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A new species of *Scaphosepalum* Pfitzer (Pleurothallidinae: Orchidaceae), on the humid montane forest from Peru

Una nueva especie de *Scaphosepalum* Pfitzer (Pleurothallidinae: Orchidaceae) en el bosque húmedo montano de Perú

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Abstract

A new species of *Scaphosepalum* was found in the mountains of Yanachaga Chemillen National Park, on a humid montane forest at 2300 m in the central jungle of Peru. This species is similar to *Scaphosepalum antenniferum* but can be differentiated because the lateral sepals exhibit rhomboidal cushions and spathuliform lip. In contrast, the lateral sepals of *S. antenniferum* showing broadly lunar cushions and the medium sepal with the apiculate apex; by the other hand the lip is sub-panduriform and with denticulated apex.

Keywords: Orchidaceae, Pleurothallidinae, *Scaphosepalum*, new species, central jungle, Oxapampa, Yanachaga National Park, Peru

Resumen

Se encontró una nueva especie de *Scaphosepalum* en las montañas del Parque Nacional Yanachaga-Chemillén, en un bosque húmedo montano a 2300 m de altitud en la Selva Central del Perú. Esta especie es similar a *Scaphosepalum antenniferum* pero se diferencia porque sus sépalos laterales presentan cojines romboidales y labelo espatuliforme. En contraste, los sépalos laterales de *S. antenniferum* muestran cojines lunares anchos y el sépalo medio con ápice apiculado; por otro lado el labelo es sub-panduriforme y con ápice denticulado.

Palabras clave: Orchidaceae, Pleurothallidinae, *Scaphosepalum*, nueva especie, Selva Central, Oxapampa, Parque Nacional Yanachaga-Chemillén, Perú.

Introducción

Orchids are poorly known in Peru, every year are discover new species, and so far we know that exist a little over 2800 species according Zelenko & Bermúdez (2009). According to the Missouri Botanical Garden database of the Herbarium HOXA, www.tropicos.org (2014); in the Yanachaga Chemillen National Park (central jungle), there are about 500 species and it is presumed that this number will increase to over 600 species. Where *Epidendrum, Maxillaria, Pleurothallis* and *Stelis* would be the most diverse genera. The genus *Scaphosepalum* has been poorly collected and recorded in this locality until 2009, being *S. atropurpureum* sp nov the second collection and record so far for this genus.

Initially the genus was described as *Masdevallia* by Reichenbach in 1849, because that vegetatively are not very different from *Dracula* and *Masdevallia*. Years later, in 1888 Pfizer proposed and described first the *Scaphosepalum* genus including only five species, two of them *Masdevallia verrucosa* and *Masdevallia ochthodes*, making a mistake of not considering in this genus to the others. Much so that in 1890 Rolfe, moved permanently within the genus *Scaphosepalum* those species erroneously considered like *Masdevallia* (Luer, 1988).

The genus *Scaphosepalum* belongs to the tribe Epidendreae, subtribe Pleurothallidinae, currently with over 46 species worldwide, of which only 4 species such as *S. antenniferum* Rolfe, *S. breve* (Rchb. f.) Rolfe, *S. martineae* Luer and *S. swertifolium* (Rchb.f) Rolfe, are reported for Peru according to Zelenko & Bermudez (2009) and Blanca Leon *et al*. (2006).

The genus name refers to the shape of "boat" which have the sepals; by other hand refers to the fusion of the lateral sepals that generally reaching form a sack with two cushions; where plants prefer to develop on cloud forests, distributed from

southern Mexico, Panama, Guatemala, Venezuela, Guyana, Colombia, Ecuador, Peru to Bolivia, from 500 - 3000 m.

The genus *Scaphosepalum,* includes epiphytic plants tiny to medium sized, short stems or rhizomes that give rise to a leaf more or less lanceolate elliptic and a lateral inflorescence in raceme, erect, curved or somewhat pendulous, smooth or warty peduncles. The flowers are small non-resupinate; from the sepals extend small tails similar to the antennae of an insect, the lateral sepals have a couple of "pads" or "fleshy callus" whose shapes vary from triangular, semilunar to ovoid; these cushions or pads function like osmophores cells according to Vogel (1962), Pridgeon and Stern (1985); the petals are fleshy and small; the column is curved strongly winged and containing a pair of pollinia.

