

Psittacanthus longirectus (Loranthaceae), a new showy species from Colombia

Psittacanthus longirectus (Loranthaceae), una llamativa especie nueva de Colombia

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Abstract

We describe *Psittacanthus longirectus* (Loranthaceae), a species so far only known from Antioquia (Colombia) and discuss the taxonomic affinities of the new species with *P. acinarius* and *P. cyclophyllus*. *Psittacanthus longirectus* is characterized by having cordate leaves, erect branches, and terminal inflorescences.

Key words: Andean flora, Colombian flora, Neotropical mistletoes, Santalales, taxonomy

Resumen

Se describe *Psittacanthus longirectus* (Loranthaceae), una especie hasta ahora recolectada solo en Antioquia (Colombia) y se discuten sus afinidades taxonómicas con respecto a *P. acinarius* y *P. cyclophyllus*. *Psittacanthus longirectus* se caracteriza por poseer las hojas con base cordada, ramas erectas y la inflorescencia terminal.

Palabras clave: flora andina, flora colombiana, hemi parasitas neotropicales, Santalales, taxonomía.

INTRODUCTION

Psittacanthus is the most diversified genus of Loranthaceae in America, with 119 species (Kuijt 2009). The distribution of the genus is the greatest in terms of latitudinal and altitudinal ranges, as it is found from Baja California (Mexico) and the Caribbean Islands to northern Argentina. Colombia and Brazil are the countries with the largest number of species of this genus (Kuijt 2009). The taxonomy of the genus has improved in terms of the description of a considerable number of new species (Kuijt 2009). Kuijt (2009) described 51 new taxa of the 119 currently recognized. The limited knowledge of most species is probably due to the scarcity of collections, as they are hemiparasites, usually at the upper branches of large trees, which prevent proper observation and collections. *Psittacanthus* is characterized by the presence of bulky haustorial connections, decussate, alternate, or whorled leaves, terminal or axillary raceme formed by long, narrow and showy (red, yellow, green, or pink showy) flowers, small uniseminate berry and seeds occasionally multicots. Within the Loranthaceae, *Psittacanthus* is similar to

Aetanthus and *Tristerix*. It differs from *Aetanthus* by having dorsifixed and versatile anthers (versus basifixed and acuminate anthers in *Aetanthus* (Eichler 1868)) and from *Tristerix* by its dyadic or triadic inflorescences (Kuijt 1988).

We propose here a new species for the genus *Psittacanthus* and discuss the taxonomic status of the new species with respect to some sympatric species and revisited some pertinent specimens cited by Kuijt (2009) in his last monograph for this genus.

MATERIAL AND METHODS

Specimens housed in the herbaria Herbario Universidad de Antioquia (HUA; Medellín, Colombia), Missouri Botanical Garden (MO; Missouri, U. S. A.), and University of Victoria Herbarium (UVIC; Victoria, Canada), that were carefully examined. Morphological characters were obtained from selected specimens. In addition, botanical explorations were conducted in high mountain forests of the municipalities of La Unión and Urrao (Antioquia,

Received: January 2014; accepted: May 2014.

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Colombia). Relevant type specimens and original descriptions of *Psittacanthus* were also consulted and compared with the material collected by the authors and additional specimens from HUA and MO.

RESULTS

Key for the species *Psittacanthus longirectus* and the morphologically similar or sympatric species

- 1. Inflorescences axillary and pendent:.....2
- 1'. Inflorescences terminal and erect3
- 2. Leaf base acute *P. dilatatus* A. C. Sm.
- 2'. Leaf base non acute *P. cyclophyllus* Kuijt
- 3. Leaf base cordate, flowers yellow-green or reddish.....
..... *P. longirectus* Roldán & Alzate
- 3'. Leaf base non cordate, flowers yellow-green.....
..... *P. acinarius* (Mart.) Mart.

Psittacanthus longirectus

Roldán & Alzate, sp. nov.
Figures 1, 2

TYPE: COLOMBIA: Antioquia: Municipio de Urrao, camino vereda El Chuscal, antes de El Quince, 2600-2800 m, 21 Nov 1988 (fl.), *F. Roldán, G. MacPherson & J. Betancur 1155* (holotype, HUA; isotypes MO, UVIC).

