

# *Cyrtandra villosissima* var. *flavovirens* (Gesneriaceae), a new variety from Zamboanga Del Norte, Philippines

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## Abstract

A new variety of *Cyrtandra villosissima* from Zamboanga del Norte, Philippines, *C. villosissima* var. *flavovirens*, is here described. Both *C. villosissima* var. *villosissima* and *C. villosissima* var. *flavovirens* are erect suffrutescent plants, with large leaves that are slightly falcate, and have inflorescences with linear, densely hirsute bracts. *Cyrtandra villosissima* var. *flavovirens* can be distinguished from *C. villosissima* var. *villosissima* by its pale yellow to yellow-green corollas and its pedunculate inflorescences. A key to morphologically similar taxa, distribution maps, and photographs of the varieties are here provided.

**Keywords:** biodiversity; systematics; taxonomy; variety

## Introduction

The Philippines is one of the most biologically rich countries in the world, with exceptionally high levels of endemism (at least 40% in flowering plants) relative to its size (Posa et al. 2008; Peller et al. 2011 onwards). This high level of endemism is, however, threatened by habitat loss. In the 21<sup>st</sup> century, the Philippines experienced a sort of botanical renaissance wherein remote areas of the country were explored, allowing discoveries of many new species, and raising awareness to the value and importance of conserving Philippine biodiversity. Many of these discoveries are results of student projects. Particularly in Leon B. Postigo, Zamboanga del Norte, Mindanao, Philippines, efforts led by KRFM resulted in discoveries of new species in *Begonia* L. (Begoniaceae), *Hornstedtia* Retz. (Zingiberaceae), *Luvunga* Buch.-Ham. (Rutaceae), *Plagiostachys* Ridl. (Zingiberaceae), and *Saurauia* Willd. (Actinidiaceae) (Mazo et al. 2021a,b; Mazo & Tahil 2021; Mazo 2022; Mazo & Rubite 2022; Docot et al. 2022). The new variety from the genus *Cyrtandra* J.R.Forst. & G.Forst. (Gesneriaceae) reported here is also a result of KRFM's continued exploration in the locality. The genus *Cyrtandra* is the largest genus in the Gesneriaceae characterized by possessing two fertile stamens, and ellipsoidal indehiscent fruits that can either be tough-walled capsules or fleshy berries, and the Philippines currently ranks second in terms of *Cyrtandra* diversity (Atkins et al. 2013). Olivar et al. (2022) report 98 species and one variety in the Philippines. This new taxon is the second variety in the Philippines showing color variation. A key to morphologically similar species, photographs, a distribution map,

and a description of the taxon are provided to facilitate identification.

## Materials and Methods

As part of KRFM's ongoing research on the biodiversity of Leon B. Postigo, Zamboanga del Norte, Philippines, a *Cyrtandra* specimen with striking floral coloration was compared with protologues and type material to ascertain its novelty. This has resulted in the recognition of a new taxon. Specimens were collected from the type locality on Barangay Tinuyop, Leon B. Postigo, Zamboanga del Norte, and vouchers were prepared and deposited in PNH and CMUH. Specimens of *C. villosissima* were examined from A, BO, E, F, K, L, P, and US (abbreviations follow Thiers, continuously updated). Measurements were taken from herbarium voucher specimens, and dissections were made from reproductive parts preserved in alcohol.

*Cyrtandra villosissima* Merr. var. *flavovirens* Olivar & Mazo var. nov. (Fig. 1 & 2)

This taxon is a color variety of *C. villosissima*. The corollas are pale yellow to yellow-green (red in *C. villosissima* var. *villosissima*) and the peduncles and bracteoles are longer (peduncles 1–2 cm in *C. villosissima* var. *flavovirens* vs 4–5 mm in *C. villosissima* var. *villosissima*; bracteoles ca 1 cm in *C. villosissima* var. *flavovirens* vs ca 5 mm in *C. villosissima* var. *villosissima*) – Type: *K. R. F. Mazo 10* (holo: PNH! No. 258574; iso: CMUH!), Philippines, Mindanao, Zamboanga del Norte, Leon B. Postigo, Barangay Tinuyop, Naning River, elev. 436 m, fl. February 2021.

**Etymology.** The varietal name is from the Latin words *flavus* meaning “yellow” and *virens* meaning “green”, referring to the color of the corollas.

