
A Hitherto *Chirita* (Gesneriaceae) Can Now Be Identified as a *Monopyle*

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ABSTRACT. *Chirita* (?) *lilacina* Lem. is determined to be a species of the Neotropical genus *Monopyle* Benth., for which the combination *M. lilacina* (Lem.) L. E. Skog, Barrie & Boggan is proposed. *Monopyle lilacina* is native to the provinces of Chiriquí and Bocas del Toro in western Panama. A current description and distribution are provided for the species. *Chirita lilacina* and *Gloxinia lilacina* Lem., alternative names proposed by Lemaire, are lectotypified.

Key words: *Chirita*, Gesneriaceae, *Gloxinia*, *Monopyle*, Panama.

In 1867–1868, the German plant explorer Gustav Wallis (1830–1878) collected a plant with white, pink, and lilac flowers on the flanks of the hills in Chiriquí of New Grenada (now western Panama). The plants were introduced to cultivation and distributed in the horticultural trade by J. J. Linden, a famed horticulturist, plant explorer, introducer, and dealer in Belgium. In 1869, the plants were illustrated and described by Charles Lemaire in *L'illustration Horticole* as *Chirita* (?) *lilacina* Lem. (Lemaire, 1869). Lemaire was not completely convinced that the plant belonged to *Chirita* Buch.-Ham. ex D. Don, however. To him the overall floral characters were, for the most part, those of *Chirita* (Gesneriaceae subfam. Cyrtandroideae; Lemaire recognized Cyrtandraceae at the rank of family, not as a subfamily of Gesneriaceae), though not conclusively. *Chirita* species have two stamens; this plant had four, which suggested to Lemaire that it might instead be a species of Gesneriaceae (Gesneriaceae subfam. Gesnerioideae in modern classifications), most likely a *Gloxinia* L'Hér. But flowering material was all that was available to him and Lemaire required fruits to place the species conclusively. The genus to which this species truly belongs, *Monopyle* Benth. (Gesneriaceae),

would not be named and described for another seven years. *Monopyle* is distributed from Guatemala south to Peru and Bolivia (Morton, 1945). That the species possibly belonged in *Gloxinia* was a reasonable assumption, as *Gloxinia* and *Monopyle* are closely related (Roalson et al., 2005).

Prior to a recent revision in which *Chirita* was disassembled and the species distributed among five genera, with *Chirita* itself reduced to synonymy under *Henckelia* Spreng. (Weber et al., 2011), *Chirita* was considered to be an exclusively Asian genus of about 150 species of annual and perennial herbs and shrubs. *Chirita lilacina* was the only Neotropical species described in the genus. Although mentioned in several garden catalogs in the years immediately following its publication, *C. lilacina* fell from use after 1883, when Clarke (1883) published his monograph of the subfamily Cyrtandroideae (“Cyrtandreae”) and placed it on his list of excluded taxa. The only subsequent reference to the name that we have located is the first edition of *Index Kewensis* (Jackson, 1895).

When publishing *Chirita lilacina*, Lemaire proposed the alternative name “*Gloxinia lilacina*” in the event that *Gloxinia* should prove to be the correct placement for the species. This alternative name did not appear on the plate itself, and in the text associated with the plate it appeared in a different format: “**Chirita** (?) **lilacina** NOB. Tabula nostra 608. An **Gloxinia**? (*G. lilacina*).” (Lemaire, 1869: unnumbered page). The latter name has not been previously recognized as validly published. It has apparently never been used or cited, either as an accepted name or in synonymy, other than in the original publication. We can find no mention of it in the literature, it is not listed in any online database, and a Google search returned no hits for the binomial. It



Figure 1. Lectotype of *Chirita lilacina* Lem., C. Lemaire, Ill. Hort. 16: pl. 608. 1869.

