



A new species of *Sonerila* (Melastomataceae) serendipitously discovered in Pasonanca Natural Park, Zamboanga City, Southwestern Philippines with notes on *S. woodii*

Mark Arcebal K. NAIVE^{1,2,*}, J. Peter QUAKENBUSH³

1. Center for Integrative Conservation, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, Mengla, Yunnan 666303, China. 2. University of Chinese Academy of Sciences, Beijing 100049, China. 3. Department of Biological Sciences, Western Michigan University, Kalamazoo, MI 49008-5410, USA. *Corresponding author's e-mails: arciinaive19@gmail.com/mark@xtbg.ac.cn

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ABSTRACT: A species new to science, *Sonerila mapelo* Naive, discovered in Pasonanca Natural Park, Zamboanga City, Western Mindanao, Philippines, is herewith described and illustrated. Color plates, notes on its distribution, habitat, phenology, and a comparison to its allied species are provided below. In addition, we took this opportunity to lectotypify the name *S. woodii* and its synonym *S. lilacina*. With the discovery of the new species, the Philippines now has a total of three *Sonerila* taxa, of which two are known to be endemic.

KEY WORDS: Lectotypifications, *Sonerila metallica*, *Sonerila heterophylla*, Sonerileae, Tropical botany, Zamboanga Peninsula.

INTRODUCTION

The genus *Sonerila* Roxburgh, belonging to the plant family Melastomataceae, tribe Sonerileae (Liu *et al.*, 2022), is represented by approximately 194 species, 38 of these were described since 2000 (POWO, 2023). The vast majority of species are distributed in Tropical and Subtropical Asia (Murugan and Nair, 2016). Only five species were previously known east of Huxley's Line, with three in Maluku, two in the Philippines and Sulawesi, and one in New Guinea (Ulloa Ulloa *et al.*, 2022). Most *Sonerila* are diminutive herbs and can be recognized by their trimerous flowers and stamens without distinct anther connectives (Renner *et al.*, 2001; Chen and Renner, 2007). The genus is poorly known in the Philippines and is represented by only two species, namely, *Sonerila tenera* Royle and *S. woodii* Merrill. *Sonerila tenera* is a widespread species, known only from northern Luzon in the Philippines. *Sonerila woodii* is an endemic species described by Elmer D. Merrill in 1907 based on his collected specimen from Mt. Halcon of Mindoro (Merrill, 1907). It is widespread in the Philippines, recorded in Palawan (*Edaño* 376, L. [L.2557122]), Luzon (Phytoimages ref. DOL154170, DOL154190, DOL154192, DOL154193), Catanduanes, Biliran (*Sulit* 21710, L.2557124; 21558, L.2557123, L.2557121), Leyte, and Mindanao (Merrill, 1923 p. 190). A literature review revealed that the name needs lectotypification following the Shenzhen code Art. 9.3, 9.11 and 9.12 (Turland *et al.*, 2018), which we accomplished below.

During the first author's botanical exploration in October 2022 at the Tabu-tabu Biodiversity Monitoring Site of Pasonanca Natural Park, an unknown population of *Sonerila* species was collected. After a careful

examination of its morphology and consultation of relevant literature and type specimens of *Sonerila* species from the Philippines and neighboring countries, it was discovered that the population is distinctive. We describe it here as a species new to science. With this discovery, the Philippines now has a total of three *Sonerila* species. Little attention has been given to these diminutive plants in the Philippines over the past century, but continued fieldwork will probably result in the discovery of more species, especially in Palawan where several unidentified populations exist, either endemic or as new records from neighboring countries.

MATERIALS AND METHODS

The measurements and descriptions were based on freshly collected material and/or herbarium specimens. The general plant descriptive terminology follows Beentje (2016). Herbarium citations follow Index Herbariorum (Thiers, 2023). Relevant literature and type specimens of *Sonerila* species from the Philippines and neighboring countries were examined in different herbaria through high-resolution images accessed from <https://plants.jstor.org/> and/or Global Biodiversity Information Facility (GBIF) accessed from <https://www.gbif.org>. An assessment of conservation status was carried out following IUCN (2022).

