
Validating an Endemic Melastomataceae from Goiás, Central Brazil: *Lavoisiera fragilis* Cogniaux ex Munhoz & Proença

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ABSTRACT. This paper validates a *nomem nudum* for an endemic *Lavoisiera* from Cristalina, Goiás, in central Brazil. It was first collected by Glaziou in 1895 and then sent to Cogniaux, who named it but never formally described it. The Cogniaux name is maintained since it is cited in Glaziou's published list of collections and on herbarium specimens. *Lavoisiera fragilis* is a small white-flowered tree that is protected by the Linda Serra dos Topázios Private Reserve.

RESUMO. Este trabalho torna válido um *nomen nudum* para uma *Lavoisiera* endêmica de Cristalina, Goiás no Brasil Central. A espécie foi coletada pela primeira vez por Glaziou em 1895 e enviada para Cogniaux, que a nomeou mas nunca a descreveu formalmente. O nome dado por Cogniaux é mantido por ter sido citado na lista publicada de coletas de Glaziou e por aparecer nas suas etiquetas de material herborizado. *Lavoisiera fragilis* é uma pequena árvore de flores alvas, protegida pela Reserva Particular de Patrimônio Natural (RPPN) Linda Serra dos Topázios.

The area around the city of Cristalina, Goiás, in central Brazil was first botanized by Joseph Emmanuel Pohl in 1818; at that time, it was already known as Serra dos Cristais (Urban, 1906). Like other isolated highland areas in the Cerrados domain, it appears to be an important center of endemism. Endemic taxa known to occur in the Serra dos Cristais belong to the Bromeliaceae, Burmanniaceae, Compositae, Leguminosae, Malpighiaceae, and Myrtaceae. The region is mined for rock crystal and topaz and is a minor tourist center. In 1994, a government-recognized private reserve of ca. 500 hectares, the Reserva Particular de Patrimônio Natural Linda Serra dos Topázios, was established there. The vegetation of the reserve is composed of wet grassy fields, wet fields with buriti palms (*Mauritia vinifera* Martius), aquatic plants, sparse

cerrado, typical cerrado, tall mesophytic savanna woodland on a slope, campo rupestre, and riverine vegetation that is not dense enough to form a gallery forest.

After collecting the present species several times in flower and in fruit, we failed to identify it by comparison with identified specimens of *Lavoisiera* in the UB herbarium at the University of Brasília, many of which were determined by John Wurdack. Two specimens from Cristalina that matched our material were found, however. This resulted in surveying taxonomic literature on *Lavoisiera* through *Index Kewensis for Windows v. 2.0* (Royal Botanic Gardens Kew, 1997), and studying published species descriptions for *Lavoisiera* (De Candolle, 1828; Triana, 1871; Cogniaux, 1883; Taubert & Ule, 1896; Hoehne, 1922; Mello-Barreto, 1935, 1936, 1952; Markgraf, 1940; Wurdack, 1974, 1981, 1988, 1995). Since we failed to match our specimens with any published description, we then requested Elizabeth Woodgyer, a Melastomataceae specialist from the Royal Botanic Gardens at Kew, to compare our illustration to the Glaziou specimens at K collected in Goiás. She reported a positive match with *Glaziou 21312*, collected in Cristalina in 1895, and with a modern specimen also collected in Cristalina (*Pirani et al. 1552*), and sent cybichrome photographs of both specimens to us at UB. We later discovered a duplicate of the *Glaziou 21312* specimen at the Museu Nacional Herbarium in Rio de Janeiro (R). We are confident that our specimens are conspecific with the Glaziou and Pirani collections, and hereby formally describe the species.

Lavoisiera fragilis Cogniaux ex Munhoz & Proença, sp. nov. TYPE: Brazil. Goiás [Goyaz]: Almocafre, Serra dos Cristais [Crystaes], 16°45'S, 47°37'W, 17 Sep. 1895, *Glaziou 21312* (holotype, R; isotype, K not seen, UB photograph of isotype at K). Figure 1.