Material and methods

The description presented in the article is based on the available material of *Scaphosepalum atropurpureum* sp nov., that it was found in the area of Oso Playa of the Yanachaga Chemillen National Park, District of Huancabamba, Province of Oxapampa, Region of Pasco. The botanical collections were deposited in the herbaria MO, USM and HOXA. The morphological description was made according to the external characteristics observed in the botanical collections deposited in the different herbaria mentioned; for this was used the key species of the genus proposed by C. Luer (1988). The vegetative parts were carefully examined using a stereoscope Olympus (40x), Leica optical microscope (150x) and one USB digital microscope (250x). On the other hand we use digital photographs that have details of all vegetative parts including the habit; for this we used, a Sony digital camera (12MP 50x). Finally we made the drawings to detail what was observed, which were used as comparison material and discussion. To take into account their geographical distribution were taken geographical coordinates of its location through a GPS 60 CSX.

Result and discussion

Taxonomic treatment

Scaphosepalum atropurpureum L. Valenzuela sp nov. (Fig. 1-2)

TYPE. PERU. **Pasco**, Oxapampa, Huancabamba, Oso Playa, Yanachaga Chemillen National Park, 2362 m. 10°19'27"S, 75°35'20"O. 15-X- 2009. *L. Valenzuela 13592, A. Monteagudo, M. Cueva, A. Peña & J. Mateo* (Holotype: HOXA; Isotype: USM, MO), (Paratype: HOXA, L. Valenzuela 13612).

Diagnosis

Scaphosepalum atropurpureum is similar to *S. antenniferum* but differs in that the lateral sepals have rhomboids cushions; the medium sepal with revolute margins and slightly warty towards the middle, the apex is blunted; the lip is spathuliform with two longitudinal projections, with small lamellae at the central and terminal region thereof, apex rounded; finally all structures show an atropurpureous perianth. In contrast, the lateral sepals of *S. antenniferum* have widely lunar cushions and the tails are strongly divergent, the medium sepal with more or less apiculate apex; the lip is sub-panduriform with slightly denticulated apex; the perianth has a pale green to yellowish with mottled brown purple to reddish brown (Fig. 3)

Epiphytic plant, caespitose of 30-40 cm in length including the inflorescence. Leaves elliptic-lanceolate, erect and fleshy

