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# A New Species of *Malaxis* (Orchidaceae, Epidendroideae, Malaxideae) from the Venezuelan Andes

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**ABSTRACT.** A new species of *Malaxis* Solander ex Swartz (Orchidaceae, Epidendroideae, Malaxideae), *M. medinae* Carnevali & Noguera Savelli, from Trujillo State in Andean Venezuela is proposed herein. The new taxon is related to the widespread *M. soulei* L. O. Williams, a species found from the southwestern United States southward into Panama. The plants, however, are smaller (to only 12.7 cm) and have proportionally longer peduncles (to 4.5 cm) that bear fewer flowers (12 to 25 per spike) with a much more triangular labellum with parallel apical teeth (vs. convergent in *M. soulei*).

**RESUMEN.** Una nueva especie de *Malaxis* Solander ex Swartz (Orchidaceae, Epidendroideae, Malaxideae), *M. medinae* Carnevali & Noguera Savelli, del estado Trujillo en los Andes venezolanos, es propuesta en este artículo. El nuevo taxón está relacionado cercanamente con la ampliamente distribuida *M. soulei* L. O. Williams, conocida desde el suroeste de los Estados Unidos hasta Panamá. Las plantas de *M. medinae* son más pequeñas (solo hasta 12.7 cm) con pedúnculos proporcionalmente más largos (hasta 4.5 cm) y con menos flores (12 a 25 por espiga) con un labelo más triangular con dientes apicales paralelos (vs. convergentes en *M. soulei*).

**Key words:** Andes, IUCN Red List, *Malaxis*, Monumento Nacional Tetás de Niquitao y Guirigay, Orchidaceae, Venezuela.

The genus *Malaxis* Solander ex Swartz (Orchidaceae, Malaxideae) is cosmopolitan, with ca. 300 species. Most species occur in the tropics of both the Old and New World, with fewer in subtropical and temperate regions (Foldats, 1970; Cribb, 2005). As currently circumscribed, the genus is most likely polyphyletic (Cameron, 2005; Cribb, 2005). For the purposes of this

paper, however, its former, broader circumscription is retained. In the New World, *Malaxis* consists of several easily distinguishable groups, based mostly on vegetative and inflorescence characters, since the flowers are remarkably consistent in structure. In a few species, the flowers are sessile (i.e., the inflorescence is a spike) like in *M. myurus* (Lindley) Kuntze and *M. streptopetala* (B. L. Robinson & Greenman) Ames, but in most taxa the flowers are clearly pedicellate. Inflorescences with pedicellate flowers can be racemose when the rachis is elongate (as in *M. johniana* (Schlechter) Foldats and related taxa), or subumbellate when the rachis is abbreviated and the flowers more or less successive (as in *M. andicola* (Ridley) Kuntze). Leaves range from one to three (rarely more) per stem. Most South American *Malaxis*, including Venezuelan taxa, belong to a group of taxa with two leaves and subumbellate inflorescences, which includes such taxa as *M. excavata* (Lindley) Kuntze and its related species, as well as *M. histioanthra* (Link, Klotzsch & Otto) Garay & Dunster-ville and its relatives.

In Venezuela, the genus *Malaxis* is represented by 13 to 15 species, of which five or six are apparently endemic (Carnevali & Ramírez-Morillo, 2003; Carnevali & Noguera Savelli, unpublished). *Malaxis* are most diverse in the Andean areas, where most of the Venezuelan taxa are represented. During the study of *Malaxis* from South America, we assessed the status of an unusual *Malaxis* previously reported as *M. soulei* L. O. Williams, characterized by small plants with a single leaf and elongate, spicate inflorescences. This entity is herein proposed as a new species.

