

## A new species of *Malesherbia* (Passifloraceae Subfam. Malesherbioideae) from Peru

HAMILTON BELTRAN<sup>1\*</sup> & MAXIMILIAN WEIGEND<sup>2</sup>

<sup>1</sup>Museo de Historia Natural, Universidad Nacional Mayor de San Marcos. Av. Arenales 1256, Apartado 14-0434, Lima, Perú,  
Email: [hamiltonbeltran@yahoo.com](mailto:hamiltonbeltran@yahoo.com)

<sup>2</sup>Nees-Institut für Biodiversität der Pflanzen, Rheinische Friedrich-Wilhelms-Universität Bonn, Meckenheimer Allee 170, D-53115 Bonn, Germany.

\*corresponding author

### Abstract

*Malesherbia laraosensis* is described as a new species from the Department of Lima, Peru. The species is apparently narrowly endemic. The new species apparently belongs to *Malesherbia* sect. *Malesherbia* and is superficially similar to *M. splendens* and *M. scarlatiflora* in flower, but differs dramatically in habit—it is a very low-growing shrublet with branches ca. 15 cm tall, versus tall shrubs 1 m tall in the other two species. It is also characterized by obovate, dark green, adaxially subglabrous leaves (versus narrowly ovate-acuminate, densely pubescent and glandular in the other species). The new species brings the species total for Peruvian *Malesherbia* to 10.

**Key words:** Lima, Laraos, Andean, endemic

### Introducción

Ruiz & Pavón (1798:79) created the genus *Malesherbia* and named it after Lamoignon de Malesherbes, patron of the botanists in those times (Ricardi 1967). The genus is the only member of subfamily Malesherbioideae (Passifloraceae) (APGIII, 2009) and is endemic to southwestern South America. The most recent revision was published by Ricardi (1967), who recognized and illustrated a total of 27 species and 9 varieties, most of them from Chile. Since then, only a single new species has been described, from Chile (Muñoz-Schick & Pinto, 2003). Gengler & Crawford (2000) performed a study of the genetic diversity of four central Peruvian species and found very low indices of genetic diversity in the populations. Later, Gengler (2002) recognized only 24 species in the genus and hypothesized a late Miocene or early Pliocene origin for the genus. Gengler (2003) provided a morphological and molecular analysis of the genus, and subdivided it into five sections, a subdivision taken up by Kubitzki (2007). Currently, a total of 9 species are recognized for Peru, all of which are endemic. León (2006) categorized the Peruvian species according to their conservation status; according to the IUCN (2001) criteria seven species have to be considered as Endangered (EN) and two as Vulnerable (VU). None of the species are found in any of the Protected Areas.

*Malesherbia* is distributed in the central and southern Andes in Peru, Chile and Argentina, mostly in the lower parts of the western slopes on rocky and sandy soils, in arid and semi-arid habitats. In Peru the northern distribution limit is the Río Huaura valley in the Department of Lima. All species are found in Andean scrub communities or in the desert region at 100–3550 m asl., with the only exception of *Malesherbia arequipensis* Ricardi (1961: 5), which is also found in the Loma vegetation of southern Peru. Most species are narrowly endemic to small areas.

While, revising the herbarium specimens of *Malesherbia* in the Herbario San Marcos (USM), the new species here described was encountered amongst the unidentified specimens. This brings the total species number to 10 for Peru.

### Material and methods

In May 2010 one of us (HB) had the opportunity to visit the locality from where the specimen came and encountered the new species in the field. Herbarium specimens were prepared following the standard techniques (Cerrate 1969, Lot & Chiang 1986); additionally, leaves and flowers were preserved in AFA (Alcohol, formaldehyde, acetic acid) for morphological analysis. The description follows the terminology of Lindley (1951).

## Formal Taxonomy

*Malesherbia laraosensis* H. Beltrán & M. Weigend *spec. nov.* (Fig. 1)

**Type:**—PERU: Dept. Lima: Prov. Yauyos. District of Laraos. Quichao, 4 km from village, 12° 20' 37'' S, 075° 49' 09'' W, 3510 m, 18 May 2010, *Hamilton Beltrán 6885* (holotype: USM; isotypes: B, F, HUT, MO, UNAS, UPAO).

