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VALIDATION OF *MICROEPIDENDRUM* (ORCHIDACEAE: LAELIINAE)

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ABSTRACT

The generic name *Microepidendrum* Brieger ex W. E. Higgins is validated, an epitype of *Epidendrum subulatifolium* A. Rich. et Gal. is selected, and a new combination *Microepidendrum subulatifolium* (A. Rich. et Gal.) W. E. Higgins is proposed. Other species included in *Microepidendrum* by Brieger are excluded from the group. A phylogeny of the subtribe Laeliinae is presented showing the genus *Microepidendrum* Brieger ex W. E. Higgins to be sister to all other genera in Laeliinae and not closely related to *Epidendrum* or *Encyclia*.

Key words: *Encyclia*, *Epidendrum*, Laeliinae, *Leptophyllum*, Mexico, *Microepidendrum*, *Oestlundia*, Orchidaceae, *Scaphyglottis*.

RESUMEN

Se valida el nombre genérico *Microepidendrum* Brieger ex W. E. Higgins, se selecciona un epitipo de *Epidendrum subulatifolium* A. Rich. et Gal. y se propone la nueva combinación *Microepidendrum subulatifolium* (A. Rich. et Gal.) W. E. Higgins. Otras especies adscritas por Brieger a *Microepidendrum* quedan excluidas del grupo. Se presenta una filogenia de la subtribu Laeliinae, en la cual se muestra que *Microepidendrum* Brieger ex W. E. Higgins es hermano de todos los demás géneros en Laeliinae y no está estrechamente relacionado ni con *Epidendrum* ni con *Encyclia*.

Palabras clave: *Encyclia*, *Epidendrum*, Laeliinae, *Leptophyllum*, México, *Microepidendrum*, *Oestlundia*, Orchidaceae, *Scaphyglottis*.

INTRODUCTION

Microepidendrum subulatifolium is an orchid that appears to be a small reed-stem *Epidendrum* with terete leaves (Fig. 1), but with a flower unlike *Epidendrum* or *Encyclia*. It is distributed in the dry oak forests of southern Mexico. This diminutive species, published as *Epidendrum subulatifolium* A. Rich. & Gal., and transferred to *Encyclia* by Dressler (1961), has no close allies in subtribe Laeliinae. A cladistic analysis based on holomorphology clearly shows that this species is neither an *Epidendrum* nor an *Encyclia* (Higgins, 2000). Holomorphology is the total collection of characters or the complete description of an organism including morphological, anatomical, chemical, and molecular

characteristics. A recent three-gene DNA phylogenetic study (Fig. 2) confirms these findings (Higgins, van den Berg and Whitten, in press). The only other name ever proposed for this species is *Microepidendrum subulatifolium* (A. Rich & Gal.) Brieger. However, when Brieger published the genus *Microepidendrum* (Brieger, 1977) he failed to provide a Latin diagnosis and to designate a type species, thus the name is invalid (Greuter et al., 2000). The generic name must be validated before the combination can be used.



Fig. 1. Drawing of *Microepidendrum subulatifolium* plant by Stig Dalström.