TAXONOMIC TREATMENT

Sonerila mapelo Naive, *sp. nov.*

Figs. 1 & 2

Type: PHILIPPINES. Western Mindanao, Zamboanga Peninsula, Zamboanga City, La Paz, Pasonanca Natural Park, Tabu Tabu BMS, elev. 1,360 m,

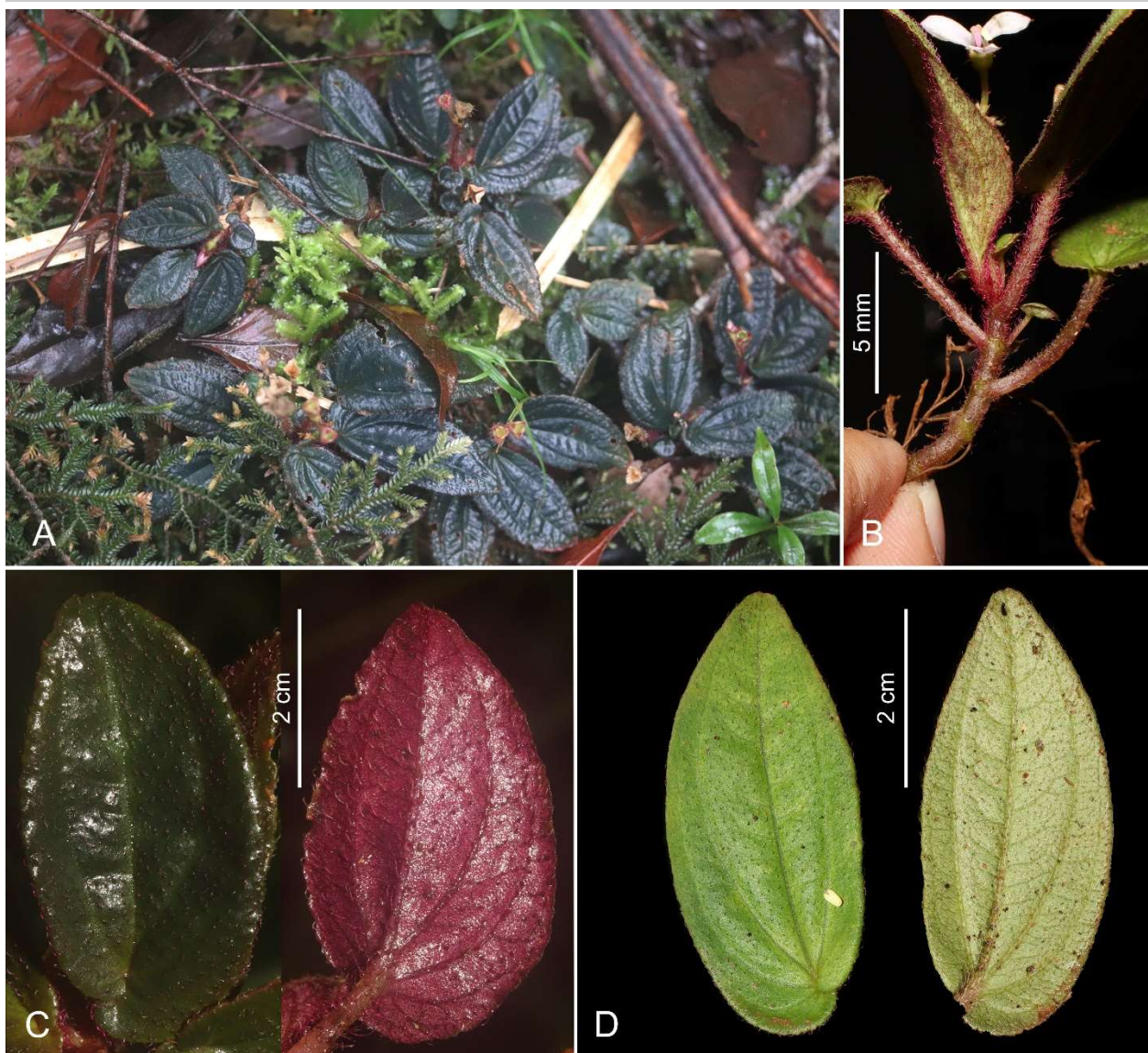


Fig. 1. *Sonerila mapelo* Naive. **A.** Habit and habitat. **B.** Detail of stem and petiole. **C-D.** Detail of leaves showing that two individuals exhibit different color forms (left, adaxial leaf; right, abaxial leaf). Photos and prepared by: MAKN (MAK Naive 134, PNH, HNUL, HITBC).

