MYOXANTHUS VITTATUS (ORCHIDACEAE), A NEW SPECIES FROM COSTA RICA

FRANCO PUPULIN and MARIO A. BLANCO

1 Jardín Botánico Lankester, Universidad de Costa Rica
Research Associate, Marie Selby Botanical Gardens, Sarasota, U.S.A.
P.O. Box 1031-7050 Cartago, Costa Rica. fpupulin@cariari.ucr.ac.cr

2 Instituto Centroamericano de Investigación Biológica y Conservación
P.O. Box 2398-250 San Pedro de Montes de Oca, San José, Costa Rica
Present mailing address: Herbarium, Florida Museum of Natural History, University of Florida
385 Dickinson Hall, P.O. Box 117800 Gainesville, Florida 32611-7800, U.S.A.

ABSTRACT. The taxonomic position of Myoxanthus Poepp. & Endl. (Orchidaceae: Pleurothallidinae) is discussed and Silenia Luer is maintained as a subgenus of Myoxanthus. A new species of Myoxanthus is described and illustrated. Myoxanthus vittatus Pupulin & M.A. Blanco is apparently endemic to the low, tropical wet forests of central Pacific Costa Rica, where it has been collected in two different places. It differs from closely related species for the small size of the plant, the whitish flowers, longitudinally striped with purple, the densely pubescent ovary, and the ligulate, obtuse lip. The new combination Myoxanthus tomentosus (Luer) Pupulin & M.A. Blanco is proposed.

RESUMEN. Se discute la posición taxonómica de Myoxanthus Poepp. & Endl. (Orchidaceae: Pleurothallidinae) y se mantiene a Silenia Luer como subgénero de Myoxanthus. Se describe y se ilustra una nueva especie de Myoxanthus. Myoxanthus vittatus Pupulin & M.A. Blanco es aparentemente endémico de los bosques tropicales de bajura en el Pacífico Central de Costa Rica, donde ha sido recolectado en dos diferentes localidades. Difiere de las especies afines por el tamaño pequeño de las plantas, por sus flores blanquecinas con estrías longitudinales púrpura, por el ovario densamente pubescente y por el labelo ligulado y obtuso. Se propone la nueva combinación Myoxanthus tomentosus (Luer) Pupulin & M.A. Blanco.

KEY WORDS: Orchidaceae, Pleurothallidinae, Myoxanthus, Myoxanthus sect. Silenia, Myoxanthus vittatus, Costa Rica

The circumscription of genera within the largest tribes of the Orchidaceae has not yet reached a general agreement among taxonomists. The subtribe Pleurothallidinae, restricted to the tropics and sub-tropics of the New World, is perhaps the largest taxonomic orchid group, with 28 genera and an estimation of more than 3000 species (Dressler 1993).

The genus Myoxanthus was first described by Endlicher on M. monophyllus (Poeppig & Endlicher 1835), based on a plant collected in the Peruvian department of Huanuco by Poeppig. In 1847 another species currently assigned to Myoxanthus was identified as a distinct genus and described as Duboisia by Karsten (later renamed Dubois-Raymondia Karsten due to the priority of Duboisia R. Br. in the Solanaceae) (Karsten 1847, 1848). A third attempt to assign species of Myoxanthus to a new genus was made by Barbosa Rodrigues (1882), who described Chaetocephala to accommodate its former Restrepia lonchophylla. In the opinion of leading orchid taxonomists at that time, notably Lindley, Reichenbach, and Cogniaux, the criteria selected to define the new genera were insufficient to sustain the proposals, and Myoxanthus species were newly submerged into the conglomerate genus Pleurothallis.

It was not until 1982 when the genus Myoxanthus was resurrected by Luer who recognized 34 species sharing a combination of
characters sufficiently distinct to warrant generic recognition, among which the presence of tubular sheaths concealing the ramicaul, often bearing digitate trichomes, a leaf abscission layer without the “node” which may be found in racemose species of Pleurothallis, the fascicled inflorescence, and the often thickened apices of the petals, sometimes developed into osmophores (Luer 1982). The original circumscription of Myoxanthus was emended by Luer (1992) in his systematic monograph of the genus, with the description of subgenus Silenia to include the P. aspasicensis complex, encompassing 3 species with a fascicle of single, successive flowers borne terminally from the ramicaul, fleshy flowers externally short-pubescent, and ciliate anther cap. Eventually in 1995 Luer proposed to include Myoxanthus subgenera Satyria and Silenia in Pleurothallis subgenus Acianthera in order to restore a circumscription of Myoxanthus sensu stricto (Luer 1995).

