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A New Species of *Zornia* (Leguminosae, Papilionoideae) from Northeastern Brazil

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ABSTRACT. *Zornia grandiflora* Fort.-Perez & A. M. G. Azevedo (Leguminosae, Papilionoideae), a new species from Bahia and Pernambuco states in northeastern Brazil, is described and illustrated. The new species is assigned to section *Anisophylla* Mohlenbr. of subgenus *Zornia* J. F. Gmel. *Zornia grandiflora* is similar to *Z. sericea* Moric., sharing erect stems and ovate to elliptic bracteoles. It can be distinguished from *Z. sericea* and from other species within *Zornia* sect. *Anisophylla* by the large standard (13–17 mm long).

RESUMO. *Zornia grandiflora* Fort.-Perez & A. M. G. Azevedo (Leguminosae, Papilionoideae), uma nova espécie do nordeste do Brasil (estados da Bahia e Pernambuco), é descrita e ilustrada. Esta nova espécie pertence à seção *Anisophylla* Mohlenbr. do subgênero *Zornia* J. F. Gmel. *Zornia grandiflora* possui afinidades com *Z. sericea* Moric., compartilhando os ramos eretos e as bractéolas ovais a elípticas; e pode ser separada desta e das outras espécies de *Zornia* sect. *Anisophylla* pelo expressivo tamanho do estandarte (13–17 mm comprimento).

Key words: Bahia, Brazil, IUCN Red List, Leguminosae, Pernambuco, *Zornia* sect. *Anisophylla*.

The genus *Zornia* J. F. Gmel. (Leguminosae, Papilionoideae) comprises about 75 to 80 species from the tropics and subtropics (Mohlenbrock, 1961; Rudd, 1981; Klitgaard & Lavin, 2005), and ca. 36 species are estimated from Brazil. According to a molecular study carried out by Lavin et al. (2001), the genus has been included in the *Adesmia* DC. clade of tribe Dalbergieae s.l.

Species of *Zornia* share several morphological characters: each flower is surrounded by a pair of peltate bracteoles similar to the stipules, the leaves are 2- or 4-foliolate, and the stems frequently are diffusely branched and woody at the base. The size and form of the bracteoles (bracts) are important characters for the delimitation of the taxa, mainly in section *Anisophylla* Mohlenbr. of subgenus *Zornia*, according to the classification proposed by Mohlen-

brock (1961). The concept of the bracteoles used in this paper is in accordance with that of Tucker (1987), in which they are referred to as homologous to the paired prophylls of each vegetative axillary bud. According to Tucker (1987), the prophylls are opposite and paired in most dicotyledons and are the first products of the axillary vegetative apex. In *Zornia*, as well as other species of dalbergioid genera, each flower is subtended by a pair of bracteoles, with the flowers of *Zornia* sessile instead of pedicellate as in *Ormocarpum* P. Beauv. and *Discolobium* Benth. (Sciamarelli, 1994).

During surveys of herbarium collections for a revision of *Zornia* in Brazil, a new species was found, which is described and illustrated from herbarium specimens located at HUEFS, K, and PEUFR. Another Brazilian species of *Zornia* has recently been described from Minas Gerais State as *Z. subsessilis* Fort.-Perez & A. M. G. Azevedo (Fortuna-Perez & Tozzi, 2008). In contrast, the new taxon is known to occur only in northeastern Brazil.

Zornia grandiflora Fort.-Perez & A. M. G. Azevedo, sp. nov. TYPE: Brazil. Pernambuco: Buíque, estrada para Catimbau, 10 July 1997, A. M. Frazão et al. s.n. (holotype, HUEFS 38032; isotype, PEUFR 6809). Figure 1.

Haec species quoad caules erectos etiam bracteolas ovatas usque ellipticas *Zorniae sericeae* Moric. similis, sed ab ea bracteolis glabris, vexillo magno 13–17 mm longo atque lomento 5- vel 6-articulato articulis ca. 2 mm longis differt.