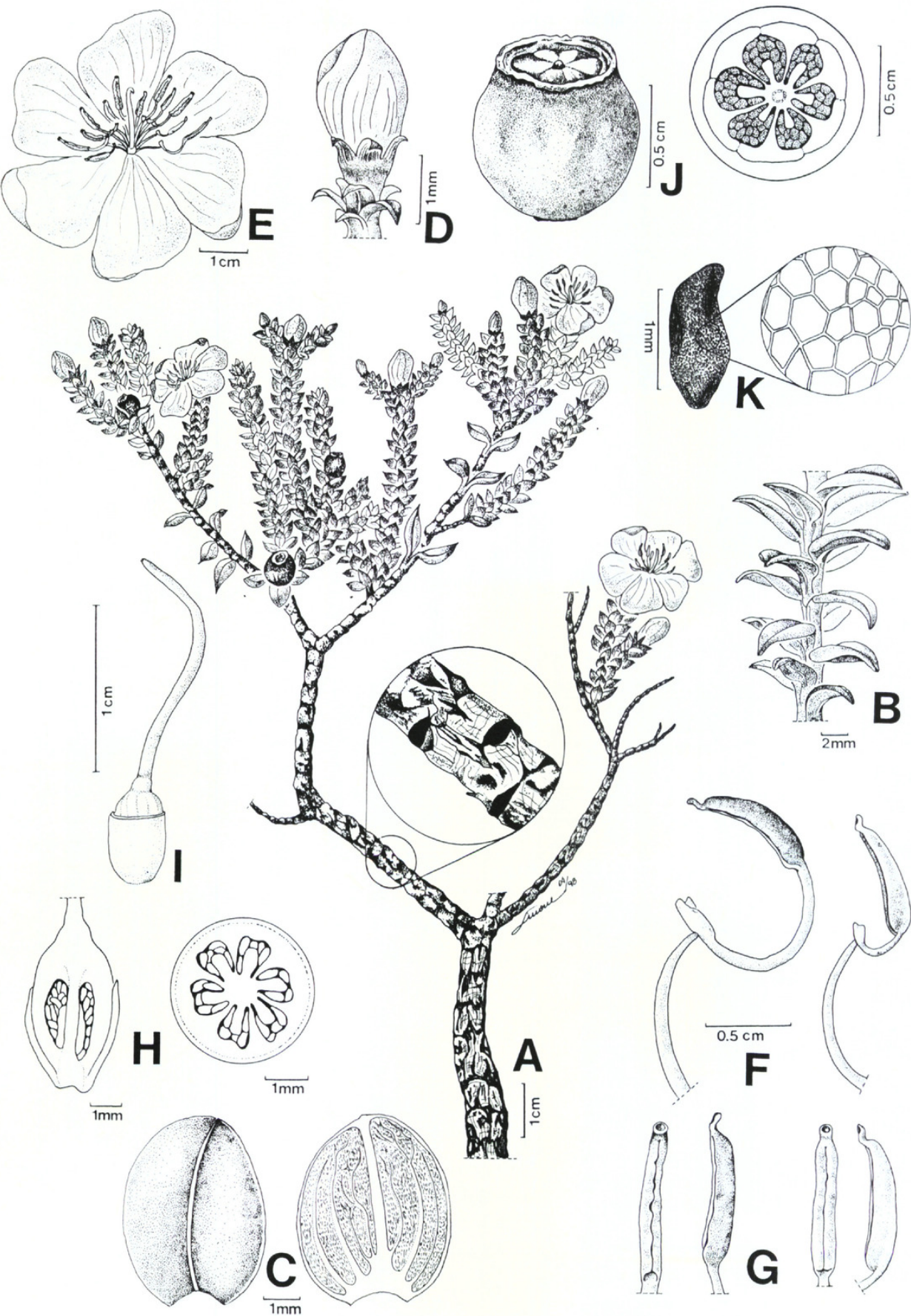


Figure 1. *Lavoisiera fragilis* Cogniaux ex Munhoz & Proença. —A. Habit with branchlet detail. —B. Leaf disposition on young branchlet. —C. Leaves, above (left) and below (right). —D. Flower bud. —E. Open flower. —F. Stamens, larger (left) and smaller (right). —G. Larger stamen anthers (left) in ventral and lateral view, smaller stamen anthers (right) in ventral and lateral view. —H. Ovary, longitudinal section (left) and transverse section (right). —I. Pistil. —J. Mature fruit, whole (left) and tranverse section (right). —K. Seed with testa detail. (A–K from Oliveira et al. 285, paratype.)

