

TRICHOCENTRUM LOYOLICUM, A NEW SPECIES IN THE GENUS TRICHOCENTRUM S. STR. (ORCHIDACEAE: ONCIDIINAE)

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Abstract. A new species of *Trichocentrum* (Orchidaceae: Oncidiinae) from southeastern Ecuador, *T. loyolicum*, is described and illustrated. *Trichocentrum loyolicum* is compared with *T. pulchrum*, from which it mainly differs by the smaller flowers, the shorter spur, the basal keels curved and convergent at the apex, and the reduced column wings. The generic circumscription of *Trichocentrum* is discussed.

Keywords: Orchidaceae, Oncidiinae, *Trichocentrum loyolicum*, new species, Ecuador

The generic circumscription of the genus *Trichocentrum* Poepp. & Endl. was redefined by Williams et al. (2001) on the basis of parsimony analyses of combined data from four DNA sequence regions. The trees resulting from the analysis show a strongly supported clade including members of *Trichocentrum* s. str., together with species of *Oncidium* sect. *Cebolletae* Lindl. ("rat-tail" Oncidiiums), *O.* sect. *Plurituberculata* Garay & Stacy ("mule-ear" Oncidiiums), and two species of *O.* subgen. *Cyrtochilum* (Kunth) Garay & Stacy. Taking into account the similarities in vegetative architecture and the low chromosome numbers found throughout the "*Trichocentrum* clade" ($2n = 24-44$), Williams et al. (2001) favored the taxonomic treatment of the whole group as the same genus, interpreting the differences in floral structure as a mere response to different pollination syndromes (i.e., by Euglossine bees searching for nectar or scent in *Trichocentrum* s. str., by deceit, and/or by oil gathering bees in the other members of the clade). Since *Trichocentrum* (1836) has priority over the other generic names available for the group, the "rat-tail" and "mule-ear" Oncidiiums were transferred to the former genus.

The "mule-ear" species were described as the genus *Lophiaris* by Rafinesque in as early as 1838 (typified by *L. fragrans* Raf. = *L. lanceana* (Lindl.) Braem; Braem, 1993) and "*Oncidium*"

ascendens (a "rat-tail" species) was described by H. G. Reichenbach as *Cohnia quekettoides* in 1852, and afterwards replaced with *Cohniella* by Pfitzer in 1889 (typified again by *C. quekettoides* (Rchb.f.) Pfitz. = *C. ascendens* (Lindl.) Christenson). The groups of the clade differ in plant habit, foliar anatomy (Sandoval-Zapotitla and Terrazas, 2001), inflorescence structure, gross floral morphology, and pollinarium shape. For these reasons, a broadly circumscribed *Trichocentrum* has not been widely accepted (i.e., Dodson, 2004; Pupulin and Carnevali, 2005; Romero-González, 2005; Ossenbach et al., 2007).

Pupulin (1995) revised *Trichocentrum* s. str. and recognized 7 natural species groups. Among them, the *Trichocentrum pulchrum* group was characterized by the presence of triquetrous ovaries (a unique feature within the genus), thickened keels arising from the base of the disc, and single-flowered, rather than successive, inflorescences. The geographic distribution of the group is limited to the Andes, from Venezuela and Colombia to Peru. In a realignment of the taxa close to *Trichocentrum pulchrum*, Pupulin (1998) included into the group four species, namely *T. longicalcaratum* Rolfe (syn. *T. brandtia* Kraenzl.), *T. pulchrum* Poepp. & Endl., *T. viridulum* Pupulin, and *T. obcordilabium* Pupulin. Three of these taxa have been so far recorded from Ecuador (Dodson, 2004): the widespread

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T. pulchrum; *T. longicalcaratum* originally described from Colombia; and the endemic *T. obcordilabium*.

During a preliminary revision of the *Trichocentrum* specimens grown at the Ángel Andreetta Research center on Andean Orchids (with the purpose of a systematic revision of the genus for the flora of Ecuador), a new species closely related to *T. pulchrum* was discovered. It is described and illustrated herein.

Trichocentrum loyolicum Pupulin, Karremans & G. Merino, *sp. nov.* TYPE: ECUADOR. Zamora-Chinchipec: Valladolid, Loyola, 1000–1200 m, collected by G. Merino, 2002, flowered in cultivation in the collection of Ecuagenera at Gualaceo, 3 November 2007, A. Karremans 2133 (Holotype: QCNE). Fig. 1.