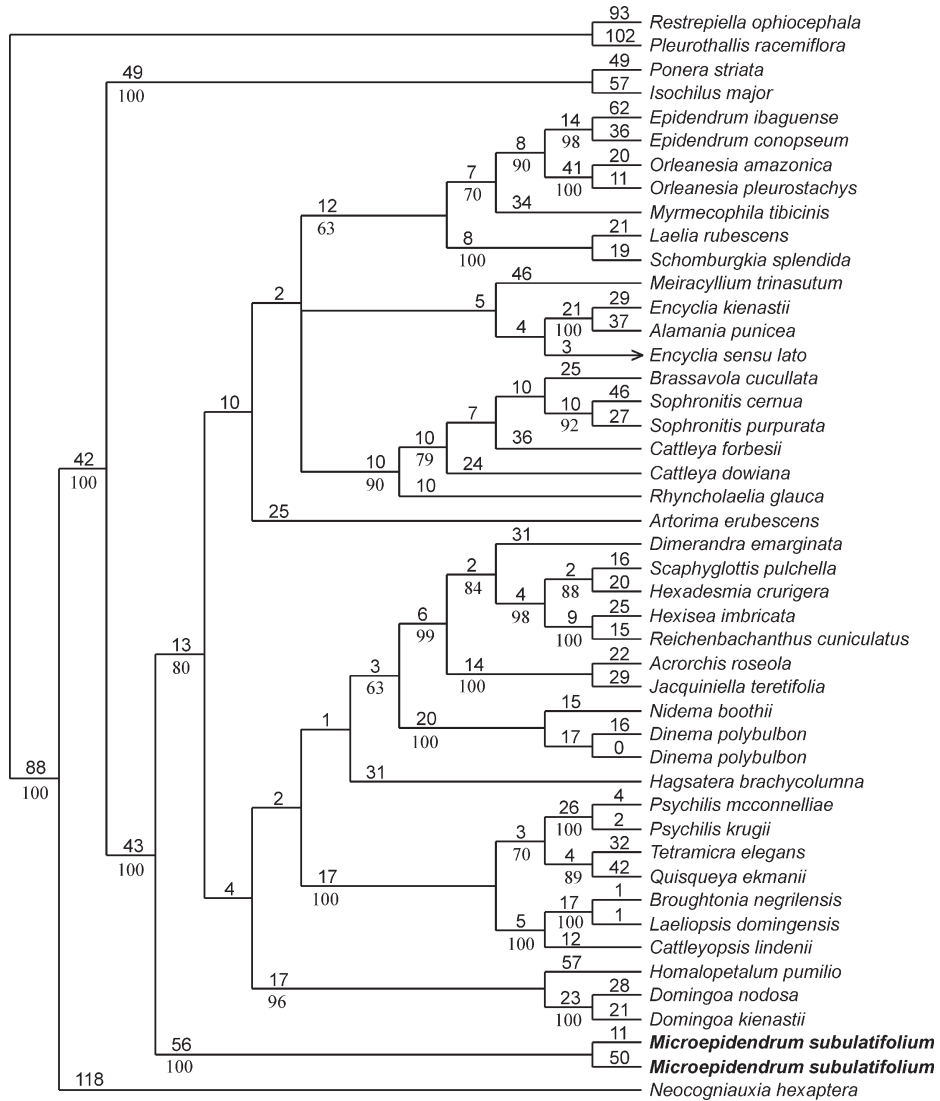


Fig. 2. Phylogeny of Laeliinae. The phylogenetic position of *Microepidendrum* is shown in a selected tree of a DNA Laeliinae topology. ACCTRAN character optimization was used to produce the Fitch branch lengths shown above the line with bootstrap indices shown below.

TAXONOMY

Microepidendrum Brieger ex W. E. Higgins, gen. nov.

Planta caespitosa, caulibus gracilibus; novis surculis et apicibus radicum ruberis; radicibus verrucosis incrassatis; foliis teretibus subulatis acutis; scapo terminali; labello suborbiculari unilobato adnato a columna.

Type species: *Epidendrum subulatifolium* A. Rich. & Gal.

Microepidendrum subulatifolium (A. Rich. & Gal.) W. E. Higgins comb. nov.
Basionym: *Epidendrum subulatifolium* A. Rich. & Gal., Ann. Sci. Nat. III 3: 21 1845.
Synonym: *Encyclia subulatifolia* (A. Rich. & Gal.) Dressler, Brittonia 13(3): 265. 1961.

Since the original *Epidendrum subulatifolium* type specimen, *Galeotti 5073* (W), is only a scrap of remaining vegetative material, an epitype is proposed here.

Epitype: *Hunt s. n.* Mexico: Jalisco, 3 km south of San José de Gracia (Michoacán) ca. 1700 m. (SEL 086578/OIC 13589).

Distribution: Mexico (Guerrero, Jalisco, Michoacan, Oaxaca).