An erect suffrutescent plant up to 3 m in height. Stems terete or slightly grooved, with ferruginous woolly hairs throughout. Leaves opposite, subequal; petioles 3–7 cm long, densely hirsute; blades 12–32 × 3–17 cm, oblong-ovate to ovate-lanceolate, slightly falcate, apex acuminate, base acute or acuminate, pronouncedly asymmetrical, not decurrent, margins denticulate, 12–15 pairs of lateral veins, curving and uniting at the margins, densely hirsute on both sides. Inflorescences

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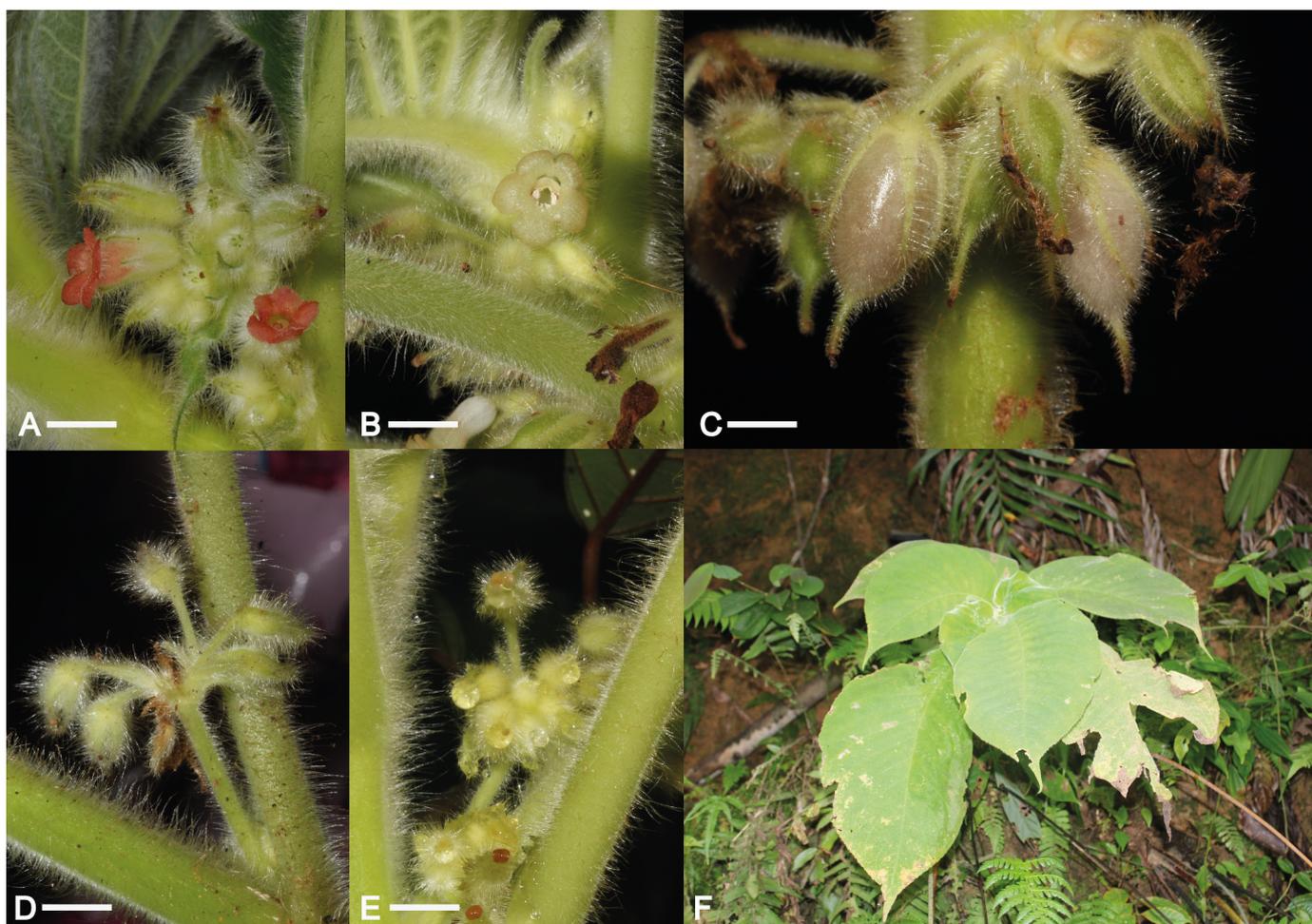
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**Figure 1.** Photographs of *Cyrtandra villosissima* varieties. A. *C. villosissima* var. *villosissima* showing red corollas; B. *C. villosissima* var. *flavovirens* showing pale yellow to yellow-green corollas; C. Translucent fruits of *C. villosissima* var. *flavovirens*; D—E. Pedunculate inflorescences of *C. villosissima* var. *flavovirens*; F. Habit of *C. villosissima* var. *flavovirens*. Scale bars at 1 cm — Photos by: A. CDFP, B—F. JECO & KRFM