Caespitose shrublet, primary shoot short, basally ca. 13 mm wide, branches prostrate to decumbent, up to 15 cm long and basally 2–3 mm thick. *Leaves* alternate, lamina obovate to narrowly obovate, 10–30 mm long, 3–7 mm wide, apex rounded, base cuneate, margin subentire to irregularly serrate with 7–8 teeth on each side, strongly undulate, especially distally, adaxially dark green and subglabrous, abaxially densely sericeous, abaxially with primary and secondary veins elevated, with three pairs of secondary veins. *Inflorescences* simple, dense racemes 4–5 cm long. *Flowers* axillary, pedicels 9–12 mm long, sericeous. Bracts linear, 5–6 mm long and 2–3 mm wide, sericeous. Perianth tube cylindrical, gradually dilated towards the middle and narrowed towards the apex, 25–27 mm long and 4–5 mm wide near base, 8–11 mm wide in the middle and 6–7 mm wide at the apex, abaxially sericeous, trichomes up to 1 mm long, adaxially glabrous, green at base and yellowish red near the apex, with 10 greenish veins distally branched in three. Sepals 5, triangular-ovate, 5 mm long and 2–3 mm wide, pubescent on both sides, apically reddish, three-veined. Petals 5, ovate-elliptical, 3.5–4 mm long and 0.9 mm wide at base, 1.2 mm wide in the middle, apex acute, red, pubescent on both sides, venation pinnate. Corona membranaceous, 1.9 mm long, formed by five bidentate processes. Androgynophore 2 mm long, glabrous, and with apical disc-shaped dilation, 2–3 mm wide, hirsute. Stamens 5, 24–26 mm long, anthers exserted, filaments glabrous, distally tinged with red; anthers oblong, 2 mm long and 0.9–1.1 mm wide. Ovary globose, 2 mm long and wide, apically pilose, otherwise glabrous. Styles 3, 20 mm long, 4 mm wide, glabrous, apically tinged with red. Stigmas slightly bilobed and dilated, papillose. *Fruit* a capsule, 16 mm long, glabrous, opening with 3 acuminate and pubescent apical valves, seeds beige, numerous.

**Additional specimen examined (paratype):**—PERU: Dept. Lima: Prov. Yauyos. District of Alis. *Carlos Romero Carbajal s.n.* (USM).

**Notes:**—*Malesherbia laraosensis* is unique among Peruvian *Malesherbia* with its caespitose habit with very short branches (up to 15 cm long) and differs dramatically from all previously known Peruvian species with similar floral morphology, which are much larger (usually >50 cm tall) and branched mainly above. *Malesherbia arequipensis* is the only other species that is similarly small, but it is an annual or short-lived perennial with deeply and repeatedly pinnatisect leaves and white flowers. In floral colour and morphology *M. laraosensis* most closely resembles *M. splendens* Ricardi (1965: 6) and *M. scarlatiflora* Gilg (1913: 11), but both species are ca. 1 m tall, have long, ovate-acuminate, densely villous leaves, and have longer sepals than petals. Conversely, the leaves of *M. laraosensis* are obovate, abaxially sericeous and adaxially subglabrous, with only few teeth on both sides, and the sepals and petals are more or less the same size.

*Malesherbia scarlatiflora* is the only other species known from the area of the type collection of *M. laraosensis*. Based on phytogeography and morphology the new species appears to belong to *Malesherbia* sect. *Malesherbia*, a group centred in Central Peru.

**Distribution:**—The new species is so far only known from the type locality in Laraos, an area with little human intervention.

**Habitat and ecology:**—Soils are calcareous and vegetation is dominated by shrubs of *Baccharis* spp., *Columellia obovata* Ruiz & Pavón (1798:28), *Jungia schuerae* Harling (1992:16), *Fabiana fiebrigii* Arroyo (1976:50) and *Senecio larauiensis* H. Beltrán & A. Galán (1998:168), and herbaceous species, such as *Salvia oppositiflora* Ruiz & Pavón (1798:26).

