..... *O. leonii*
- 5b. Apex of leaves acute to obtuse, mucronate to apiculate; peduncle 1.6–2.2 mm; pedicels 10–18 mm; segment of the corona 3-lobed, lacking an adaxial appendage  
 ..... *O. helios*
- 4b. Style-head apex cup-shaped or bifid with broad and flat stems or filiform stems.
- 6a. Corolla lobes spatulate or perfectly oblong, apex rounded; corona lobes widely obovate, apex rounded; style-head apex bifid with filiform stems; pollinia 0.17–0.27 mm long  
 ..... *O. glaziovianum* Loesener
- 6b. Corolla lobes lanceolate or linear-oblong, apex acute; corona lobes oblong, apex truncate; style-head apex cup-shaped or bifid with broad and flat stems; pollinia ca. 0.4 mm long.
- 7a. Leaves 6–7.5 × 3.5–4 cm, elliptic to widely elliptic, chartaceous; adaxial surface of corolla lobes sericeous; corpusculum ca. 0.75 mm long, teeth of caudicle ca. 0.12 mm long, curved inward and included  
 ..... *O. gyrophyllum*
- 7b. Leaves 2.5–7 × 1–2 cm, ovate, oblong, or elliptic, coriaceous; adaxial surface of corolla lobes glabrous; corpusculum 1.2–1.7 mm long, teeth of caudicle 0.25–1 mm long, curved outward and free ..... *O. glabrum*

**Oxypetalum gyrophyllum** Farinaccio & Mello-Silva, sp. nov. TYPE: Brazil, Rio de Janeiro/São Paulo: Parati/Ubatuba, divisa dos estados, trilha para o Pico do Cuscuzeiro, 15 Dec. 2001 (fl), V. A. O. Dittrich, A. Salino, P. O. Moraes & A. C. Meinberg 904 (holotype, SPF; isotype, MO). Figure 1A–D.

Habitu volubili atque corpusculo laminari pollinio longiore ad gregem *O. insignem* pertinet; affinis est *O. glabro* a qua foliis majoribus circularibusque, retinaculis minoribus atque dentibus caudicularum minoribus inclusis incurvatisque differt.

Vines, stems puberulent to glabrate. Leaves opposite, patent; petiole 6–10 mm long, smooth, puberulent; blades 6–7.5 × 3.5–4 cm, elliptic to widely elliptic, discolored, glabrate, chartaceous, with brochidodromous venation, apex mucronate to cuspidate, base rounded, 2 to 3 colleters at base of adaxial blade. Partial inflorescence extra-axillary, alternate, racemiform, 3- to 5-flowered, erect; peduncle 0.6–1 cm long, puberulent; pedicels 1–1.7 cm long, puberulent. Calyx divided almost to base, lobes 4 × 0.15 mm, linear, apex acute, pubescent, 2 to 3

colleters below sinus; corolla greenish cream, lilac in the proximal region, rotate, tube 1.8 mm long, glabrate, lobes 8.5 × 2 mm, lanceolate, patent, twisted, abaxial surface glabrate to minutely puberulent, adaxial surface sericeous, margins hyaline, apex acute, asymmetrical; corona cream, lobes 2 × 1.2 mm, oblong, adaxial surface with carunculate excrescences and a central tooth-like appendage, apex truncate, involute; gynostegium purple, 0.13 mm long, sessile; style-head white, 3 mm long, terete, bifid from the middle, divergent; anthers 0.4–0.53 × 0.6–0.66 mm, slightly quadrangular, terminal appendage 0.82–1.3 × 0.4–0.6 mm, oblong, apex acute, dentate, wings longer than the dorsum; corpusculum 0.75 × 0.15 mm, oblong, laminar, apex truncate to rounded, caudicles 0.12 mm long, flattened, broad, translucent, with horny teeth 0.12 mm long, curved inward and included, pollinia 0.4 × 0.12 mm, oblong. Fruits and seeds unknown.

*Oxypetalum gyrophyllum* is closely related to *O. glabrum*. Both species are distinguished within the *O. insignem* group by being glabrous or nearly glabrous. In comparison to *O. glabrum*, the new species has larger, more circular leaves (6–7.5 × 3.5–4 vs. 2.5–7 × 1–2 cm), with a rounded base (vs. cordate to truncate, often cordate in *O. glabrum* and in the majority of the species of *Oxypetalum*), hence the specific epithet. *Oxypetalum gyrophyllum* is mainly distinguished by its smaller corpusculum (0.75 vs. 1.2–1.7 mm long) and its teeth (0.12 vs. 0.25–1 mm long), which are curved inward and included (vs. curved outward and free). *Oxypetalum gyrophyllum* is further distinguished by the sericeous adaxial surface of the corolla lobes, which are glabrate in *O. glabrum*.