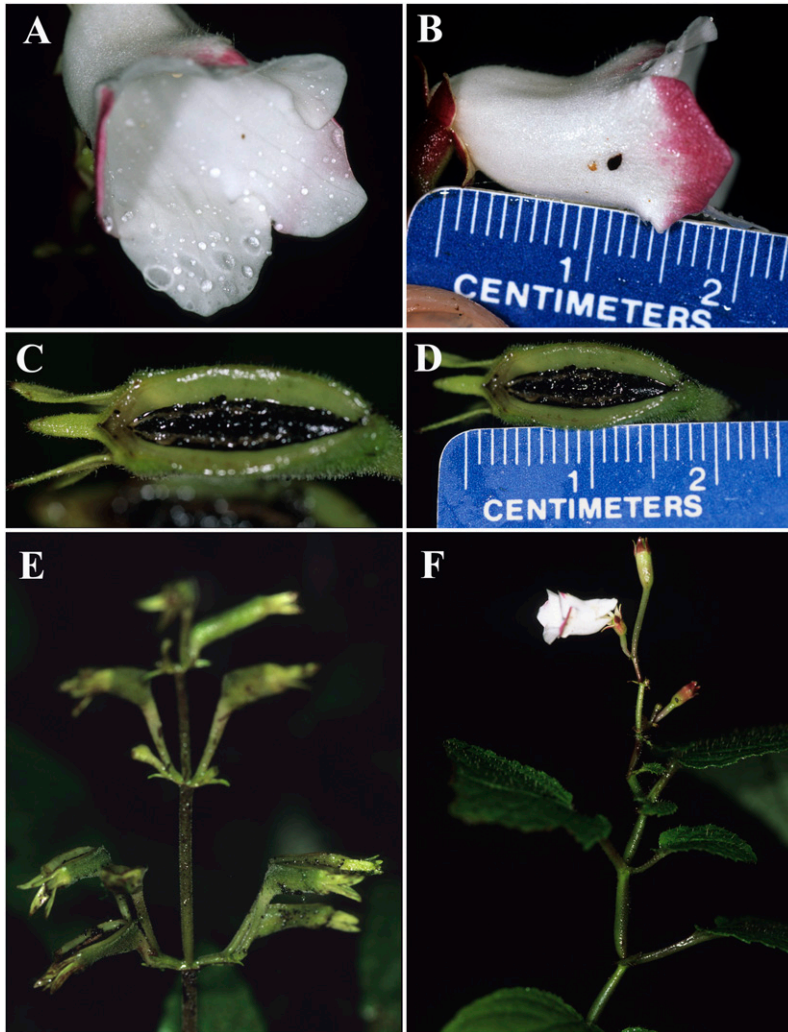


Figure 2. *Monopyle lilacina* (Lem.) L. E. Skog, Barrie & Boggan. —A. Front view of corolla showing uniformly white interior. —B. Lateral view of corolla showing maroon shading on outer surface of the lateral lobes. —C, D. Cross section of mature fruit. —E. Habit, showing erect infructescence. —F. Habit, showing erect inflorescence. A, B, F, Clark & Espinosa 8603; C–E, J. L. Clark 8551.

is necessarily a nomenclatural synonym of *C. lilacina* so the two are simultaneously typified below.

Lemaire's publication came to our attention as we were preparing the treatment of Gesneriaceae for *Flora Mesoamericana*. Benefitting from the opportunity to examine collections made in the same area where Wallis originally found his plant, we have determined that the species is correctly placed in *Monopyle*. *Chirita* s.l. was an Asian genus of non-rhizomatous herbs and subshrubs with flowers having two anthers. *Gloxinia* and *Monopyle* are Neotropical genera of rhizomatous herbs with flowers having four anthers. In *Monopyle*, the vestiture in most species is at least partially composed of uncinata hairs, the leaves paired at a node are unequal in size (anisophyllous), and the capsule

dehisces along one suture. In *Gloxinia*, the hairs are never uncinata, the leaves in a pair are of nearly equal size, and the capsule dehisces along two sutures. The species treated here is anisophyllous and possesses uncinata hairs. Our determination has been corroborated by Jeremy Keene, who has recently revised *Monopyle* (Keene, 2013).

Because this species is not well known, a full description and distribution and habitat data compiled with the aid of recent collections are presented. Additionally, because the basionym, *Chirita lilacina*, has not been typified previously, the illustration in the protologue is designated as the lectotype. *Gloxinia lilacina* is likewise lectotypified on the illustration, the sole original element for both names.

