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MASDEVALLIA SOTOANA (ORCHIDACEAE: PLEUROTHALLIDINAE), A NEW SPECIES FROM ECUADOR

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ABSTRACT: A new species of *Masdevallia, M. sotoana*, is described and illustrated from Ecuador. The new species is similar to *M. strobelii*, from which is mainly distinguished by the smaller size of the plant and flowers, the petals provided with a small basal teeth, the narrowly lanceolate lip abruptly reflexed at apex and the much shorter column foot.

RESUMEN: Se describe e ilustra una nueva especie de *Masdevallia* de Ecuador, *M. sotoana*. La nueva especie es similar a *M. strobelii*, de la cual se distingue especialmente por el tamaño menor de la planta y flores, los pétalos provistos con un pequeño diente basal, el labelo estrechamente lanceolado y abruptamente reflexo en el ápice, así como el pie de la columna mucho mas corto.

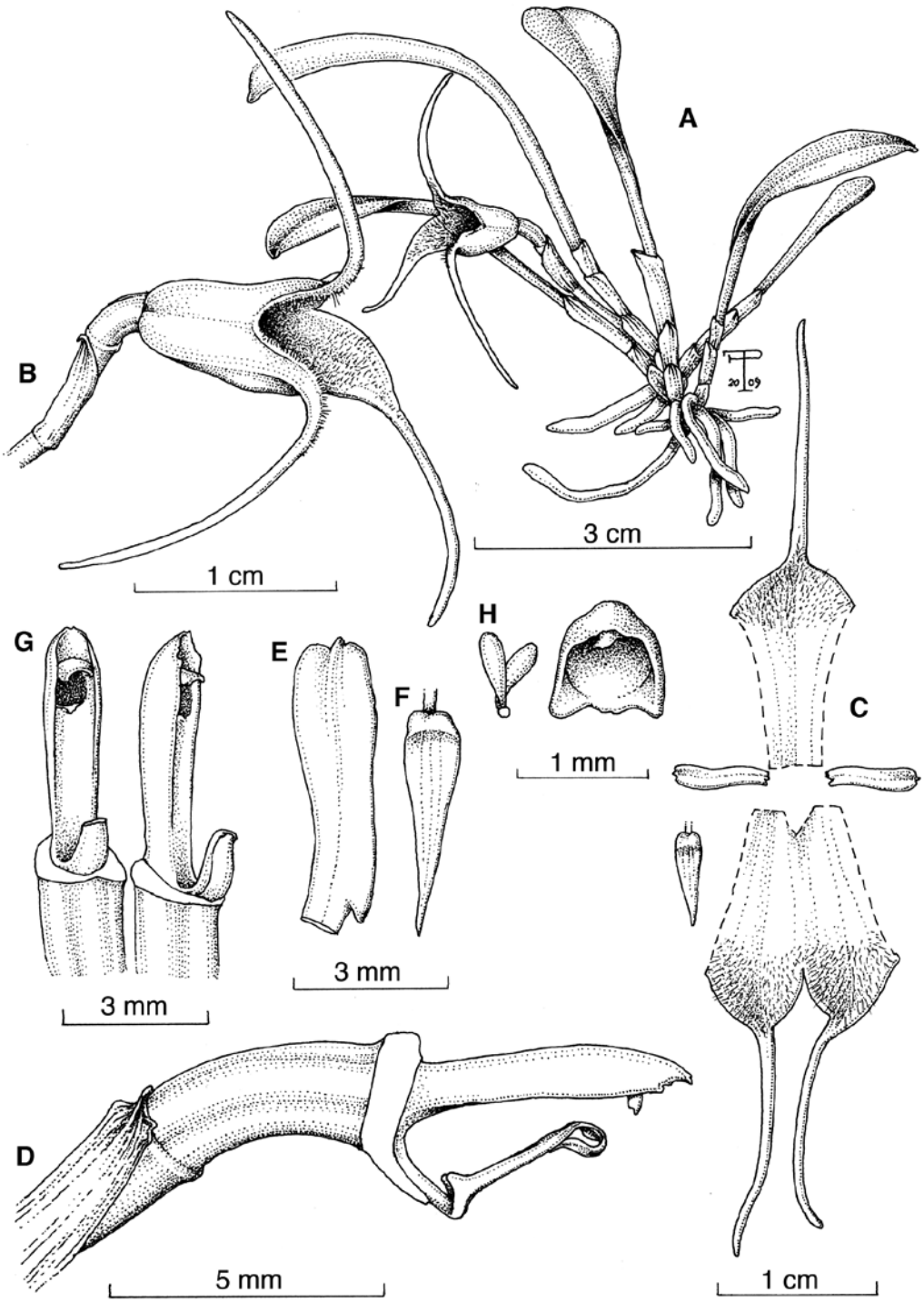
KEY WORDS: Orchidaeae, Malaxideae, *Crossoglossa*, *C. sotoana*, Costa Rica, new species