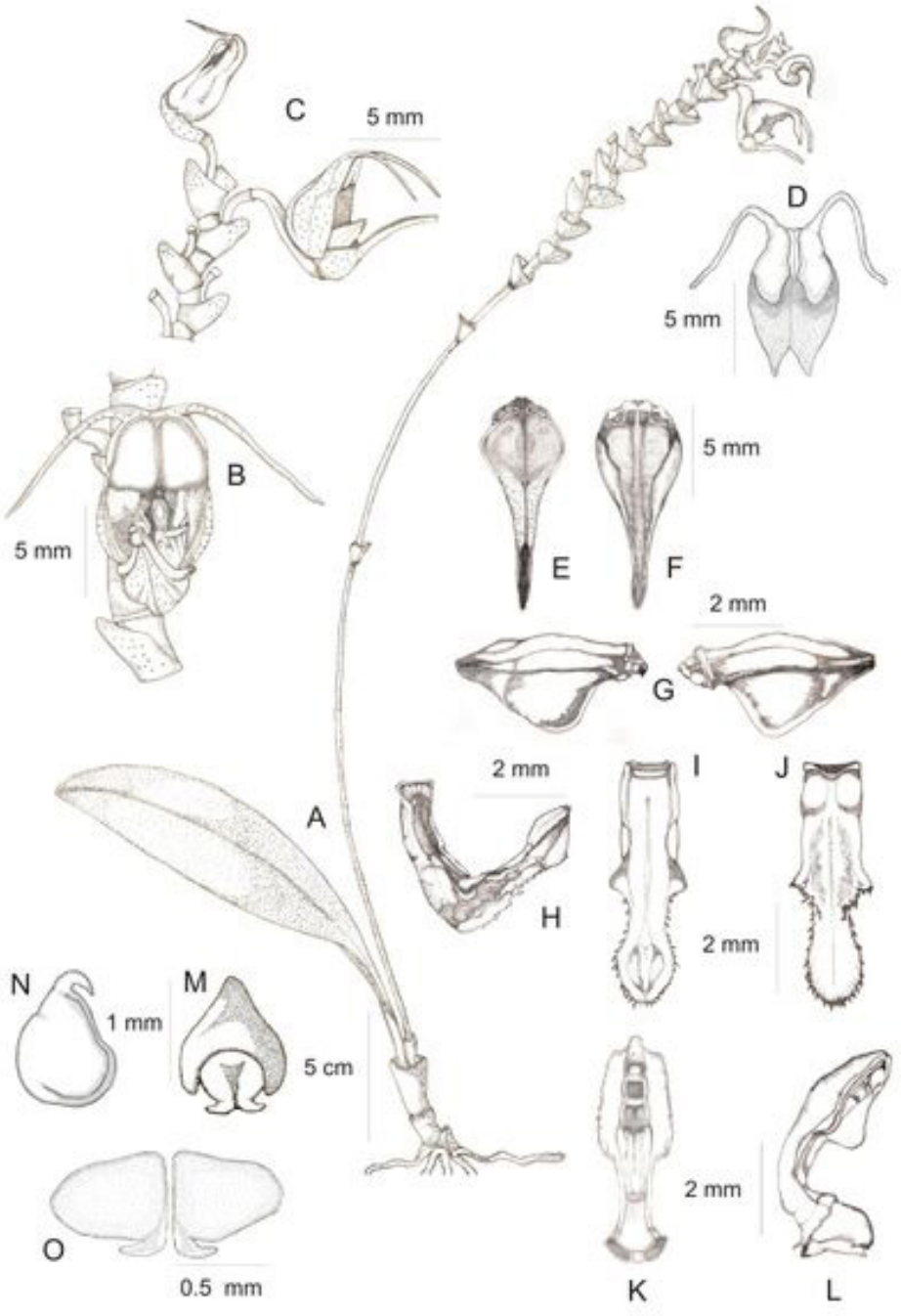

Fig. 1. ***Scaphosepalum atropurpureum*** L. Valenzuela. A. Habit; B. Flower; frontal view; C. Flower and inflorescence details, lateral view; D. Lateral sepals; E-F. Medium sepal, ventral and dorsal view; G. Petals; H-I-J. Lip, ventral, dorsal and lateral view, K-L. Column, frontal and lateral view; M. Pollinia, inside the cover; N. Anther cap; O. Pollinia. (Drawings by the author from the Holotype: *L. Valenzuela 13592*, HOXA)