Species Trichocentro pulchro Poepp. et Endl. *affinis, a quo floribus minoribus, longitudine calcaris laminae labelli subaequalis, carinis in basi labelli incrassatis recurvis apicibus convergentibus, alis columnae perparvae recedit.*

Plant epiphytic, pseudobulbous, caespitose, erect-patent, with a short rhizome. *Roots* flexuous, thick, produced on the rhizome under the attachment of the pseudobulbs. *Pseudobulbs* nearly obsolete, cylindrical-orbicular, to 3.5 mm long, about 3 mm wide, covered by 3 papyraceous sheaths, monophyllous. *Leaf* fleshy, sessile, elliptic to elliptic-oblong, to 5.0 cm long, 2.2 cm wide, acute to acute-acuminate, green, spotted with scattered small purple dots. *Inflorescence* a raceme shorter than leaves, 1-flowered; peduncle terete, to 1.7 cm long. *Floral bracts* ovate, acute, to 8 mm long, 8 mm wide. *Pedicellate ovary* linear-subclavate, triquetrous, to about 2 cm long including the pedicel. *Flowers* not spreading completely; sepals and petals yellowish green, minutely spotted reddish brown, the lip yellowish green, with minute red-brown spots and a whitish

green margin, the callus yellow, with reddish spots. *Dorsal sepal* widely elliptic, concave, dorsally carinate, acute, obscurely apiculate, 1.3 cm long, 0.9 cm wide. *Lateral sepals* obliquely elliptic, dorsally carinate, abruptly acute, 1.3 cm long, 0.6 cm wide. *Petals* ovate to obovate, rounded, 1.3 cm long, 0.8–0.9 cm wide. *Lip* adnate to the base of the column, obovate, rounded at apex, with slightly undulate margins, 1.6 cm long, 0.8–1.0 cm wide, extended at the base into a slender, flexuous spur, about 1.8 cm long; callus formed by 2 thickened, arcuate, converging, papillose keels. *Column* short, stout, about 6–7 mm long, with a pair of very short, obcuneate-dolabriform, lacerate wings. *Anther cap* cucullate, elliptic, densely papillose, 2-celled. *Pollinia* 2, pyriform, complanate, on a triangular stipe; viscidium elliptic, brown.

Distribution: known only from the type locality in southeastern Ecuador.

Etymology: named from Loyola, a small village in the Ecuadorian “oriente” close to the border with Peru, where the species was collected.

Ecology: epiphytic in shade on the lower branches of trees in premontane rain forest at 1000–1200 m. In the area of Valladolid, in the province of Zamora-Chinchipec in the Ecuadorian Amazon, *T. loyolicum* is sympatric with *T. pulchrum*.

Phenology: in cultivation in Ecuador, flowers between September and November.

Conservation status: data deficient.

Among the species of the *Trichocentrum pulchrum* group, *T. loyolicum* is most similar to *T. pulchrum*, from which it differs by the smaller flowers (sepals < 1.5 vs. > 1.7 cm), the spur length subequal to the lip blade (ratio blade length: spur length = 1:1 vs. 1.0:1.5), the basal keels curved and convergent at the apex (vs. incurved, divergent), and the reduced column wings (maximum length = 1 mm vs. 3 mm).

ARTIFICIAL KEY TO THE SPECIES OF THE *TRICHOCENTRUM PULCHRUM* GROUP

- 1a. Spur more than twice as long as the lip *T. longicalcaratum*
 1b. Spur less than twice as long as the lip 2
 2a. Disk of the lip with 4 keels; lip obcordate *T. obcordilabium*
 2b. Disk of the lip with 2 keels; lip obovate 3
 3a. Keels of the lip glabrous or obscurely puberulent; floral segments greenish white, never with purple spots or blotches *T. viridulum*
 3b. Keels of the lip papillose; floral segments marked with purple spots and blotches 4
 4a. Spur 1.5 times longer than the blade of the lip; keels of the lip divergent at apex; column wings 3 mm long *T. pulchrum*
 4b. Spur as long as the blade of the lip; keels of the lip incurved, convergent at apex; column wings 1 mm long *T. loyolicum*