Monopyle lilacina (Lem.) L. E. Skog, Barrie & Boggan, comb. nov. Basionym: *Chirita lilacina* Lem., Ill. Hort. 16: pl. 608. 1869. *Gloxinia lilacina* Lem., Ill. Hort. 16: pl. 608. 1869, nom. alt. TYPE: [icon in] C. Lemaire, Ill. Hort., 16: pl. 608. 1869 (lectotype, designated here). Figure 1.

Perennial, rhizomatous herbs, 0.3–1.5 m tall. Vestiture a mixture of simple and uncinete, multicellular hairs. Stems erect or less commonly trailing, terete, constricted at nodes, red, tomentellous. Leaves opposite, anisophyllous; blade 4.5–16.5 × 2.5–7.5 cm; narrowly elliptic to elliptic, asymmetric or symmetric; chartaceous; adaxial surface green, sparsely pubescent; abaxial surface green or commonly reddish or maroon, tomentellous along veins, venation netted, prominent; lateral veins 6 to 8 per side; base oblique, cuneate, or obtuse; apex acute to acuminate; margins dentate-serrate or serrate; petiole 0.5–5.2 cm, red, tomentellous. Inflorescence a terminal thyrses, 1.3–2.8 cm; lateral branches in 6 to 8 pairs, 3–7 cm. Flowers ebracteate, on pedicels 4–17 mm; calyx green, red, or maroon externally, inner surface of lobes cream or pink, tomentellous, tube 5–13 × 2–3 mm, lobes 5–8 × 1–1.5 mm, narrowly to broadly lanceolate; corolla 15–21 × 10–15 mm, oblique in calyx, campanulate, asymmetric, tube white to pinkish, inside yellow or shell-pink, throat yellow to peach, sparsely tomentellous externally, lobes 6–10 × 6–10 mm, semicircular, spreading, pink outside to slightly lilac, adaxial surface white or cream to purple; stamens 4, 5–6 mm, anthers forming a square; style 4–5 mm; stigma capitate. Fruit a capsule, 7–15 × 2–3 mm, cylindrical, green, tomentellous, dehiscing along a single suture, calyx lobes persistent.

Distribution and habitat. *Monopyle lilacina* is known only from western Panama, mainly from the province of Chiriquí, but reaching the province of Bocas del Toro at the continental divide. It grows in premontane rain or cloud forests, on slopes, along trails and stream sides, sometimes on white sandy soils with a thin humus layer, at 1100–1500 m. It flowers from February to July; fruiting specimens have been collected in July.

The species is apparently endemic to Chiriquí and Bocas del Toro, in the region of the Fortuna Dam and forest reserve. This restriction is a very good clue to the identity, as it is one of only two species of *Monopyle* found in Chiriquí and Bocas del Toro. *Monopyle maxonii* C. V. Morton also reaches Chiriquí and Bocas del Toro, but in different areas (J. Keene, pers. comm.). Other species of *Monopyle*, e.g., *M. longicarpa* J. L. Clark & Keene and *M. panamensis* C. V. Morton, occur in several other provinces of Panama and in nearby Costa Rica.

Typification. The plate published as part of the protologue is the only known element qualifying as original material and is, therefore, the obligate lectotype of both names.

Lemaire's description includes characters not visible on the plate, characters that he must have described from either living material or dried specimens no longer extant. A search of European herbaria by the first author failed to uncover any relevant specimens. As the description is not based solely on the figure, it cannot be considered the holotype.

Notes. The specific epithet, *lilacina*, refers to lilac-colored corolla lobes, as are distinctly shown in the Lemaire illustration. Judging from the specimens examined, however, this form is rarely seen. Lobe coloration may vary from pinkish to purplish and the colored area is usually restricted to the abaxial surface of the lobes (Fig. 2A, B), and not on the adaxial surface as shown in the illustration. Although the illustration depicts, and the description describes, the flowers as being white with the limb lilac in color, it is really only the adaxial side of the limb that is pinkish to purple, with the tube mainly white, and yellow in the throat. Other species of *Monopyle* may have white corolla tubes and lobes bluish or purplish on the abaxial surface (e.g., *M. longicarpa*), as do some species of *Chirita* s.l., and the illustrator may have recalled other species with that character. Other species may also have yellow in the corolla tube like *M. lilacina*, which may serve as a nectar guide for entomophilous pollinators.