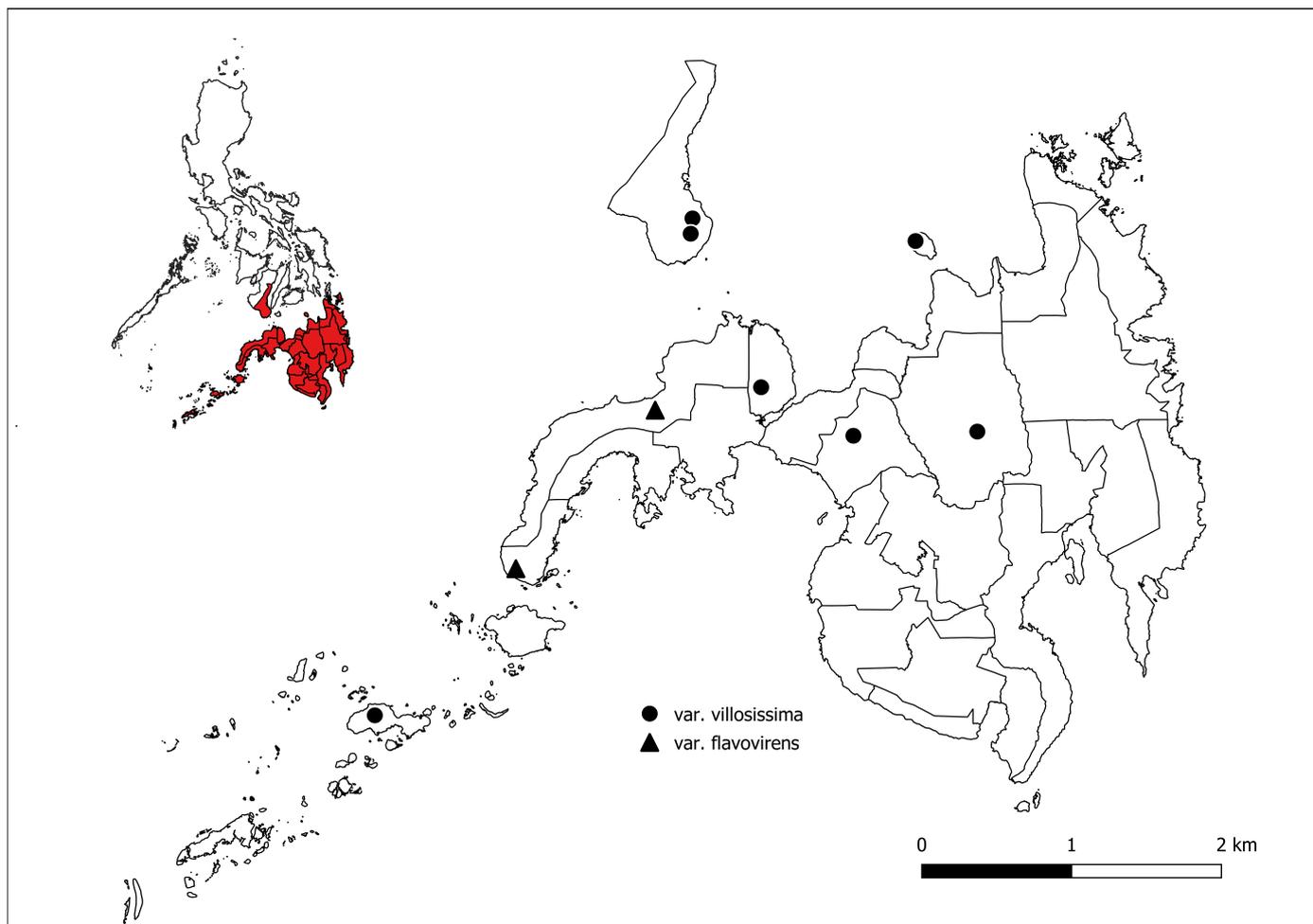
cymous, axillary, erect, with 4–many flowers; peduncle 1–2 cm long, densely hirsute; bracts green, ca 1–1.5 cm long, linear, densely hirsute on both surfaces, persistent; bracteoles 1–1.2 cm long, densely hirsute on both surfaces; pedicels 6–11 mm long, densely hirsute. Calyx pale green, lobes linear, ca. 1.5 cm × 2 mm, divided to the base, densely hirsute. Corolla pale yellow to yellow-green, ca 2 cm long, funnel-shaped, lobes orbicular-ovate, reflexed 3–4.5 mm long, densely hirsute externally, glabrous internally. Stamens 2; filaments ca 4 mm long; anthers ca 2.5 mm long, thecae parallel, coherent at apices. Staminodes 3, central 0.5 mm long, lateral 1 mm long. Gynoecium ca 13 mm long overall, densely hirsute; disc wavy, glabrous; style densely hirsute. Fruits oblong, translucent green, turning white upon maturity, densely hirsute, ca 1 cm × 6 mm; calyx and style persistent.