Plantae erecta, caule terete, usque 3 m longo, internodia 5-10 cm longa. Folia variabilis 9.5-30.8 x 7.2-19 cm, base cordate, color canens. Inflorescentia terminalis ex triadibus. Floribus erectis, perianthii caeruleus ruber, 8-10 cm longis. Embryo cotyledonibus pentabus ad hexabus.

Hemiparasite shrub, up to 3 m high, glabrous with branches erect and loose; stems terete, internodes 5-10 cm long, with a smooth bark; haustorium massive. Leaves opposite or verticillate, petiole 7-15 mm long, 4-9 mm in diameter, convex on both sides; lamina coriaceous, normally asymmetrical, 9.5-33.8 x 6.8-26.2 cm or larger, base truncated or cordate, asymmetric, apex rounded, margin entire or irregular, callose, secondary veins 7-15, pinnate, prominent in both surfaces. Inflorescences terminal, formed by 1-4 racemes, triads distics or spirally arranged,

rachis up to 7 cm long, the peduncle of each triad up to 18 mm, subtended by inconspicuous bracteoles. Flowers hermaphrodite, erect to 92 mm long, pedicel 20 mm long, cupulated, cupule horizontal, margin usually entire, sometimes lacerated, ovary and calyculus to 14 mm long and 7 mm diam, cylindrical, with conical base, calyculus to 6 mm, strongly lacerate, corolla tubular, gradually thickened towards the apex, apex rounded, to 7.2 cm, formed by 6 free petals, fleshy, up to 1 mm wide, yellow-green or reddish-green; stamens epipetalous, inserted ca. 36 mm from the base, 20-25 mm long, dimorphic, filaments free, 14-19 mm long, 3-channeled and 3 aristate, anthers dorsifixed versatile, 12 mm long and 3.5 mm diam, arranged in two levels, inserted in the middle, connective blunt, longitudinally dehiscent; style straight, 55-75 mm long, channeled, stigma capitate, bilocular, with granular surface. Fruit ellipsoid, 20-30 mm long, 14-18 mm diam, black when mature. Seed ellipsoid, 20 x 7 mm, with 5-6 cotyledons.

Etymology. The specific epithet makes reference to the erect habit and the long stems of this species.

Distribution and habitat. This species has so far been in the eastern plateau of the Central Cordillera in Antioquia, NW Colombia, between 2500-3000 m, and in the Paramo of Frontino, at the Western Cordillera, growing with *Quercus humboldtii*. The punctual and restricted distribution, reported for *P. longirectus*, is likely due to low sampling of the genus in the Andes. This species is partially sympatric with *Psittacanthus dilatatus*.

Phenology. The new species has been collected in flower and fruit during January, February, July, September, and October.

IUCN Red List category. Since only three populations and less than ten mature individuals of *Psittacanthus longirectus* were found, this species is preliminary considered Critically Endangered (CR) according to criterion D (population less than 50 mature individuals) of the IUCN Red List Criteria (IUCN 2001).

Paratypes. COLOMBIA: Antioquia: La Unión, cerro Las Peñas, 2550-2660 m, 11 sep 2007, (fl, fr), *Alzate 3161* (HUA); Urrao, Camino al paramo del Sol al abandonar los potreros, 2700 m, 5 ene 2010, (fl), *Alzate 3392* (HUA); between Páramo de Frontino and finca La Granada, below El Quince 2500-3500 m, 4 mar 1989, (fl, fr), *J. MacDougal, F. Roldán, & J. Betancur 4578* (HUA, MO, UVIC).

