

*Axinaea carolinae-telleziae*  
(Melastomataceae) – another new species  
from Northern Peru.

*Axinaea carolinae-telleziae* (Melastomataceae) – Otra  
nueva especie del norte del Perú.



***Rainer W. Bussmann***

William L. Brown Center, Missouri Botanical Garden, PO Box 299, Saint Louis,  
MO 63166-0299, USA.*r*

*rainer.bussmann@mobot.org*

***Narel Y. Paniagua Z.***

Herbario Nacional de Bolivia, Instituto de Ecología-UMSA, Campus Universitario,  
Cota Cota Calle 27, Apdo. Postal 10077 correo central, La Paz, BOLIVIA.

## Abstract

A new Peruvian species of *Axinaea* (Melastomataceae) is described. *Axinaea carolinae-telleziae* is a small tree, endemic to the uppermost cloud forest zone in the northern Andean region of Peru. This region has been under-collected due to difficult access, and our previous expeditions indicate that it is highly diverse. The new species is only known from one individual at the type locality. Extensive expeditions in the wider region have allowed to find new populations of other rare *Axinaea* species, and it is to hope that more material of *Axinaea carolinae-telleziae* can be found in the future.

**Key words:** *Axinaea*, Endemism, Melastomataceae, Merianieae, montane forest, Peru.

## Resumen

Se describe una nueva especie peruana de *Axinaea* (Melastomataceae). *Axinaea carolinae-telleziae* es un pequeño árbol, endémico de la zona más alta del bosque nublado en la región norte de los Andes de Perú. Esta región es conocida por su gran diversidad, pero también es escasamente colectada debido al su difícil acceso. Esta especie nueva sólo se conoce de un individuo en la localidad tipo. Nuestras extensas expediciones en toda la región han permitido encontrar nuevas poblaciones de especies de *Axinaea* que se consideraban muy raras, por lo que se espera que se pueda encontrar más material de *Axinaea carolinae-telleziae* en el futuro.

**Palabras clave:** *Axinaea*, bosque montano, endemismo, Melastomataceae, Merianieae, Perú.

## Introduction

*Axinaea* (Merianieae, Melastomataceae) is a Neotropical genus including by now 43 species of small trees and shrubs, restricted to the Andes, growing mostly in humid cloud-forest at altitudes between 1200 and 3800 m (Wurdack 1980). *Axinaea costaricensis* Cogn., which grows in Costa Rica to Colombia and Venezuela is a notable exception (Wurdack 1973; 1980). *Axinaea* belongs to the tribe Merianieae, and is regarded as closely related to *Meriania* (Triana 1871; Cogniaux 1891; Wurdack 1973; 1980; Schulman & Hyvönen 2003). The latest published revision of the genus is still Eves (1936). A new and completed revision by Cotton (2003) has not yet been published.

The small area of Northern Peru and southern Ecuador, with 26 species, including three newly described ones (Bussmann *et al.*, 2010, Bussmann & Paniagua in press, Sagástegui *et al.*, 2010) has to be regarded a hotspot for *Axinaea* and other Merianieae.

*Axinaea carolina-telleziae* Bussmann & Paniagua sp. nov. (Figs. 1-2)

TYPE: PERU. **Amazonas Region**, Chachapoyas Province, Luya District, upper cloud forest and paramo along the road to Huayla Belen, 06°14'27"S, 078°02'25"W, 3261 m, 23 -VIII- 2012, fl, R.W. Bussmann, N.Y. Paniagua Zambrana, C. Vega 17241 (holotype HAO; isotypes MO, NY).

The species is most similar to *Axinaea crassinoda* Triana but is much smaller in all parts, apart from very large stipuliform flaps. Indumentum is 0.2-0.8 mm (vs. 1.4-1.7 mm), stipuliform flaps larger (4-5 mm long x 7-8 mm wide vs. 1-4 mm long), the inflorescence is much shorter, flowers are smaller, 1-1.5 cm wide, 8-10 mm long (vs. 10-28 mm long), Hypanthium cupuliform, 1.5-2.5 mm long (vs. cyathiform, 3-5 mm long), externally moderately furfuraceous, hairs as on pedicels. Petals magenta-neon blue with dark orange anthers (instead of pink with wine red anthers), filaments complanate, 3.5-4.2 mm long (vs. 4-7 mm), connective basally acute (vs. ellipsoidal), anthers 2.7-3.9 mm long, deep reddish-purple (vs. 3-5mm, wine-red), leaves much