[*Lavoisiera fragilis* Cogniaux, nomen nudum, Glaziou Liste Collect. Bot., Mem. Soc. Bot. France 3: 256. 1907 (1903).]

Arbuscula 1.5–2.5 m alta; ramuli glabri. Folia sessilia imbricata; lamina 9–20 × 5–10 mm, cordata vel ovato-elliptica apice acuta base angustato semiamplexicaulibus, coriacea, supra glabra, subtus sparse sessilibus glanduliferis pilis, 3-nervata nervulis supra invis. Flores (5)6-meri ad ramorum apices solitarii. Hypanthium (ad torum) 6–9 mm longum, campanulatum; calycis lobis 5–7 mm longi, triangulares, in fructu non persistentes. Stamina dimorpha, glabra. Stamina maiora antheris vinaceis, 6–7 mm longis, connectivum 8–10 mm prolongatum, appendice ventrali 1.5–2.3 mm. Stamina minora antheris flavis, 4–6 mm longis, connectivum 2.5–3 mm prolongatum, appendice ventrali 1 mm. Ovarium 6-loculare, glabrum, $\frac{2}{3}$ inferum. Capsula globosa, 7–10 mm. Semina 1.5–2 mm, angulata, foveolata.

Small tree 1.5–2.5 m tall. Branchlets dichotomous, glabrous with conspicuous scars from the abscission of the leaves. Leaves sessile, imbricate; blades rigidly coriaceous, 9–20 × 5–10 mm, cordate to ovate-elliptic, apex narrowly acute; base narrowly amplexicaulous; adaxially glabrous 1-nervate; abaxially with sparse minute sessile glandular hairs, inconspicuously 3-nervate; margin revolute. Inflorescence terminal, reduced to a solitary, sessile, (5)6-merous flower. Hypanthium campanulate, 6–9 mm long to the torus, moderately covered with spreading glandular sessile hairs. Calyx lobes caducous in fruit, 5–7 mm long and 3–4 mm wide at the base, narrowly triangular, outer surface with spreading glandular sessile hairs, inner surface glabrous. Corolla glabrous, white or sometimes tinged with pink in bud or with pink nectar guides; petals basally yellowish, elliptic-obovate, obtuse to rounded at the apices, 15–27 × 9–17 mm, margins entire. Stamens 10 or 12 in number, dimorphic; longer filaments 6–8 mm long, yellow, with anthers 6–7 mm long, wine-colored, the connective prolonged 8–10 mm with a bifid ventral appendage 1.5–2.3 mm long; shorter filaments 5–7 mm long, yellow, with anthers 4–6 mm long, yellow, the connective prolonged 2.5–3 mm with an obtuse ventral appendage 1 mm long. Ovary $\frac{2}{3}$ inferior, elliptic to ovoid, 6–7 × 2.5–3.5 mm, 6-locular, glabrous. Style glabrous, 1.2–1.7 cm long, incurved apically; stigma truncate. Capsule dry, semi-woody, globose, 7–10 mm long, 7–10 mm diam. Seeds numerous, angular-obovoid, 1.5–2 mm long; testa foveolate.

Distribution. This species appears to be a narrow endemic restricted to the Serra dos Cristais, Goiás, at 1050–1200 m s.m. *Lavoisiera fragilis* grows in sparse cerrado and campo rupestre on shallow, sandy, crystal-bearing soils, frequently forming large populations with *Mimosa decorticans*

Barneby, another endemic species. These two taxa are practically the only trees amidst the grasses, sedges, and other herbaceous vegetation. It is quite common in this specific habitat, and we are pleased to report that it appears to be adequately protected by the new reserve.