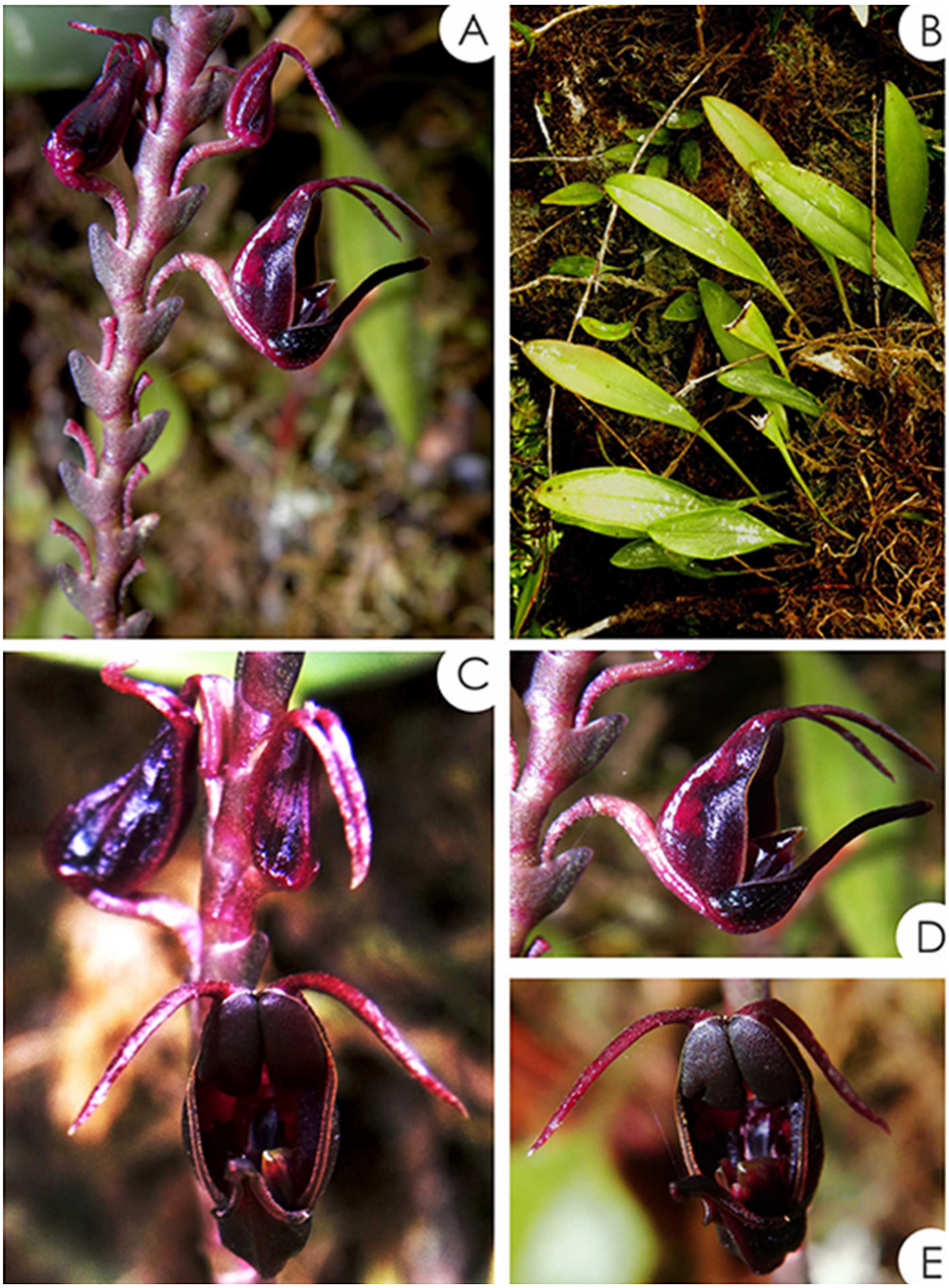

Fig. 2. ***Scaphosepalum atropurpureum*** L. Valenzuela. A. Inflorescence, floral bracts, pedicels and flowers in lateral view; B. Habit and leaves; C. flower buds, flower in frontal view, upper sepals, cushions and tails; revolute lower sepal; D. Flower in lateral view (atropurpureous and verrucous sepals, right petal with a slightly deep groove on the external face); E. Flower in frontal view (petals). Pictures by *L. Valenzuela* (JBM - 2009).