Specimens examined. PANAMA. **Bocas del Toro:** Cerro Colorado, 9.2 mi. W of Chamé, along trail E of rd. which leads down to stream, 8°35'N 81°50'W, 1450–1480 m, 6 July 1988, *Croat 69004* (MO, US); vic. of Fortuna Dam, along continental divide trail, 8°45'N 82°15'W, 1200 m, 16 Apr. 1987, *McPherson 10862* (MO). **Chiriquí:** along rd. betw. Gualaca & the Fortuna Dam site, at 10.1 mi. NW of Los Planes de Hornito, 1300 m, 8 Apr. 1980, *Antonio 4067* (MO); vic. of Gualaca, ca 8.5 mi. from Planes de Hornito, La Fortuna on rd. to dam site, 4400 ft., 10 July 1980, *Antonio 5104* (MO, US); Fortuna Dam area, N fork of Quebrada de Arena, 8°46'N 82°12'W, 1100 m, 6 Feb. 1984, *Churchill et al. 4681* (MO, US); Fortuna Dam area, along Quebrada Bonito to E of rd., 8°4'N 82°13'W, 1100 m, 8 Feb. 1984, *Churchill et al. 4735* (MO, US); Distr. Gualaca, Correg. Hornito, Reserva Forestal Fortuna (Smithsonian Tropical Research Institute), trail near Toma de Agua, 8°43'31"N 82°14'06"W, 1100–1250 m, 26 July 2003, *Clark 8851* (AAU, COL, NY, PMA, SCZ, SEL, UNA, US), sendero/ Trocha Tres de Noviembre, headwaters of Quebrada Honda, 8°45'41"N 82°15'32"W, 1200–1350 m, 30 July 2003, *Clark & Espinosa 8603* (NY, PMA, SCZ, SEL, UNA, US); along rd. betw. Gualaca & Fortuna Dam site, 8.3 mi. NW of Los Planes de Hornito, 8°44'N 82°16'W, 1260 m, 9 Apr. 1980, *Croat 49954* (MO, US), 10.1 mi. NW of Los Planes de Hornito, 8°45'N 82°17'W, 1250 m, 10 Apr. 1980, *Croat 50048* (MO, US); Fortuna Hydroelectric Project, ca. 2 km SE of dam site along rd. under construction, 6 June 1980, *Folsom et al. 8081* (MO, US); SE of AOKI camp, 1100–1300 m, 7 June 1980, *Folsom et al. 8184* (MO, US); 1 km N of Fortuna Lake, 8°45'N 82°13'W, 1200 m, 3 Mar. 1985, *Hampshire & Whiteford 267* (BM, US); 1/2 km NE of Quebrada de Arena, draining into Río Chiriquí, carretera del Oleoducto IRHE Fortuna Hydroelectric Project, near continental divide, 8°46'N 82°12'W, 1100 m, 12 Mar. 1982, *Knapp et al. 4027* (MO, US); along rd. & into forests 10 km N of Los Planes de Hornito, IRHE Fortuna Hydroelectric Project,

8°45'N 82°12'W, 1100–1200 m, 10 May 1982, *Knapp 5039* (MO, US); near site of dam, lower slopes of Cerro Fortuna, IRHE Fortuna Hydroelectric Project, 1150 m, 18 June 1982, *Knapp & Vodicka 5572* (MO, US); Fortuna Dam site, above Gualaca, ca. 8 km past dam on rd. toward Chiriquí Grande, ca. 8°45'N 82°15'W, ca. 1130 m, 8 Mar. 1985, *McPherson 6695* (MO, US); vic. of Fortuna Dam, along trail from hwy. down to reservoir, ca. 8°45'N 82°15'W, ca. 1100 m, 29 Apr. 1986, *McPherson 9133* (MO, US); Distr. Boquete, Fortuna Dam site, 1200 m, 7 Feb. 1985, *van der Werff 6634* (MO, US); Distr. Boquete, Fortuna Dam site, continental divide, 1100 m, 9 Feb. 1985, *van der Werff 6795* (MO, US), 10 Feb. 1985, *van der Werff 6891* (MO).

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