*Distribution, habitat, and phenology.* *Oxypetalum gyrophyllum* occurs in the Atlantic rainforest, at an elevation of 900 meters above sea level. It was collected in flower in December.

**Oxypetalum oblanceolatum** Farinaccio & Mello-Silva, sp. nov. TYPE: Brazil, Paraná: Cândido de Abreu, Três Bicos, 9 July 1970 (fl), G. Hatschbach 24431 (holotype, SPF; isotype, MBM). Figure 1E–H.

Indumento atque apice gynostegii filiformi affinis est *O. helios* et *O. leonii*, sed ab omnibus speciebus gregi *O. insignem* foliis oblanceolatis optime distincta.

Vines, stems pubescent. Leaves opposite, patent; petiole 0.4–0.7 cm long, smooth, tomentose; blades 3–5 × 0.6–1.1 cm, oblanceolate, discolored, adaxial surface puberulous to pubescent, abaxial surface tomentose, chartaceous, with brochidodromous venation, apex rounded, cirrose, base truncate with 3 to 4



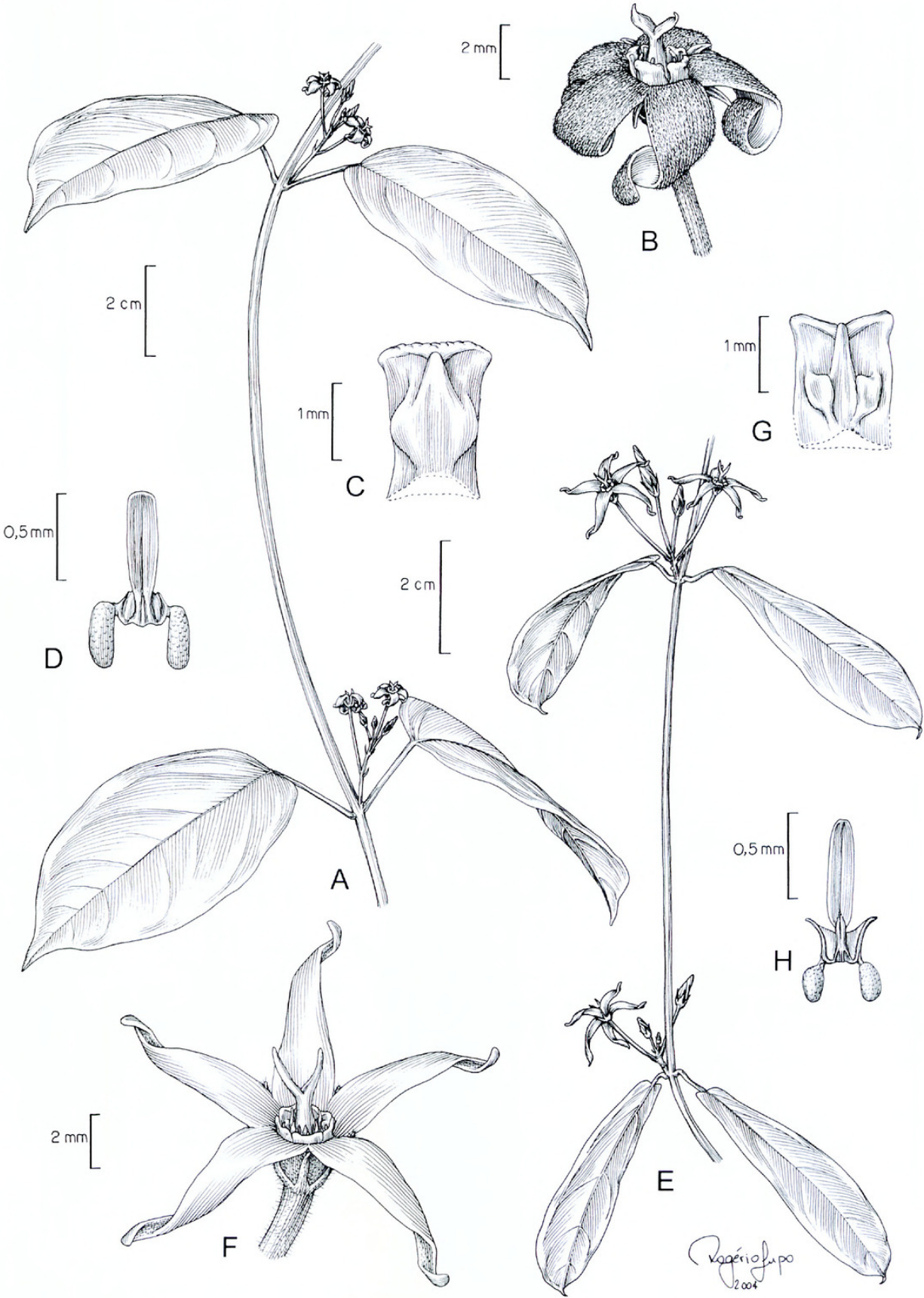


Figure 1. *Oxypetalum gyrophyllum* Farinaccio & Mello-Silva. —A. Flowering branch. —B. Flower. —C. Adaxial surface of corona lobe. —D. Pollinarium. *Oxypetalum oblanceolatum* Farinaccio & Mello-Silva. —E. Flowering branch. —F. Flower. —G. Adaxial surface of corona lobe. —H. Pollinarium. (A–D from V. A. O. Dittrich et al. 904, SPF; E–H from G. Hatschbach 24431, SPF.)



colleters at base of adaxial side. Partial inflorescence extra-axillary, alternate, racemiform, 3- to 4-flowered, erect; peduncle 1–1.4 mm long, pubescent; pedicels 1.1–1.4 cm long, tomentose; calyx greenish cream, divided almost to base, lobes  $3.3\text{--}4 \times 0.4$  mm, linear-lanceolate, apex acute, pubescent, 1 colleter below sinus; corolla greenish cream, campanulate, tube 3.5–4 mm long, puberulent, lobes  $9.5 \times 2\text{--}2.2$  mm, ovate-lanceolate, patent, twisted at the distal region, adaxial surface glabrous, abaxial surface puberulent, margins hyaline, apex acute; corona cream, lobes  $1.6 \times 1.15$  mm, oblong, adaxial surface with carunculate excrescences and a central tooth-like appendage, apex emarginate, involute, gynostegium purple, 1.4 mm long, sessile; style-head