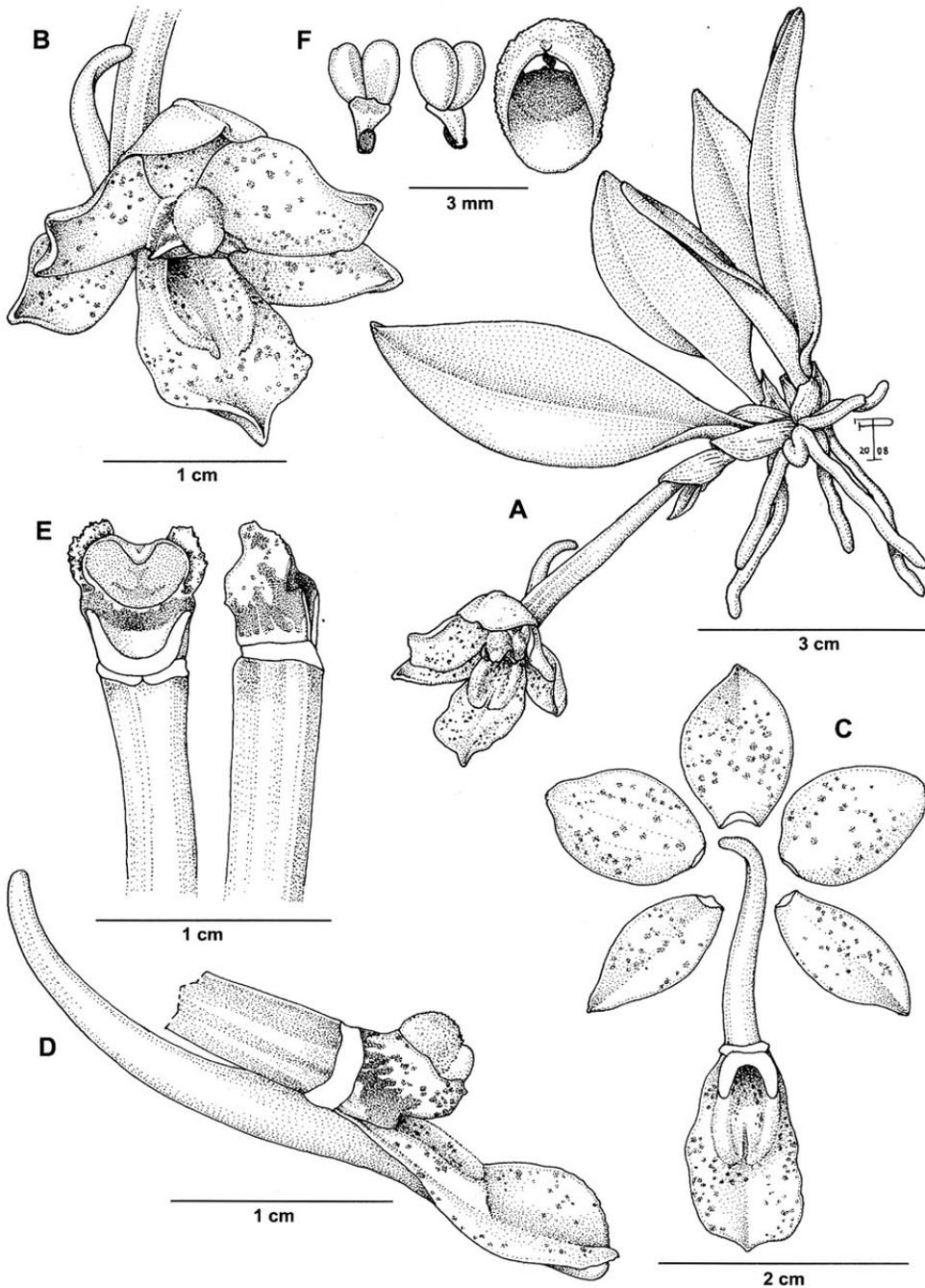


FIGURE 1. *Trichocentrum loyolicum* Pupulin, Karremans & G. Merino. A, habit; B, flower; C, dissected perianth; D, column and lip, lateral view; E, column, ventral and lateral views; F, pollinarium (two views) and anther cap. Drawn by F. Pupulin from the holotype.

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