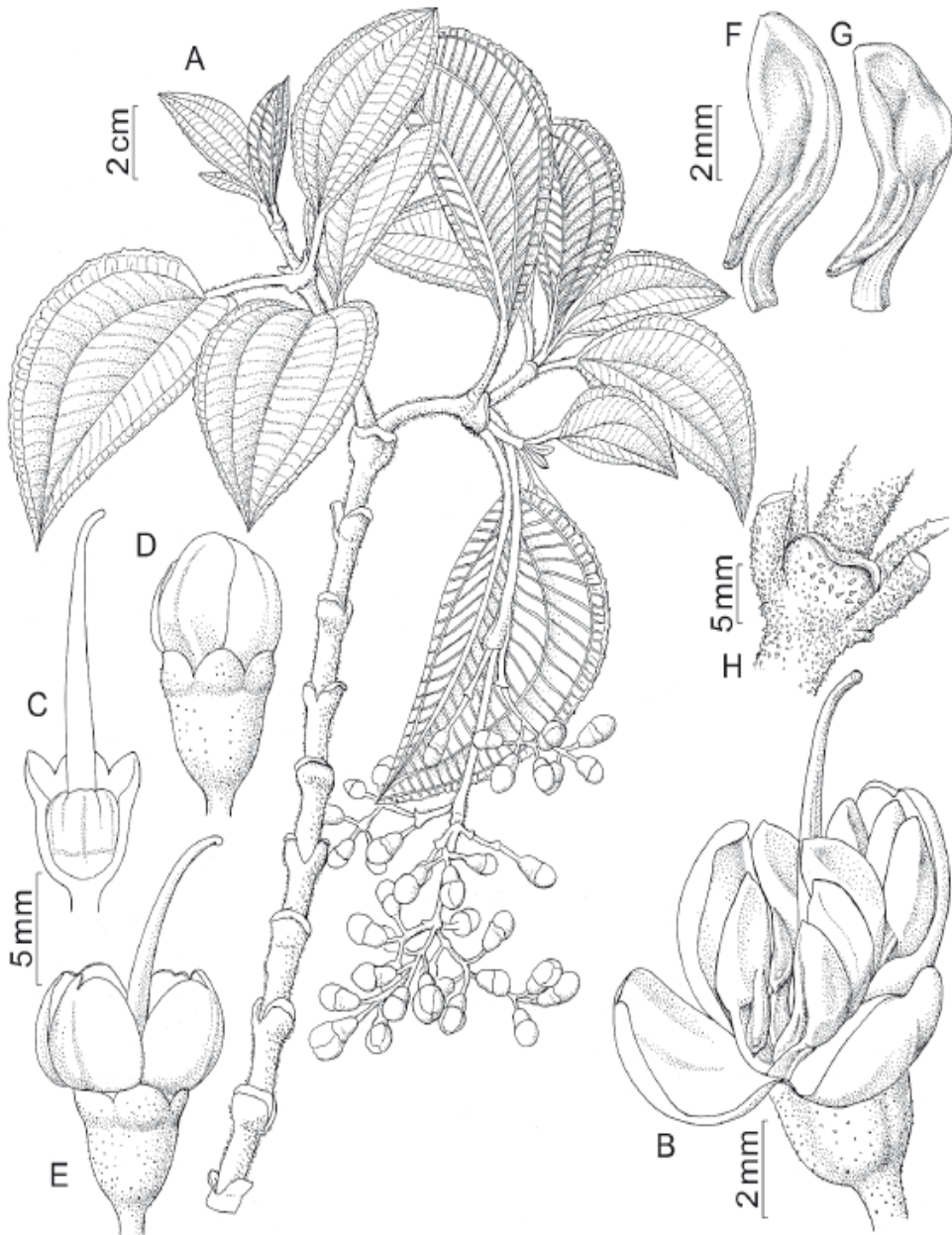


Fig. 1. *Axinaea carolinae-telleziae*: A. Habit; B. Mature flower; C. Hypanthium; D. Calyx; E. Opening flower; F/G. Anthers; H. Detail of large stipuliform flap.

smaller, ovate (vs. cordiform), coriaceous, rigid, 4-9 x 5-13 (vs. cordiform, 9.5-18 x 6.5-14 cm, auricles 5-7 mm (vs. 10-15 mm).

**Treelet**, 2-4 m tall. **Branches** slightly quadrangular becoming terete when old, densely furfuraceous throughout; hairs on branches short, thick, conic, densely roughened, 0.2-0.8 mm long (trichome type 19 of Wurdack, 1986); nodes slightly thickened, with well developed, 4-5 mm long x 7-8 mm wide, stipuliform flaps. **Leaves** erect; petiole 10-30 mm long, indumentum greenish-white densely papillous; lamina ovate, coriaceous, rigid, (4-)-7-(-9) x (5-)-12-(-13) cm, petiole length to lamina length 1:(2-)-6-(-15) lamina length to width (1.6-)-1.9-(-3.8):1; adaxially glabrous; abaxially furfuraceous along primary and secondary veins, hairs as on the branches, trichomes short, thick, conic, densely roughened; apex broadly acute; base slightly cordate without scutum, auricles 5-7 mm, slightly revolute abaxially; margins shallowly denticulate, weakly revolute. Venation basal, 7-nerved, including smaller marginal nerves, immature leaves 5-nerved; secondary nerves prominent abaxially, parallel, 1.5-3 mm apart.