Subshrub ca. 0.7 m tall, stems erect, villous, punctate. Stipules 5–7 × 2–3 mm, lanceolate, peltate, punctate, glabrous; leaves with 2 leaflets, punctate; lower leaflets 15–40 × 5–25 mm, ovate to lanceolate, apex acute, base obtusely asymmetrical, margin ciliate, abaxial surface sericeous, adaxial surface sparsely sericeous; upper leaflets 10–40 × 5–15 mm, lanceolate, apex acute, mucronate, base obtusely asymmetrical, margin ciliate, abaxial surface sericeous, adaxial surface sparsely sericeous. Bracteoles to 7–16 × 4–7 mm, ovate to elliptic, glabrous to

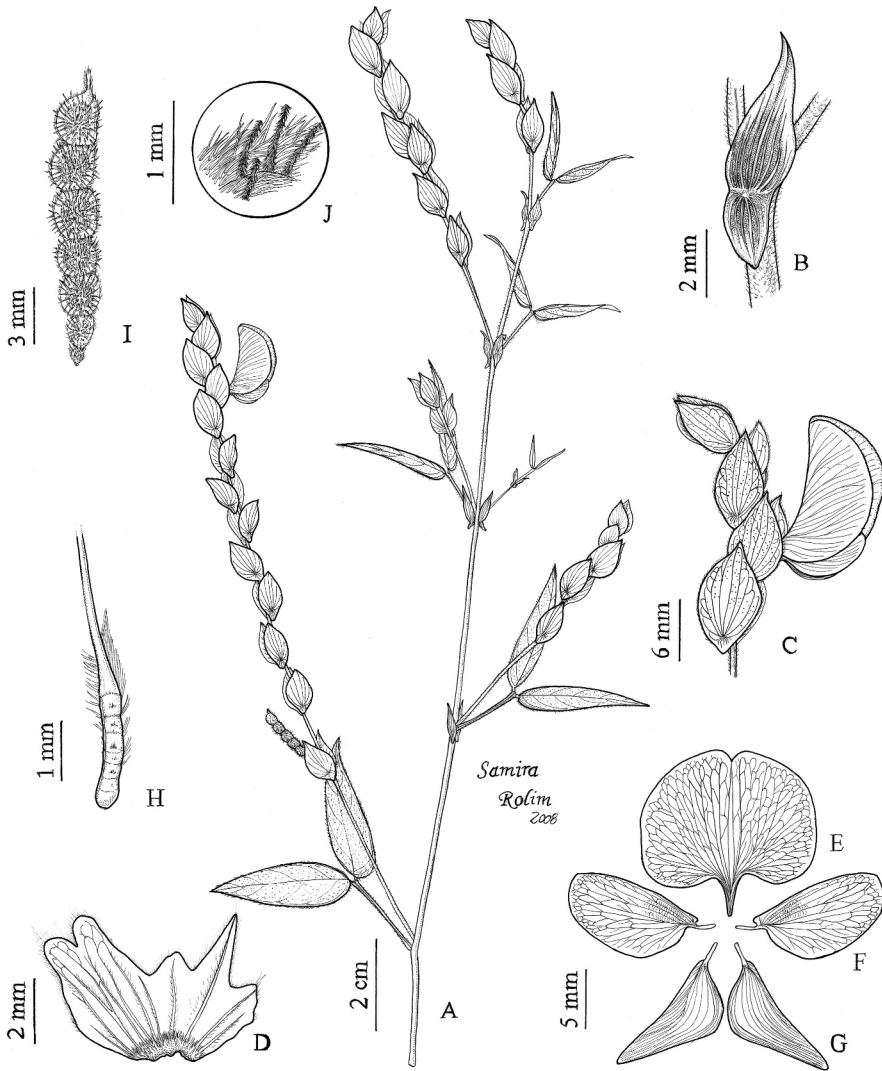


Figure 1. *Zornia grandiflora* Fort.-Perez & A. M. G. Azevedo. —A. Flowering and fruiting branch. —B. Detail of the stipule. —C. Partial inflorescence with bracteoles and flowers. —D. Calyx. —E. Standard. —F. Wings. —G. Keel petals. —H. Pistil. —I. Fruit (loment). —J. Detail of loment surface with bristles. A–H based on the holotype Frazão *et al.* s.n. (HUEFS); I, J based on the paratype Andrade *et al.* 61 (PEUFR).