white, 3.8 mm long, terete, bifid from proximal third, stems flat, divergent; anthers  $1 \times 0.5$  mm, cubical, terminal appendage  $0.7 \times 0.5$  mm, oblong, apex rounded, wings longer than the dorsum; corpusculum  $0.7 \times 0.1$  mm, oblong, laminar, apex truncate, caudicles 0.08 mm long, flattened, broad, translucent, with horny teeth 0.24 mm long, curved outward, free, pollinia  $0.26 \times 0.11$  mm, ellipsoid. Fruits and seeds unknown.

*Oxypetalum oblanceolatum* is immediately distinguished from all other species of the *O. insigne* group by the oblanceolate leaves, a rare character state within the genus. It is related to both *O. helios* and *O. leonii* and shares with these species the vestiture, often sparsely pubescent to glabrous, and the filiform style-head of the gynostegium, which is cup-shaped in most of the plants of the group. By the size and color of the flowers, *O. oblanceolatum* is more similar to *O. helios*. On the other hand, the corona of the new species is similar to that of *O. leonii*. The corona of both species show entire segments with a central tooth-like appendage, versus the 3-lobed segment of the corona and the lack of an adaxial appendage, which is an exclusive character state of *O. helios* in the *O. insigne* group.

**Distribution, habitat, and phenology.** *Oxypetalum oblanceolatum* occurs in disturbed *Araucaria angustifolia* (Bertoloni) Kuntze forests, which are known as capoeiras. A recent effort to re-collect *O. oblanceolatum* has failed because these forests have been replaced by *Glycine max* (L.) Merrill plantations. Thus, the new species could be considered as vulnerable according to IUCN (2001) Red List criteria. *Oxypetalum oblanceolatum* has been collected in flower in July.

**Dedication.** We dedicate this work to Gert G. Hatschbach, who first collected *Oxypetalum oblanceolatum* and many other plants, decidedly contribut-

ing to the increase of the collections and to the knowledge of the Brazilian flora.

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