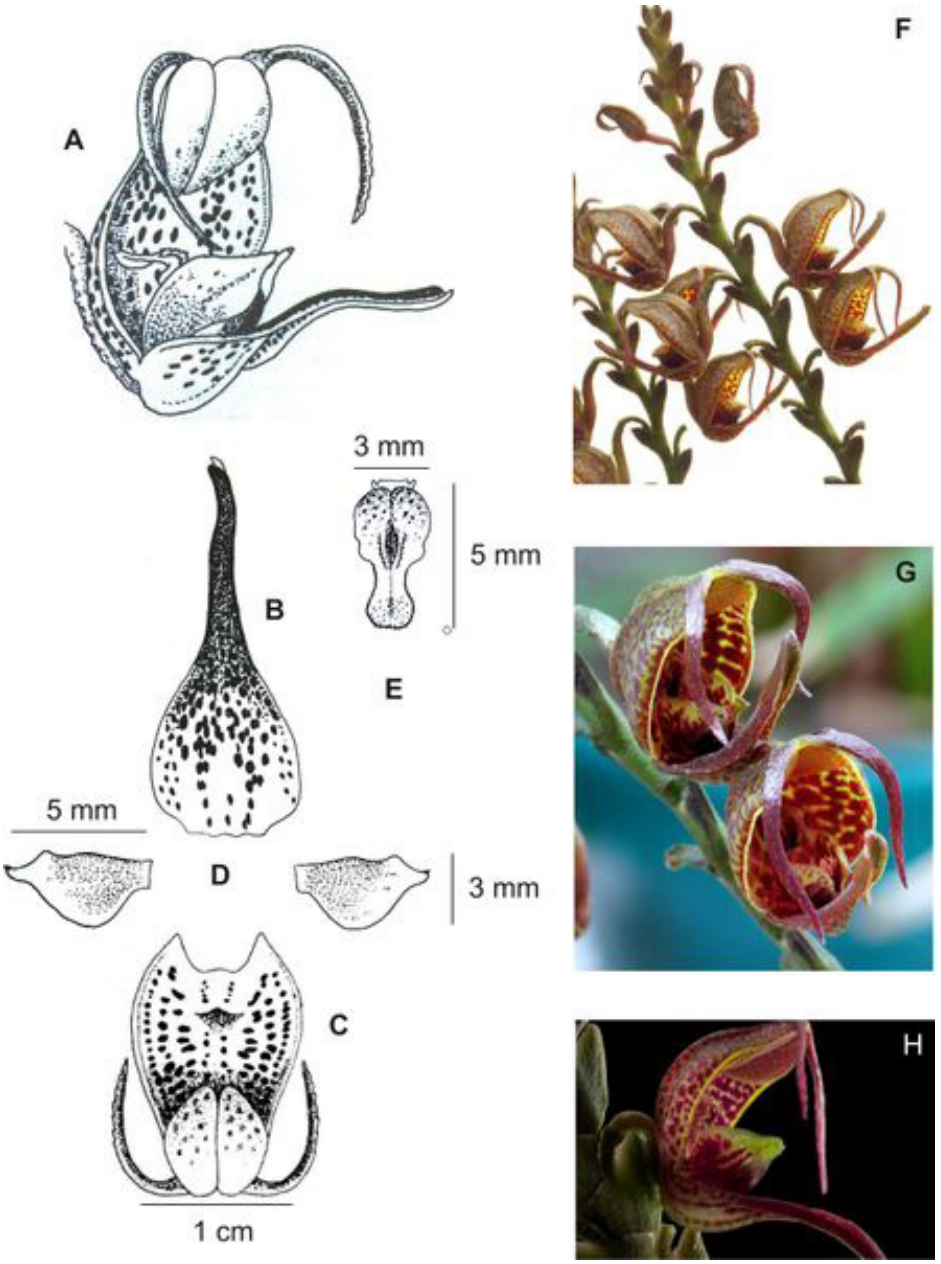

Fig. 3. ***Scaphosepalum antenniferum*** Rolfe. A. Flower (dull green, suffused and spotted with purple brown); B. Middle sepal with apiculate apex; C. Lateral sepals with lunate cushions; D. Petals with acute apex, E. Lip subpandurate with denticulate apex; F. Inflorescence, lateral sepals carinate; G. Flowers, tails strongly divergent; H. Flower in lateral view, lateral sepals carinate, middle sepal carinate and revolute, petals. Drawings From Icones Pleurothallidinarum in Systematics of Dresslerella and Scaphosepalum. Addenda to Porroglossum. Monogr. Sist. Bot. Missouri Bot. Gard. 26: 1–111. by Carlyle A. Luer, 1988, plate 5. p. 37. Pictures: F; by Quimbaya in http://www.flickriver.com/photos/tags/scaphosepalumantenniferum, G; by Eric Hunt in http://www.orchidspecies.com/scaphanteniferum.htm, H; by Tom Ballinger in https://www.flickr.com/photos/polylepis/