glabrescent, margin ciliate, punctate, 7- to 9-nerved; auricle ca. 5 mm, punctate; inflorescence spiciform, terminal or axillary, 3–19 cm, villous. Calyx campanulate, 5-lobed, glabrous to pubescent, margin ciliate, 7- to 10-nerved, standard 13–17 × 13–16 mm, orbicular, apex retuse, base subauriculate, glabrous; claw 2–4 mm; wing petals 7–11 × ca. 5 mm, ovate, apex rounded, glabrous; keel petals 7–12 × 4–5 mm, as long as the wing petals, falcate, apex acute, glabrous; stamens 10–13 mm, dimorphic; ovary pilose; style curved, stigma minute. Fruit a loment with 5 or 6 articulations; each article ca. 2 × 1.5–1.8 mm,

sericeous, reticulate, bristly, bristles to 0.5–1 mm; seeds ca. 2 × 1.5 mm, yellowish green, smooth.

Distribution and habitat. *Zornia grandiflora* occurs in Bahia (Gentio do Ouro municipality) and Pernambuco (Buíque municipality) states, Brazil, growing in caatinga vegetation on sandy soil.

IUCN Red List category. According to IUCN Red List criteria (IUCN, 2001), the conservation status of *Zornia grandiflora* must be considered Data Deficient (DD) because it is known only from a few collections.

Table 1. Morphological comparison of *Zornia grandiflora* and related species.

	<i>Z.</i> <i>grandiflora</i>	<i>Z.</i> <i>sericea</i>	<i>Z.</i> <i>reticulata</i>
Length of standard (mm)	13–17	7–10	5–11
Length of bracteoles (mm)	7–16	8–15	11–15
Form of bracteoles	ovate to elliptic	ovate	lanceolate
Length of auricle at bracteole (mm)	ca. 5	0–3	6–10
No. of articles per loment	5 to 6	3 to 4	5 to 10
Length of articles (mm)	ca. 2	3–4	1.5–2.5

Phenology. The known collections (in flower and fruit) of the new species were collected from May to July.

Etymology. The epithet *grandiflora* refers to the large standard of the flower, which surpasses those of any other species of *Zornia* sect. *Anisophylla*.

Discussion. *Zornia grandiflora* belongs to section *Anisophylla* of subgenus *Zornia*, on the basis of the leaflets of the lower leaves that are always different in form from those of the upper leaflets in any one plant. However, the new species is distinguished from all other species of *Zornia* sect. *Anisophylla* by the large standard of the flower, ranging from 13–17 mm long. The range of standard lengths in other species of *Zornia* sect. *Anisophylla* does not exceed 13 mm long. The new species is morphologically similar to *Z. sericea* Moric., sharing the erect stems and ovate to elliptic bracteoles. *Zornia sericea* has, however, sericeous bracteoles, with only a minute auricle at the bracteole base, a floral standard only to 10 mm long, the articles of loment are longer (to at least 3 mm), and the fruit has fewer articulations (only four). *Zornia sericea* also occurs in caatinga vegetation from northeastern Brazil, growing mainly on sandy grounds. It is also cited for Argentina, Bolivia, and Venezuela (Mohlenbrock, 1961). *Zornia reticulata* Sm. also resembles *Z. grandiflora*; however, it has a floral standard up to 11 mm long and lanceolate bracteoles. *Zornia reticulata* is widely distributed in South America, growing mainly in disturbed environments. Morphological characters for the comparison of *Z. grandiflora* with related species are shown in Table 1.

Paratypes. BRAZIL. **Bahia:** Gentio do Ouro, R. M. Harley 18978 (K). **Pernambuco:** Buíque, Fazenda Laranjeiras, K. Andrade, E. Inácio & A. Laurênio 61 (PEUFR), A. P. S. Gomes, A. Laurênio, K. Andrade & M. J. N. Rodal 20 (PEUFR); Serra do Catimbau, A. M. Miranda, L. P. Félix & S. C. Rodrigues 1732 (HUEFS), Z. Travassos 228 (K), Z. Travassos 212 (K), E. Menezes 27 (K), M. B. Costa e Silva 252 (K).

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