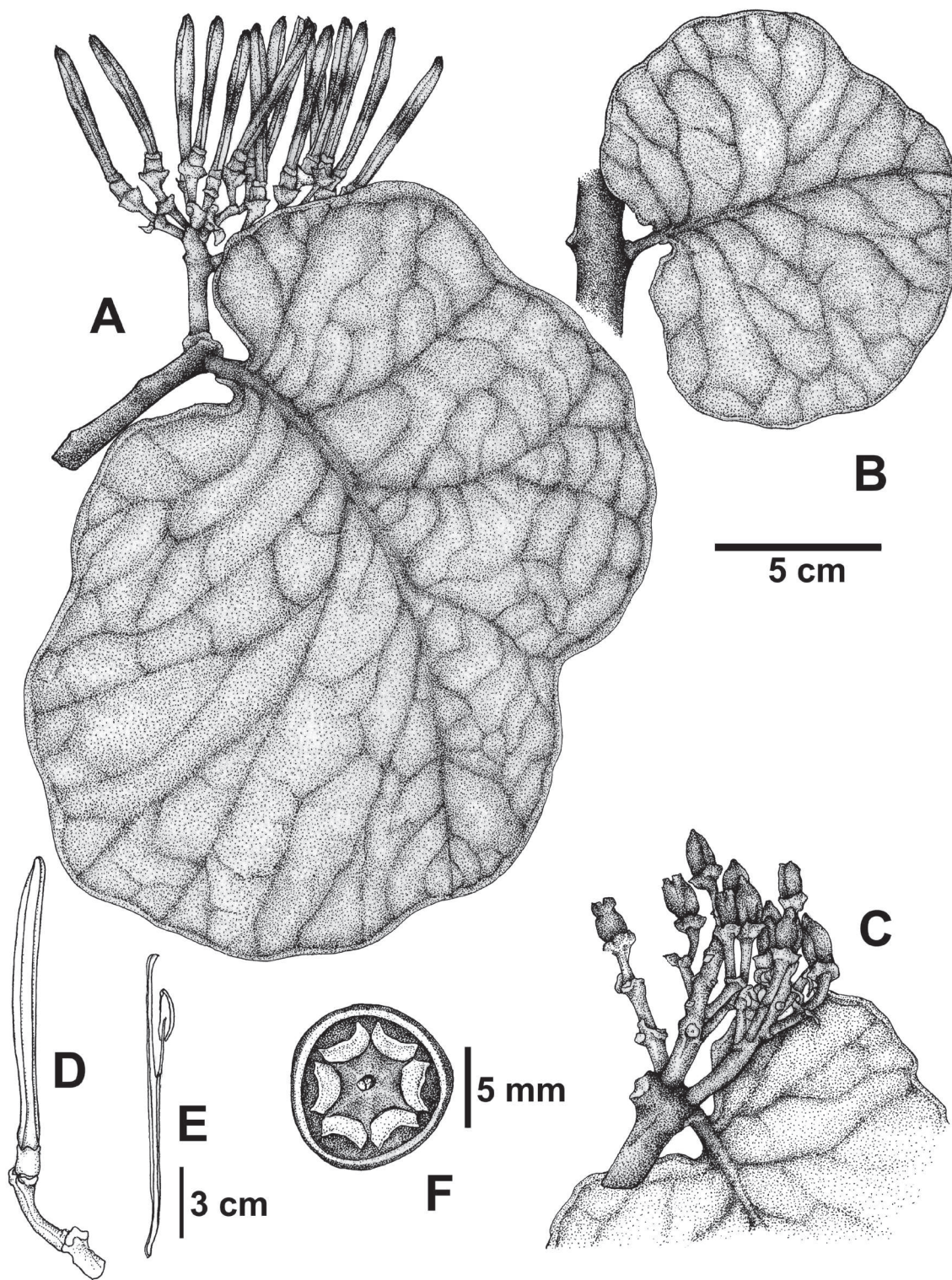


Figure 1. *Psittacanthus longirectus* Roldán & Alzate. A. Flowering branch; B. Leaf showing pinnate venation; C. Fruiting branch; D. Longitudinal view of the flower; E. Stamen and petal; F. Transverse section of the ovary



Figure 2. *Psittacanthus longirectus* Roldán & Alzate. Plant specimen (from Urrao, Antioquia, Colombia), showing the erect habit, the large and erect leaves, and reddish-green flowers

DISCUSSION

Species boundaries in *Psittacanthus* are extremely complex as stated by Kuijt (2009) and sometimes, morphological characters are difficult to codify. Specimens of *Psittacanthus longirectus* are often confused with *P. acinarius* (Mart.) Mart. or *P. cyclophyllus* Kuijt, generating confusion in herbarium collections.

Psittacanthus acinarius has leaves with a non-cordate base, pendulous branches, and green flowers, while *P. longirectus* leaves have a cordate base, erect branches, and colorful flowers (red and yellow). *Psittacanthus cyclophyllus* has axillary and pendulous inflorescences, whereas *P. longirectus* develop terminal inflorescences and erect flowers.

ACKNOWLEDGMENTS

We thank to Job Kuijt (UVIC) for useful comments on the manuscript and Gloria Mora (HUA) for preparing the illustrations. This work is dedicated to the memory of Mrs. Delia Guarín, mother of the co-author of this publication.

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