20 October 2022, *MAK Naive 134* (holotype PNH, isotypes HNUL, HITBC).

Diagnosis: This new species can be easily distinguished from all other Philippine *Sonerila* by having short petioles (≤ 6 mm) and strongly dimorphic leaves at each node. *Sonerila mapelo* closely resembles *S. metallica* C.W. Lin, C.F. Chen & T.Y.A. Yang. (Lin *et al.*, 2015) from Sarawak, Borneo, however, it differs significantly in having these following characters: both sides of the leaves densely strigose with up to 6 major veins (vs. sparsely setose in 2 or 4 rows between main and lateral veins with 3–5 veins in *S. metallica*); broadly cordate small leaves (vs. suborbicular to obovate-lanceolate small leaves in *S. metallica*); lanceolate bracts with acute apex (vs. acicular to linear bracts with apiculate apex in *S. metallica*); infundibuliform, angular

hypanthium (vs. campanulate, terete hypanthium in *S. metallica*); elliptic, flat petals (vs. oblong to obovate involute petals in *S. metallica*); purplish-white filament, style and stigma (vs. cream filament, style and sigma in *S. metallica*); and infundibuliform, 3-ribbed, strigose capsule (vs. campanulate, densely hispid-setose capsule in *S. metallica*).

Description: Terrestrial to epiphytic, perennial herbs, up to 15 cm high or more. *Roots* ca. 1 mm thick, brownish-white, glabrous. *Stem* terete, 3–5 mm in diam., deep purplish-red to purplish-green, densely covered with magenta hairs, strigose, internodes 1.5–1.9 cm long, nodes swollen. *Leaves* opposite with strongly dimorphic leaf pairs, petiolate, 3.2–6.0 cm long; *petiole* terete, 2.1–6.0 mm long, 2–3 mm thick, purplish green to purple; *lamina* obliquely oblong to ovate, 3.0–4.7 by 1.6–2.9 cm,



Fig. 2. *Sonerila mapelo* Naive. **A.** Flower (front view). **B.** Flower (profile view). **C.** Detail of flower (petals removed). **D.** Detail of fruit (front view). **E.** Detail of fruit (profile view). Photos and prepared by: MAKN (MAK Naive 134, PNH, HNUL, HITBC).

coriaceous, with up to 6 major veins, adaxially green to dark olive green, abaxially pale green to reddish-purple, densely strigose on both sides, margin entire, ciliate, base cordate, apex obtuse to acute; *small leaf* petiolate, broadly cordate, 3–5 by 6.0–7.5 mm, margin entire, ciliate, base cuneate, apex obtuse. *Inflorescence* axillary, cymose, up to 4.5 cm long, bearing 1–5 flowers, pedunculate; *peduncle* terete, 1.3–2.7 cm long, 2 mm thick, purplish-green, densely strigose; *bracts* minute, lanceolate, 2.0–3.5 by 1.5–2.5 mm, subcoriaceous, glabrous on both sides, margin entire, apex acute. *Pedicel* terete to slightly furrowed, 4–7 mm long, 1.0–1.5 mm in diam., magenta strigose. *Flower* bisexual, 3-merous. *Hypanthium* infundibuliform, 4–5 mm long, 3.0–3.5 mm thick, 3-ribbed, magenta strigose. *Calyx lobes* triangular, 1.0–1.5

by 0.8–1.0 mm, strigose, apex acute to attenuate. *Petals* 3, thin, elliptic, 8.0–8.5 by 5 mm, purplish-pink, sparsely strigose on midrib of the abaxial surface, margin entire, base cordate, apex acuminate to cuspidate. *Stamens* 3, isomorphic; *filaments* filiform, 4.5–5.0 mm long, glabrous, purplish-white; *anthers* oblong, 1.8–2.0 mm long, pale yellow, apex opening with two pores. *Ovary* inferior, 2.0–2.5 mm long, 2–3 mm in diam., infundibuliform, pluriovulate, placentation axile; *ovary crown* 0.5–1.0 mm high; *style* filiform, 7–8 mm long, purplish-white, glabrous, strongly curved; *stigma* capitate, purplish-white, puberulent, ca. 1 mm thick. *Capsule* infundibuliform, 6 by 5 mm, angular, brown, sparsely strigose; *seeds* numerous, brown.

Distribution: Endemic to Zamboanga Peninsula, the



island of Mindanao. The species is so far only known in Tabu Tabu BMS of Pasonanca Natural Park, La Paz, Zamboanga City.

Habitat: Found growing in the broad leaf montane forest as a terrestrial on moss cushions or as an epiphyte on the lower trunk of tree ferns with a moist, cool, and deeply shaded environment at an elevation between 1,100 to 1,360 m.a.s.l.

Phenology: Flowering and fruiting in September to November.

Etymology: The specific epithet ‘*mapelo*’ was used as a noun in apposition. It is a chabacano word which means hairy, in reference to the pubescent overall morphology of this new species. Chabacano is the native language of about 50% of the population of Zamboanga City and the surrounding area in the extreme western part of Mindanao Island (Steinkrüger, 2013).