The genus *Masdevallia* Ruiz & Pav. includes today some 400 recognized species (Pridgeon, 2005) and more than 1100 published names (Tropicos, 2009). Although the genus has a long taxonomic history, with many species already known and cultivated during the 19th Century, the diversity of *Masdevallia* was substantially revealed in the last decades of the last Century, with a record of new descriptions between 1978 and 1988, when 265 *Masdevallia* names were proposed (references in Luer 1983—1988, 1996—2002, 1986a, 1986b, 2000a, 2000b, 2000c, 2001a, 2002, 2003). In the course of the actual decade, new species of *Masdevallia* appeared at a constant rate until 2005 (Königer 2000, 2001, 2003, Königer & Sijm 2003; Luer 2001b, 2001c, 2001d, 2002, 2004, 2005, Luer & Vásquez 2005, Ortíz 2004, 2005). Fewer taxa, however, have been published in the last few years (i.e., Luer & Dalström 2006, Wolff & Gruss 2007, Valenzuela 2008), with an average of only six new species per year since 2005 (compared with more than 14 species/year between 2000 and 2005). This may be in part the result of increasing difficulties in obtaining plant material from tropical countries, due to the enforcement of controls on wild plants trade, which particularly affect the interchange of samples for scientific study. On the other side, it is likely that the big effort made by Luer and his co-workers in the last 30 years to illustrate the diversity of *Masdevallia* is approaching completeness, significantly reducing the number of new findings in this group of plants.

During the process of reviewing the taxonomic identity of the vast *Masdevallia* collection at Ecuagenera, to be documented and incorporated as scientific reference in the living orchid collection of the Andean Orchid Research Center (CIOA, for its acronym in Spanish), University Alfredo Pérez Guerrero, and in the related databases, we found a number of taxa that do not fit well in any of the previously described species. The new species proposed here has apparently no close relatives, with the exception of *M. strobelii* Sweet & Garay, and we confidently described it as:

Masdevallia sotoana H.Medina & Pupulin, *sp. nov*.
TYPE: Ecuador. Zamora-Chinchipe: near The Tambo, 1800 m, November 1993, flowered in cultivation in the collection of Ecuagenera at Gualaceo, accesión No. 002293, 14 Oct. 2009, *H. Medina 72* (holotype, QCNE). Fig. 1—2.

Masdevalliae strobelii Sweet et Garay similis, foliis minoribus acutis, floribus multo minoribus, sepalibus



Masdevallia sotoana Pupulin & H.Medina. A — Habit. B — Flower. C — Dissected perianth. D — Pedicel, ovary, column and lip, lateral view. E — Left petal. F — Lip, spread. G — Column, ventral and three quarters views. H — Pollinarium and anther cap. Drawn by F. Pupulin from the holotype.

trichomatibus parvibus ornatis, petalis lineari-oblongis dente basali perparvo instructis, labello anguste lanceolato acuminato, apice abrupte reflexo, pede columnae multo breviore recedit.