Both, *Axinaea carolinae-telleziae* and *Axinaea crassinoda* were found growing side by side in the same area. Given the exactly same edaphic and climatological conditions, and the absence of intermediate forms, it is evident that both are distinct species sharing the same environment.

### Distribution and conservation status

*Axinaea carolinae-telleziae* is known only from the type locality in the Peruvian region San Martín, Province Luya, District Conilla-Cohechan on the eastern slopes of the Northern Peruvian Andes. The species must be regarded as critically endangered (CR A3B2ab(i,iii,iv)) according to IUCN

(2013) because it is known only from a restricted area of less than 10 km<sup>2</sup> and the whole population is outside protected areas.

### Etymology

*Axinaea carolinae-telleziae* is named after Carolina Tellez, to honor her lifelong dedication to investigate and conserve the flora of Northern Peru.

### Conservation status of other species of *Axinaea* in northern Peru

The mountain ranges of Northern Peru are difficult to access, and the collection history clearly reflects this, with many species only known from their type localities or close-by collections. In addition, many species seem to have very distinct flowering periods. Melastomataceae in general, and *Axinaea* in particular are no exception. Our expeditions since 2008 have covered a wide range of areas in Northern Peru, during different seasons. Species deemed rare in Cotton (2003), like *Axinaea crassinoda* Triana, could be found in essentially every valley of the region, and are in fact quite common, but are rarely found flowering. *Axinaea mertensioides* Wurdack, previously only known from the type collection, could now also be confirmed about 50 km south of the original area, and was quite common along small streams, and *Axinaea fernando-cabiesii* Bussmann, Gruhn & Glenn could also be confirmed from various new locations.

### Acknowledgements

The study was financed through funds from William L. Brown Center at Missouri Botanical Garden. We gratefully acknowledge the tireless help of Ing. Carlos Vega Ocaña, INBIAPAERU, with the collection of material. We thank Barbara Alongi for the line drawings.



**Fig. 2.** *Axinaea carolinae-telleziae*. A. Habit; B. Inflorescence; C. Flowers; D. Leaf underside; E. Upper side of leaf; F. Stipuliform flap.

### Literature cited

- Bussmann, R. W.; J. Gruhn & A Glenn.** 2010. *Axinaea fernando-cabiesii* and *A. reginae* spp. nov. (Melastomataceae) from upper Amazonia of Peru, with notes on the conservation status of *A. flava*. *Nordic J. Bot.* 28: 518-522.
- Bussmann, R. W. & N. Paniagua Zambrana.** in press. *Axinaea ninakurorum* (Melastomataceae) – a new species from the northern Peruvian Merianieae hotspot. Arnaldoa.
- Cogniaux, A.** 1891. Melastomataceae. *In*: A.C. de Candolle ed. *Monogr. Phan.* 7: 1-1256.
- Cotton, E.** 2003. A taxonomic revision of the genus *Axinaea* Ruiz & Pav. (Melastomataceae). M.Sc. thesis, Department of Systematic Botany, University of Aarhus, Denmark, pp. 1-160 (unpublished).
- Eves, D. S.** 1936. A revision of the genus *Axinaea* (Melastomataceae). *Bull. Torrey Bot. Club* 63: 211-226.
- IUCN Standards and Petitions Subcommittee.** 2013. Guidelines for Using the IUCN RedList Categories and Criteria. Version 10. Prepared by the Standards and Petitions Subcommittee. Downloadable from <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>.
- Sagástegui, A.; S. J. Arroyo & E. F. Rodríguez.** 2010. Una nueva especie de *Axinaea* (Melastomataceae: Merianieae) del Norte de Perú. *Rev. Per. Biol.* 17(2): 145-149.
- Schulman, L. & J. Hyvöne.** 2003. A cladistic analysis of *Adelobotrys* (Melastomataceae) based on morphology, with notes on generic limits within the tribe Merianieae. *Syst. Bot.* 28: 738–756.
- Triana, J.** 1871. Les Melastomataces. *Trans. Linn. Soc.* 28: 1-188.
- Wurdack, J. J.** 1973: Melastomataceae. - *In*: Lasser T. ed. *Flora de Venezuela* 8: 1-819.
- Wurdack, J. J.** 1980. Melastomataceae. - *In*: Harling, G. & B. Sparre (eds.). *Flora of Ecuador* 13: 1-403.
- Wurdack, J. J.** 1986. Atlas of hairs for Neotropical Melastomataceae. *Smiths. Contr. Bot.* 63: 1–80.