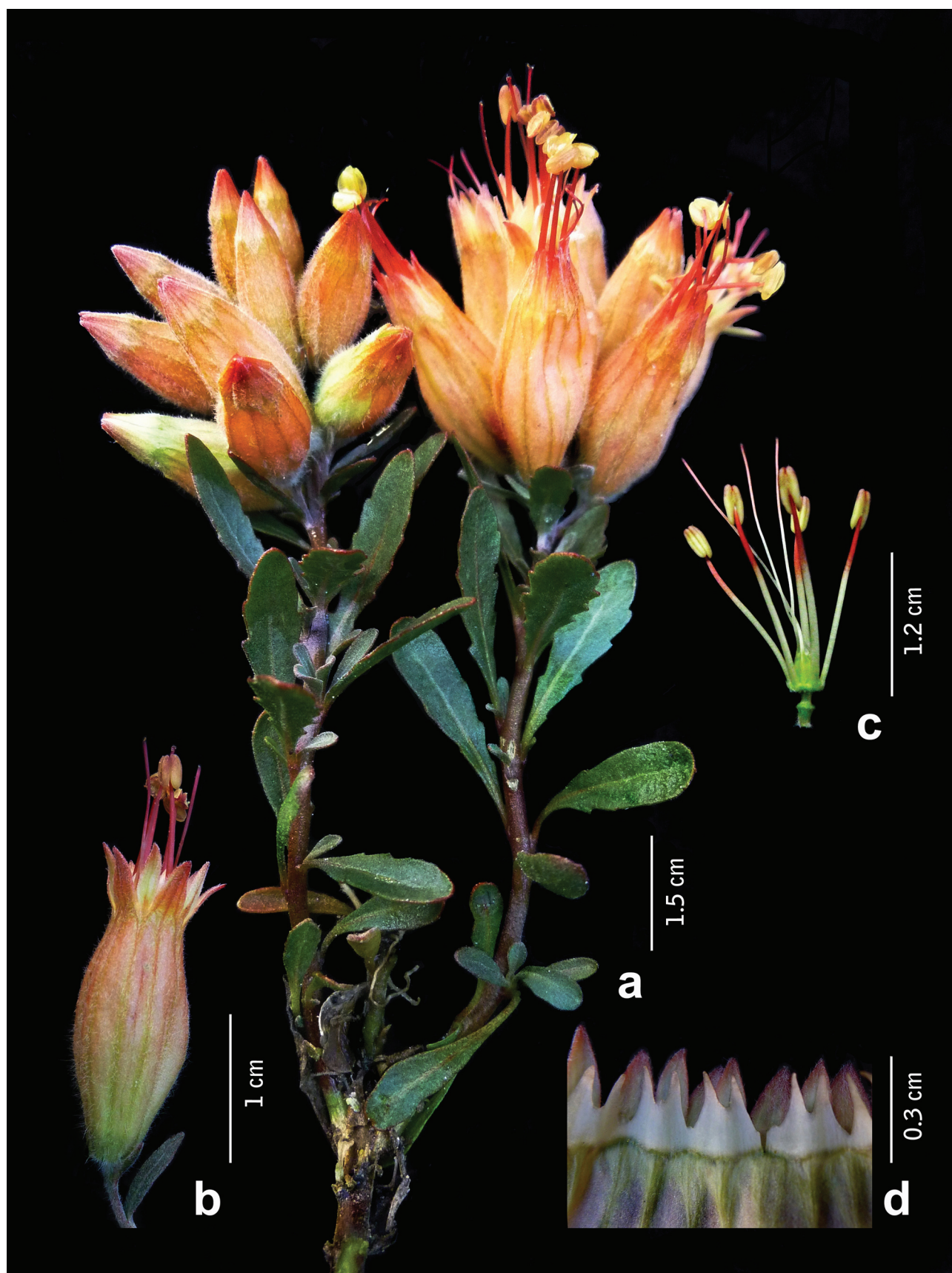
**Phenology:**—*Malesherbia laraosensis* flowers from May to July.

**Ethymology:**—The species name refers to the type locality in the Laraos District.

**Conservation status:**—According to the Red List criteria of IUCN (2001), the species should be included into the category “not evaluated” (NE), since it is only known from a single locality.

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**FIGURE 1.** *Malesherbia laraosensis*. **a.** Flowering branch; **b.** Flower; **c.** stamens and styles; **d.** Adaxial view of inside of perianth showing details of the corona. **a-d** from Beltrán 6885.

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