**Distribution.** This taxon is currently known only to occur in Zamboanga Peninsula, Mindanao, Philippines (Fig 2). *Cyrtandra villosissima* var. *villosissima* is more widely distributed in Mindanao and its neighboring islands (Fig 2). There are several specimens of *C. villosissima* available in herbaria, but without information on the corolla color, it is difficult to discriminate between the two varieties.

**Habitat & Ecology.** Occurring in secondary lowland forests along riverbanks. It was seen growing with individuals of

*Rhynchoetechum parviflorum* Blume. Seen flowering and fruiting between February and September.

**Note.** Kraenzlin (1913) described *Slackia philippinensis* Kraenzl. based on Merrill 8295 which was collected from a nearby locality, Sax River Mountains, Zamboanga del Sur (now Zamboanga City). Olivar et al. (2022) have not traced the type for *S. philippinensis*, but we have reason to believe that Kraenzlin (1913) actually saw a specimen of *C. villosissima* var. *flavovirens*. Kraenzlin (1913: 171) noted that he did not see the corollas of the specimen, but the large ovate leaves (30 × 17 cm) and the wooly indumentum are quite striking for the species. This character is typical for *C. villosissima* which led Merrill (1923) to synonymize the name *S. philippinensis* under *C. villosissima*. We were able to visit the type locality of *S. philippinensis* and we only saw the yellow colored variety, leading us to conclude that Kraenzlin (1913) might have seen a specimen of the new variety *C. villosissima* var. *flavovirens*. A similar color variation has been reported in another Philippine endemic, *C. hirtigera* H.J. Atkins & Cronk (Atkins & Cronk 2001), and we might discover similar variations through continued fieldwork in the country. *Cyrtandra villosissima* shares with *C. argentii* Olivar, H.J. Atkins & Muellner-Riehl, *C. ferruginea* Merr., and *C. hirtigera* H.J. Atkins & Cronk the



**Figure 2.** Distribution map of *Cyrtandra villosissima* varieties. Inset: Map of the Philippines and highlighted in red is the range of *C. villosissima*. Map drawn using QGIS software, applying Mercator projection.

character combination of an erect suffrutescent habit and large leaves that are slightly falcate and densely hirsute (Olivar et al. 2020). We provide a key below to distinguish between these species and the varieties of *C. villosissima*.

**Key to morphologically similar species and the two *C. villosissima* varieties, adapted from Olivar et al. (2020)**

1. Mature leaves anisophyllous (smaller leaves less than half the length of the larger leaves in a pair) ..... *C. ferruginea* Merr. (Merrill 1915)
- Mature leaves subequal ..... **2**
2. Indumentum white; inflorescences pendulous and pedunculate ..... *C. argentii* Olivar, H.J. Atkins & Muellner-Riehl (Olivar et al. 2020)
- Indumentum ferruginous; inflorescences erect and sub-sessile ..... **3**
3. Calyx fused for half or more of its length; lobes triangular ..... *C. hirtigera* H. J. Atkins & Cronk (Atkins & Cronk 2001)
- Calyx divided almost to the base, lobes linear ..... **4**
4. Inflorescences sub-sessile; corolla red ..... *C. villosissima* var. *villosissima*
- Inflorescences pedunculate; corolla pale yellow to yellow-green ..... *C. villosissima* var. *flavovirens* Olivar & Mazo var

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