of 12 – 30 cm in length and 1.8 - 2.4 cm wide; petioles of 4 -14 cm in length, are enclosed in protective basal sheaths. Inflorescence a raceme erect and rigid of 35 - 40 cm in length, also it is enclosed by a basal protective sheath; 3-4 flowers are produced simultaneously; perianth mostly deciduous (while this is not pollinated), the scape, pedicels and floral bracts are conduplicates, slightly verrucose with rounded apex the same which are arranged from the 24 to 27 cm from the origin of the inflorescence. Flowers non-resupinate; the lateral sepals connate, atropurpureous, verrucose of 18.5 mm long and 4-5 mm wide (basal section: 10 mm, tails section: 8.5 mm), each sepal has rhomboidal cushions, the tails are slightly divergent; the medium sepal of 11.5 - 12 mm long by 3 - 4 mm wide, concave toward the anterior middle region, verrucose, carinate with revolute margins and with the obtuse apex; the petals are atropurpureous of 5-6 mm in length and 1.8 - 2 mm wide, regularly ovate-oblique, obtuse at base, obtuse dilated on the margin labellar, acute apexes, the internal face with a prominent rib sinuous, the external face with a slightly deep groove; the lip is atropurpureous of 5 mm long by 1.5 mm wide, more or less verrucouse and spathuliform, with two longitudinal projections towards the anterior region, the presence of small lamellae in the central middle part and the terminal region, apex rounded; the column is regularly curved atropurpureous of 5 mm in length, winged above the middle region; the anther cap has the enveloping margins and is slightly verrucose of 1 mm long; the pollinia (2) of 0.5 mm long compressed laterally with a short and curved foot.

Distribution and ecology

The species forms small colonies of 3-4 individuals; was found on a remnant of humid montane forest, with sandy soil flooded (wetland or bofedal), high humidity and plenty of moss and litter. On the other hand, *S. atropurpureum* was found growing associated with other orchid species as *Zootrophium dayanum* (Rchb.f.) Luer.

The new species described, is known only of the western side of the Yanachaga Chemillen ridge, with small populations restricted to a small remnant of forest, with very few trees exposed, near cropland and pasture; whose owners make income without due permission, for cattle grazing and for the extraction of orchids that are sold in the local market; putting at risk in this way populations of this species, which fortunately does not have attractive flowers. The author proposes the protection of this place to ensure the existence and perpetuation of this species; or at least make repopulation processes in similar places.

Etymology: The species name is given by the atropurpureous color displayed by all floral parts.

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Literature cited

Jardín Botánico de Missouri. 2014. Base de datos del Herbario HOXA (Oxapampa – Pasco, Perú).

www.tropicos.org.

Reichenbach, H. G. 1849. Die orchideen in Journal fûr die Botanik in ihrem ganzen Umfange. Zweiundzwanzeigster Band. Order: Beitrâge zur Pflanzenkunde. Sechster Band. Pag. 819.

Roque, J. & B. León. 2007d. Orchidaceae endémicas del Perú (759s – 878 s) en Blanca L., J. Roque, C. Ulloa, P. Jørgensen, N. pitman, A. Cano (eds.). Libro Rojo de las Plantas endémicas del Perú. Revista Peruana de Biología, Edición Especial 13(2): 971 pp. [diciembre 2006].

Luer, C. A. 1988. Icones Pleurothallidinarum V; Systematics of *Dresslerella* and *Scaphosepalum*, addenda to Porroglossum (ORCHIDACEAE). Missouri Botanical Garden. Pag. 21-106.

Pfitzer, E. H. 1888. H. G. A. Engler & K. A. E.Prantl (eds.), Nat. Pflanzenfam. 2(6): 139.

Pridgeon, A. M. & W. L. Stern. 1985. Osmophores of *Scaphosepalum*. Bot. Gaz. 146(1): 115-123.

Rolfe, A. R. 1890. The Genus *Scaphosepalum* Pfitzer. J. Bot. 28:135 – 137.

Vogel, S. 1962. Duftdrüsen im Dienste der Bestaübung. Akad. Wiss. Abh. Math.- Naturwiss. Kl. 10: 80-91.

Zelenko, H. & P. Bermúdez. 1999. Orchids: species of Peru. ZAI Publications. Quito, Ecuador.