Epiphytic, caespitose, erect *herb*, to 7 cm tall. *Roots* filiform, flexuous, ca. 1 mm in diameter. *Stems* (ramicauls) shorter than the leaf, erect, *ca*. 5 mm long, concealed by 2—3 tubular, loose, scarious sheaths, 3—8 mm long. *Leaves* petiolate, the blade elliptic, acute, minutely tridenticulate, green, the base of the petiole darker, 2.8—3.5 x 1.0—1.2 cm; petiole conduplicate, to 2.4 cm long. *Inflorescence* single-flowered, erect, slender, terete, produced laterally from the apex of the stem, to 3.5 cm long. *Floral bract* tubular-lanceolate, amplectent, glumaceous when young, becoming dry-papyraceous with age, 6 mm long. *Pedicel* terete, to 6 mm long. *Ovary* articulated with the pedicel, terete, glabrous, 4 mm long. *Flowers* forming a sepaline cup and apically spreading into long tails, white, flushed orange-yellow toward the base, the apical tails yellow, the petals, the lip and the column white. *Sepals* united to form a tube, ventrally slightly gibbous, minutely papillose-hirsute toward the apex of the blade, 3-nerved, abaxially carinate along the midnerve, 1.4 cm long, each 6 mm wide, basally connate for *ca* 1.1 cm, the free portion semi-rounded to trasnversely elliptic, extending at apex into a narrow, filiform tail 1.5 cm long. *Petals* linear-oblong, slightly sygmoid, minutely tri-dentate, 1-nerved, the lower marging produced at the base into a short, triangular teeth, thickened along the nerve, 5.0 x 1.7 mm. *Lip* narrowly lanceolate, acuminate, subtruncate-bilobed at base, the margins of the basal lobes suberect, apically abruptly reflexed, 4.5 x 1.2 mm. *Column* straight, 5 mm long, with low marginal wings increasing toward the apex to form a hood over the clinandrum; anther ventral, stigma elliptic. *Pollinia* 2, narrowly oblong, on a rounded viscidium.

PARATYPE: Ecuador. Same locality as the holotype, November 1993, flowered in cultivation in the collection of Ecuagenera at Gualaceo, accession No. 001094, 19 Aug. 2008, *H. Medina 69* (QCA).

EPONYMY: Dedicated to Miguel Angel Soto Arenas, for his outstanding contributions to the study and knowledge of Neotropical orchids.

DISTRIBUTION AND ECOLOGY: Know only from southeastern Ecuador. A single population of this species has been found in the submontane wet forests of the Province of Zamora-Chinchipe, growing at about 1800 meters of elevation.

According to Luer's (2002) scheme of subgeneric classification, *M. sotoana* belongs to subgen. *Masdevallia* sect. *Masdevallia* subsect. *Saltatrices* (Rchb.f.) Luer. The group was not affected by generic recircumscriptions and nomenclatural changes recently proposed by Luer (2006) in his reconsideration of *Masdevallia*. *Masdevallia* subsect. *Saltatrices*, which is distributed in the Andes from Venezuela into Peru, is mostly characterized by the deeply connate sepals into a sepaline tube that is often, but not always ventricose (Luer 1996, 2002). The subsection includes 26 species, some of them not closely related. As Luer (2002) himself recognizes, the distinction between subsections *Saltatrices* and *Masdevallia* is not sharp.

Among the taxa of subsect. *Saltatrices*, *M. sotoana* has apparently only a single close relative, *M. strobelii*. This species was first discovered in the province of Zamora-Cinchipe in southeastern Ecuador by Calaway H. Dodson and independently collected in the same region by José Strobel (Sweet & Garay 1966). In this region, *M. sotoana* and *M. strobelii* are sympatric. *Masdevallia sotoana* may be distinguished from *M. strobelii* by the smaller size of the plant (leaves 2.8—3.5 vs. 4-6 cm in *M. strobelii*) and the flowers (sepals <3 cm vs. >5 cm), the petals provided with a small basal teeth (0.5 mm vs. 2 mm), the narrowly lanceolate lip (vs. obovate) abruptly reflexed at apex (vs. arcuate) and the much shorter column foot (2 mm vs. 5 mm).

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