Proposed conservation status: Following the IUCN Standards and Petitions Committee (2022), we propose this species be provisionally treated as ‘Vulnerable’ (VU D1). So far, the species has only been found within Tabu-tabu BMS station of Pasonanca Natural Park in Zamboanga City, Southwestern Philippines. The new species is quite common in the area usually found growing along the trail with over 500 mature individuals. It is likely that other populations exist in neighboring mountain ranges of the park, thus extensive survey should be done to ascertain the population density of this new endemic species. Pasonanca Natural Park is one of the protected areas in the Philippines declared in 1999 through proclamation no. 199, issued by President Corazon Aquino.

Taxonomic notes: This new endemic species is morphologically similar to the Bornean species *S. metallica*. It is also comparable to the Javan species *S. heterophylla*, but differs significantly in having oblong to elliptic leaves with cordate base, obtuse to acute apex and entire margin (vs. lanceolate leaves with acute to auriculate leaf base, obtusely acuminate apex and sparsely serrate margin in *S. heterophylla*); petiolate small leaf (vs. sessile small leaf in *S. heterophylla*); 1.3–2.7 cm long peduncle (vs. 0.5–4.0 mm long peduncle in *S. heterophylla*); and 4–7 mm long pedicel (vs. 2–4 mm long pedicel in *S. heterophylla*). Among Philippine *Sonerila* species, *S. mapelo* is most comparable to *S. woodii*. However, *S. mapelo* differs significantly in having dimorphic leaves (vs. isomorphic leaves in *S. woodii*), axillary inflorescence (vs. terminal inflorescence in *S. woodii*) and oblong anthers with emarginate apex (vs. lanceolate anthers in *S. woodii*).

Lectotypifications

Sonerila woodii Merr., Philipp. J. Sci., C 2: 286 (1907); **Type:** PHILIPPINES. Visayas, Mindoro, Mt. Halcon, elev. 900–1,300 m, Nov. 1906, *E.D. Merrill 5794* (**Lectotype:** K000867845-image seen!, designated here;

isolectotypes: NY00273283-image seen!, LY0236522-image seen!, US710904-image seen!). **Syntype:** PHILIPPINES. Visayas, Mindoro, Mt. Halcon, 15 June 1906, *Merritt 4352* (K000867844-image seen!).

Sonerila lilacina Elmer, Leaflet Philipp. Bot. viii. 2765 (1915). **Type:** PHILIPPINES. Mindanao, Province of Agusan, Cabadbaran (Mt. Urdaneta), elev. 4,500 ft, October 1912, *A.D.E. Elmer 14135* (lectotype: MO313930-image seen!, designated here; isolectotypes: BM000884957-image seen!, BRIT24083-image seen!, CAS0005749-image seen!, E00504433-image seen!, GH00073230-image seen!, K000867846-image seen!, L.2557466-image seen!, MICH1111900-image seen!, PH000273870-image seen!, NY00273282-image seen!, U0115850-image seen!).

Distribution: Endemic to the Philippines.

Taxonomic notes: *Sonerila woodii* was described by Elmer D. Merrill in The Flora of Mt. Halcon, Mindoro based on his specimens collected in November 1906 (*E.D. Merrill 5794*). In 1915, Adolph Daniel E. Elmer described a new species, *S. lilacina* based on his collected specimen in Mt. Urdaneta, Cabadbaran, Province of Agusan (*A.D.E. Elmer 14135*). He distinguished it from *S. woodii* based mostly on color and leaf size, and it was later synonymized by Merrill in 1923. In the protologue of *S. woodii*, Merrill (1907) cited *E.D. Merrill 5794* and *Merritt 4352* as the type gatherings and no holotype was designated. *Merritt 5794* is deposited in K, LY, NY, and US. We here designate K000867845 as the lectotype of *S. woodii* as it is a well preserved, complete sheet, that unequivocally agrees with the protologue.

Key to the Philippine *Sonerila* species

- 1a. Leaves opposite with dimorphic leaf pairs, coriaceous *S. mapelo*
- 1b. Leaves opposite with isomorphic, equal or subequal leaf pairs, membranous 2
- 2a. Leaves 3-nerved, margin dentate-ciliate with a bristle on the apex of tooth, apex acute or obtuse; anthers oblong, shorter than the filament ..
..... *S. tenera*
- 2b. Leaves >3-nerved, margin sharply serrulate, apex acuminate; anthers lanceolate, as long as or longer than the filament *S. woodii*

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