**Malaxis medinae** Carnevali & Noguera-Savelli, sp. nov. TYPE: Venezuela. Trujillo: Guirigay hacia

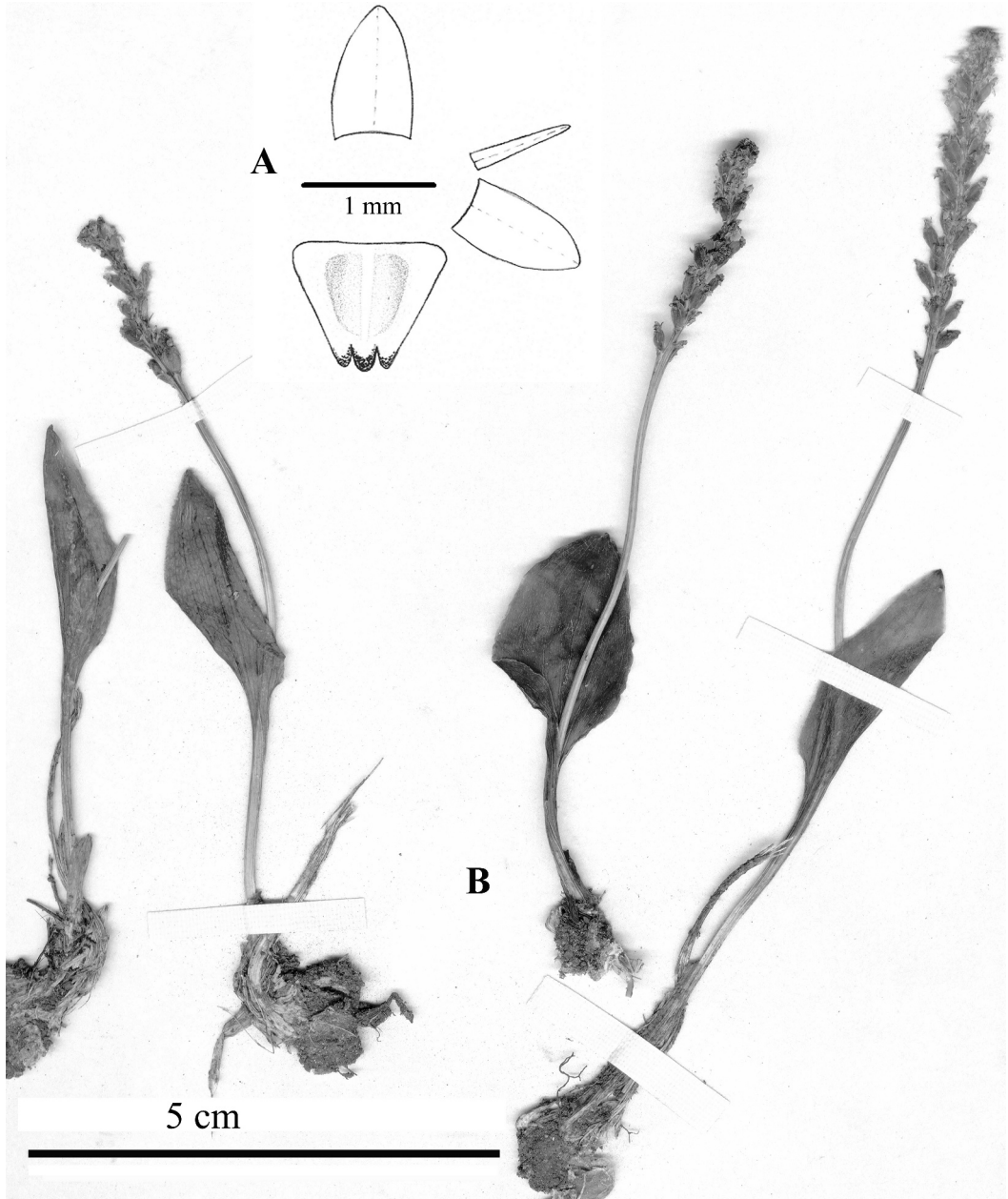


Figure 1. *Malaxis medinae* Carnevali & Noguera Savelli. —A. Floral segments, spread. —B. Flowering habit. Both images from the holotype, *L. Aristeguieta* & *E. Medina* 3583 (VEN).

Laguna La Parida (Laguna Las Parías), 3400 m, ago. 1958, *L. Aristeguieta* & *E. Medina* 3583 (holotype, VEN; isotypes, CICY, MO). Figure 1.

Haec species *Malaxi soulei* L. O. Williams affinis sed ab ea foliis lamina ovata usque ovato-elliptica (vs. elliptica vel ovato-elliptica), inflorescentia proportione longiore pedunculo quam foliis multo longiore (vs. brevior vel subaequali) rachidi pedunculum subaequante vel paulo excedente (vs.

quam eo multo brevior), floribus minoribus paucioribus atque labello proportione angustiore apice acutior, dente centrali quam lateralibus longiore (vs. brevior) recedit.

Terrestrial, erect herbs 8.7–12.7 cm tall; rhizome not known but most likely short; *stems* thickened into a basally globose pseudobulb, ca. 3 mm thick, apically attenuated, enclosed by a single sheath 1.1–1.7 cm; *leaf* 1 per pseudobulb, basal, the blade

ca.  $3 \times 1.2$  cm, membranous, ovate to ovate-elliptic, margin entire, apex acute to broadly acute, base cuneate to obtuse, narrowed into a sheathing petiole 3–4.5 cm around the basal half of peduncle. *Inflorescence* terminal, a 12- to 25-flowered spike, peduncle 3.3–4.5 cm, channeled and slightly compressed, somewhat winged in the apical 1/3; rachis 1.8–2.7 mm, winged, the wing membranous, to 0.8–1 mm wide; floral bracts ca.  $1 \times 0.8$ –1 mm, deltoid, apex rounded; *flowers* ca. 2.5 mm, yellowish green, not resupinate, perianth segments spreading widely, almost sessile, ovary ca. 0.5 mm; sepals elliptic, acute to broadly acute, 1-nerved, dorsal sepals ca.  $1.5 \times 0.6$  mm, lateral sepals ca.  $1.5 \times 1$  mm; petals ca.  $1.1 \times 0.1$ –0.25 mm, linear or narrowly triangular-oblong, curved in natural position, 1-nerved; labellum ca.  $1.5 \times 1.5$  mm, fleshier than the other perianth segments, concave, triangular-ovate, margin entire, apex deeply 3-dentate, the teeth verruculose, especially the central one, base truncate to slightly cordate; *column* ca. 0.5 mm, stout, subcylindrical; anther ca. 0.25 mm, terminal, 2-locular, pollinia 4, hard; capsule 2.5–3 mm, ellipsoid.