Plant caespitose with very slender stems, 1-8 cm long, new growth red; roots thick, verrucose, root tip red; leaves 2-3 per stem, subcylindric, acute, strict, 2.5-12 cm long, 1.5-3 mm diameter; inflorescence racemose or paniculate, rachis flexuous, few-flowered, up to 25 cm long; sepals and petals yellow-brown, lip white, callus yellow, anther burgundy; sepals elliptic-lanceolate, complicate-acute, recurved, 6.5-8.5 mm long, 2-2.5 mm wide; petals oblanceolate-linear, acute or subacute, 5.5-8 mm long, 0.7-1 mm wide; lip adnate to 3/5 of column, simple, suborbicular, retuse, 9-9.5 mm long, 4-5.5 mm wide, strongly plicate-undulate, margins erose, reflexed; callus an ovate flattened disk with 3 papillose keels; column small, clavate, 4-4.5 mm long, three apical teeth subequal, midtooth obtuse surpassed by anther; capsule ellipsoid, 12 mm long, 5 mm wide. The flower of *Microepidendrum subulatifolium* is illustrated in Fig. 3.

The DNA phylogeny based on the *nrlTS*, *matK*, and *trnL-F* regions, presented in Fig. 2, shows *Microepidendrum* to be sister to the remainder of Laeliinae included in this analysis (Higgins, van den Berg and Whitten, in press). Two different specimens of the taxon that appear twice in the phylogenetic tree were used in this study in order to confirm their position in the subtribe. The numbers shown above lines are branch lengths, the number of synapomorphic DNA base changes, that support each clade and the bootstrap support indices are shown below. *Encyclia* sect. *Leptophyllum* Dressler & G.E. Pollard is polyphyletic. The other members of this section included in the *Encyclia* sensu lato clade of Fig. 2 have been moved to *Oestlundia* W.E. Higgins (Higgins, 2001).

Taxonomic note: The other species placed in *Microepidendrum* by Brieger are not closely related to *M. subulatifolium*. Their present position is as follows:

M. subliberum (C. Schweinf.) Brieger *nomen illegitimum* = *Scaphyglottis sublibera* (C. Schweinf.) Dressler.

M. serrulatum (Sw.) Brieger *nomen* = *Epidendrum serrulatum* Sw.

M. pallens (Rchb. f.) Brieger *nomen* = *Epidendrum pallens* Rchb. f.

M. miserrimum (Rchb. f.) Brieger *nomen* = *Epidendrum miserrimum* Rchb. f.

M. selaginella (Schltr.) Brieger *nomen* = *Epidendrum selaginella* Schltr.

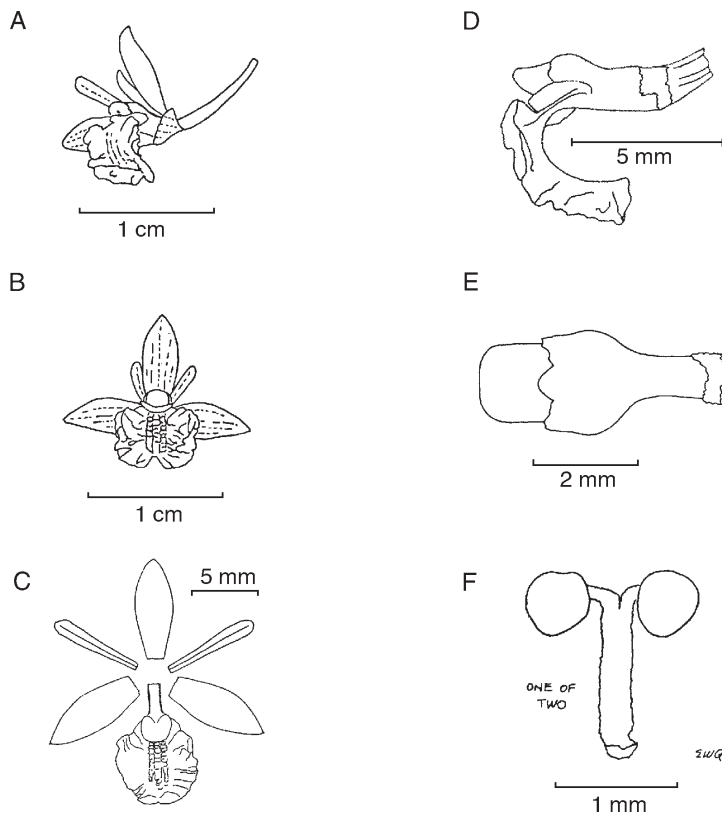


Fig. 3. Drawing of *Microepidendrum subulatifolium* flower by Ed W. Greenwood. A. quarter view of flower; B. front view of intact flower; C. dissected flower; D. side view of lip and column; E. top view of anther and column; F. two of four pollinia.

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