DISCUSSION

Lavoisiera fragilis is a distinctive species characterized by being a small, dichotomous tree, by its coriaceous, weakly 3-nervate leaves, large white flowers, nearly glabrous, campanulate hypanthium, and globose fruits with caducous calyx lobes. It is best assigned to section *Gentianoides* sensu Cogniaux (1883) and would be identified in the *Flora Brasiliensis* key to *Lavoisiera* (Cogniaux, 1883) as *L. pohliana* O. Berg ex Triana. Triana described *L. pohliana* based on a fruiting collection, so the flowers are unknown. Both species possess rigid, imbricate, semi-amplexicaulous leaves that are glabrous on the upper surface and sparsely glandulose on the lower surface. *Lavoisiera pohliana* is readily distinguished from *L. fragilis* by being a small shrub, by its calyx lobes, which are persistent in the fruit, and by its distribution, which is in the Chapada dos Columbais in the Jequitinhonha River region of eastern Minas Gerais.

Superficially, *Lavoisiera fragilis* is most similar to *L. cordata* Cogniaux, a species that is apparently endemic to the Serra do Cipó in Minas Gerais and that also belongs to section *Gentianoides*. The Serra do Cipó, like the Serra dos Cristais, is a high-altitude enclave of campo rupestre on the margin of the cerrado biome and consequently a strong center of endemism (Giulietti et al., 1987). Both species are arborescent and have large, hexamerous white flowers and very similar stamens. They differ mainly in the color and disposition of the leaves, which are glaucous and lax in *L. cordata* and shiny and imbricate in *L. fragilis*, by the shape of the hypanthium, which is infundibular in *L. cordata* and campanulate in *L. fragilis*, and by the calyx lobes, which are persistent in the fruit in *L. cordata* and caducous in *L. fragilis*.

The name *Lavoisiera fragilis* was presumably given to this species by Alfred Cogniaux; both the Glaziou list (Glaziou, 1907) and the Glaziou specimen at Kew identify this plant as "*Lavoisiera fragilis* Cogn.," and thus Glaziou must have sent the material to Cogniaux for identification. The wood is extremely weak, with even fairly large branches breaking quite easily, and this may be the origin of the epithet *fragilis*. The collection locality given by Glaziou (1907) is "Almocafre, Serra dos Crystaes,

Goyaz." Glaziou cited this collection as being in Paris, Kew, and Berlin, but we have accessed only two collections, one in Kew and one in Rio de Janeiro.

Since this name is cited in *Index Kewensis* and published in the Glaziou collections list (Glaziou, 1907), we feel it has entered the literature and have chosen to maintain it.

Lavoisiera fragilis is an extremely handsome tree, resembling an oversized bonsai due to its finely fissured gray bark, twisted branches, and small shiny leaves. The flowers are apparently produced all year-round.

Paratypes. BRAZIL. **Goiás:** Cristalina, 5 km S of Cristalina, Serra dos Cristais, 1 Nov. 1965 (fl, fr), *Irwin et al.* 9738 (UB); ca. 2 km N of Cristalina, Serra dos Cristais, 2 Mar. 1966 (fl), *Irwin et al.* 13296 (UB); Cristalina, ca. 5 km da cidade, estrada para Paracatu, 16°46'S, 47°37'W, 1050 m, 4 Feb. 1987 (fl), *Pirani et al.* 1552 (K not seen, SPF, UB photo of K material); Cristalina, Reserva Particular de Patrimônio Natural Linda Serra dos Topázios, 16°45'S, 47°40'W, 15 Jan. 1995 (fl), *Proença & Sautchuk* 1259 (UB), 29 Nov. 1995 (fl, fr), *Proença & Morreto* 1327 (UB), 22 Mar. 1998 (fl, fr), *Oliveira et al.* 285 (K, MO, UB, UFG).

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