The generic delimitation of Myoxanthus among other pleurothallids is supported by a unique assemblage of morphological characteristics and anatomical features revised by Pridgeon and Stern (1982). The presence of two series of foliar veins and a medullated stele in the root is characteristic of Myoxanthus and may be found elsewhere in the Pleurothallidinae only in Octomeria and in the Pleurothallis aspasicensis complex. Spiral thickenings in hypodermal cells and mesophyll idioblasts, which are present in most pleurothallids, are notably absent from all the tissues of Myoxanthus and the P. aspasicensis complex (Pridgeon & Stern 1982).

In view of the diagnostic anatomical characters which allow recognition of evolutionary affinities in the Pleurothallidinae and to preserve the naturalness of Myoxanthus, we prefer to maintain the P. aspasicensis complex as Myoxanthus subgenus Silenia and we therefore propose the following Myoxanthus species new to science:

Myoxanthus vittatus Pupulin & M.A. Blanco, sp. nov.

TYPE: COSTA RICA. San José: Pérez Zeledón, El Brujo, near Río División, 450 m, 30 Jan. 2000, flowered in cultivation at Jardín Botánico Lankester, 3 June 2001, M.A. Blanco 1324 (hologype, USJ!; isotype, SEL!).

Species Myoxanthus aspasicensi (Rchb.f.) Luer similis, sed planta floribusque omnine minoribus, ovario pubescente, sepalis purpureo vittatis, interne laevis, synsepalo lanceolato, apice petalorum dorsali ter tuberculato, labello ligulato apice laevi differt.

Plant epiphytic, cespitose, up to 17 cm tall, roots coarse. Ramicauls stout, erect, 4-7 cm long, enclosed by 3-4 loose, tubular sheaths sometimes fragmented. Leaf erect, thickly coriaceous, narrowly lanceolate-elliptic, minutely emarginate, 7-10 cm long, 1.3-1.5 cm wide, cuneate below into a conduplicate, sessile base. Inflorescence a fascicle of single, successive flowers, at the apex of ramicaul, the peduncle sparsely pubescent, 8-13 mm long, subtended by a papyraceous spathe 1.4-1.6 cm long; pedicels 2-3 mm long; ovary less than 1 mm long, densely pubescent. Flowers small, whitish, longitudinally striped with purple, fleshy, densely short-pubescent externally, glabrous within. Dorsal sepal linear-oblanceolate, obtuse, 10-12 mm long, 3 mm wide, 5-veined. Lateral sepals connate into a lanceolate, shortly emarginate, concave synsepal, 10-13 mm long, 4-5 mm wide, each half 4-veined. Petals fleshy, linear-oblong, obtuse, minutely apiculate, adaxially provided with a tuft of short papillae near the apex, 4 mm long, 1 mm wide, 3-veined. Lip 3-lobed, ligulate, subacute, 4 mm long, 2.5 mm wide between lateral lobes; the apical lobe smooth, slightly undulate along the margins; the lateral lobes erect, narrowly uncinate, antrorse; the disc with an erect, narrow, low, channeled callus above the base, extending in front into a low keel just to near the lip apex, laterally provided with a pair of low lamellae extending to the apex, hinged on the end. Column arcuate, semiterete, 1.6 mm long, provided with narrow wings above the middle, the foot less than 1 mm long. Anther cap globose, with long hairs on the upper margin, 2-celled. Pollinia 2, obovoid, flattened, on a short caudicle.

Etymology: from the Latin vittatus, “longitudinally striped”, in reference to the stripes on sepals and petals.
**Distribution and Ecology:** Known only from two specimens from the same area in central Pacific Costa Rica, epiphytic in tropical wet forest, premontane belt transition, at 450 m elevation.

**Phenology:** Flowering occurs from March to June.


*Myoxanthus vittatus* is closely related to *M. aspasicensis, Pleurothallis tomentosa, M. semperegmatos* and *M. uncinatus,* but it is distinguished by the small size, the densely pubescent ovary, the whitish flower striped with purple, the sepals adaxially smooth, and the ligulate, obtuse lip.

*Pleurothallis tomentosa* Luer was described from a single Costa Rican collection made by Endres around 1867 and kept at Reichenbach’s herbarium in Vienna, and it is supposed to be extinct (Luer 2000). This species may be easily distinguished from *M. vittatus* by the purple-black flowers with an oblong lip, rounded at apex. In order to avoid paraphyly in *Myoxanthus* as intended here, a new combination is required for Endres’ species:

*Myoxanthus tomentosus* (Luer) Pupulin & M.A. Blanco, *comb. nov.*


**Cited Literature**