*Distribution and habitat.* The type locality of the new species is a small lake, Laguna Las Parías, which is located on the slopes of Cerro Guirigay (ca.  $9^{\circ}00'N$ ,  $70^{\circ}33'W$ , 3400 m), along the way from the top of the mountain to Las Mesitas and then into Valera, a city to the northwest of the Cerro Guirigay. Although not mentioned by the collectors of the new species, the plants were most likely collected among páramo vegetation with Espeletiinae (Frailejones) such as *Espeletia tenorae* Aristeguieta.

*IUCN Red List category.* *Malaxis medinae* should be considered Critically Endangered (CR B2a) according to IUCN Red List criteria (IUCN, 2001) because it is known from a single, isolated locality of less than 10 km<sup>2</sup>. Furthermore, *M. medinae* has not been re-collected since the original gathering in 1958. We have little further information about the conservation status of *M. medinae*. However, it is most likely a scarce species, or at least very inconspicuous and overlooked by collectors. Theoretically, it is well protected within the boundaries of the Monumento Nacional Tetras de Niquitao y Guirigay, which is relatively inaccessible. The species is most likely not threatened by overcollection due to its small size and the inconspicuousness of the flowers. However, páramo vegetation is subject to frequent fires, and since population sizes for the species are apparently reduced and it is known from a single locality of less than 10 km<sup>2</sup>, there are grounds to suspect the species to be Critically Endangered.

*Etymology.* We take great pride in naming this new species after Ernesto Medina (1938–), from the Instituto Venezolano de Investigaciones Científicas (IVIC). Dr. Medina was one of the collectors of the type material. He has made important contributions to the knowledge of Venezuelan orchids through his collections and his research on the ecology and ecophysiology of epiphytes, most importantly by means of his interest in the evolution of photosynthetic pathways, particularly of the crassulacean acid metabolism (CAM) photosynthetic mechanism.

*Discussion.* *Malaxis medinae* is the second known South American species of a complex of North American and Mexican *Malaxis* with spicate inflorescences on 1-leaved pseudobulbs, the other being *M. carnosa* (Kunth) C. Schweinfurth, which is known from Peru. *Malaxis carnosa* has a transversely round-oval to reniform labellum with a single, relatively large median apicule or lobule that is oblong-ovate to ovate and subacute to rounded at the apex (Schweinfurth, 1959).

*Malaxis medinae* is closest to *M. soulei*, but *M. soulei* is a larger plant (17–25 cm tall), with larger (sepals 2–2.2 mm) and more numerous flowers (> 50 per spike), with proportionally shorter peduncles that are always shorter than the subtending leaves. Furthermore, the shape of the labella of these closely related species is different. In *M. medinae* the central tooth is longer or subequal to the laterals (vs. shorter in *M. soulei*), while the lateral teeth are parallel to the central one as opposed to the always convergent lateral teeth of *M. soulei*. While in *M. soulei* the general outline of the labellum is somewhat ovate-triangular, the labellum of the new species is definitely triangular and pointed at the apex. In *M. soulei* there is a more or less conspicuous rounded lobe at each side of the base, while these lobes are absent in *M. medinae*, hence the labellum base is truncate.

This novelty was reported as *Malaxis soulei* by Foldats (1970: 442, 443) from Venezuela based on the only collection known. *Malaxis soulei* ranges from New Mexico, Arizona, and Texas in the U.S.A. (Catling & Magrath, 2002), into the high mountains of central Mexico, and down into Chiriquí in Panama. *Malaxis medinae* is disjunct from the nearest populations of *M. soulei* by more than 1300 km in a straight line. No populations similar to either species are known from either the western or the central cordillera of the Andes. The only known locality of *M. medinae* is on the northeastern section of the Cordillera de Mérida, which is in turn an offshoot of the Eastern Cordillera of the Andes. In Cameron's recent (2005) phylogenetic analysis of the Malaxi-

deae, *M. soulei* resides in the same clade as *M. spicata* Swartz, which is the type of the genus. Thus, both our new species and *M. soulei* will most likely remain members of *Malaxis* even if generic circumscriptions in the Malaxideae are redefined.

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