

OESTLUNDIA: A NEW GENUS OF ORCHIDACEAE IN LAELIINAE

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ABSTRACT. *Encyclia* section *Leptophyllum* Dressler & Pollard is a monophyletic group that must be raised to generic status to keep sister clades equally ranked. The generic name *Oestlundia* is proposed for this clade in honor of Karl Erik Magnus Östlund. New combinations are made for *Oestlundia cyanocolumna*, *O. distantiflora*, *O. luteorosea*, and *O. tenuissima*.

Key words: Orchidaceae, taxonomy, *Encyclia*, *Epidendrum*, *Leptophyllum*, *Oestlundia*, *cyanocolumna*, *distantiflora*, *luteorosea*, *tenuissima*, Laeliinae

INTRODUCTION

A DNA analysis of three gene regions, ITS, *matK*, and *trnL-F*, produces a phylogeny (FIGURE 1) for *Encyclia* section *Leptophyllum* that shows it more closely related to *Prosthechea* than to *Encyclia* (Higgins et al. in press). The DNA voucher locations are listed in TABLE 1. Based upon a combined analysis of molecular and morphological data (Higgins 2000), *Encyclia* section *Leptophyllum* Dressler & Pollard (Dressler & Pollard 1971), excluding *Epidendrum subulatifolium* A. Rich. & Galeotti, is a monophyletic group that must be raised to generic status to keep sister clades equally ranked. Since the sectional name *Leptophyllum* is occupied at the generic level in the Caryophyllaceae by *Leptophyllum* Ehrh. (Ehrhart 1784), a new name is required for this group. The name *Oestlundia*, proposed here, commemorates Karl Erik Magnus Östlund (1875–1938) who collected the type specimen for the species.

Östlund was born in Stockholm, Sweden, on February 3, 1875. He received the degree of Chemical Engineer from the Royal Institute of Technology in 1897 and, in 1909, was appointed manager of the Empresa de Teléfonos Ericsson S/A, Mexico. The Mexican Orchidaceae became the compelling interest in his life, and in 1928

he retired and devoted himself to orchid studies. Östlund died in Cuernavaca, Mexico, on February 27, 1938. The Östlund Orchid Herbarium was the finest collection of orchids to ever come out of Mexico and perhaps the finest from any Latin American country at that time (Williams 1951). The Östlund heirs donated his collection to the Oakes Ames Orchid Herbarium at Harvard University. Duplicate sets of specimens were distributed to many institutions, including the Smithsonian Institute National Museum of Natural History (US), and Missouri Botanical Garden (MO).

NEW GENUS

Oestlundia W.E. Higgins, gen. nov. TYPE: *Epidendrum cyanocolumna* Ames, FT. Hubb. & C. Schweinf.

Planta epiphytica, foliis graminiformibus, pseudobulbis fasciculatis, ovoideis a conico-ovoideis, inflorescentia simplice vel ramosa, floribus paucis a multis, labelo continuo cum base columnae, labelo unilobato adnato a columna papillato vel carnosoporcato, columna recta tridentata, dente mediano parvo obtuso, dentibus lateralibus grandibus aliformibus, rostello horizontale.

Pseudobulbs clustered or up to 3 cm apart on

TABLE 1. DNA voucher information.

Taxon	Voucher number
<i>Oestlundia cyanocolumna</i> (Ames, FT. Hubb. & C. Schweinf.) W.E. Higgins	FLAS 200717
<i>Oestlundia distantiflora</i> (Rich. & Gal.) W.E. Higgins	AMO MAS 9324
<i>Oestlundia luteorosea</i> (Rich. & Gal.) W.E. Higgins	W. Bussey, Mexico
<i>Oestlundia luteorosea</i> (Rich. & Gal.) W.E. Higgins	Orquideas del Valle, Colombia
<i>Oestlundia tenuissima</i> (Ames, Hubb. & Schweinf.) W.E. Higgins	FLAS 200719

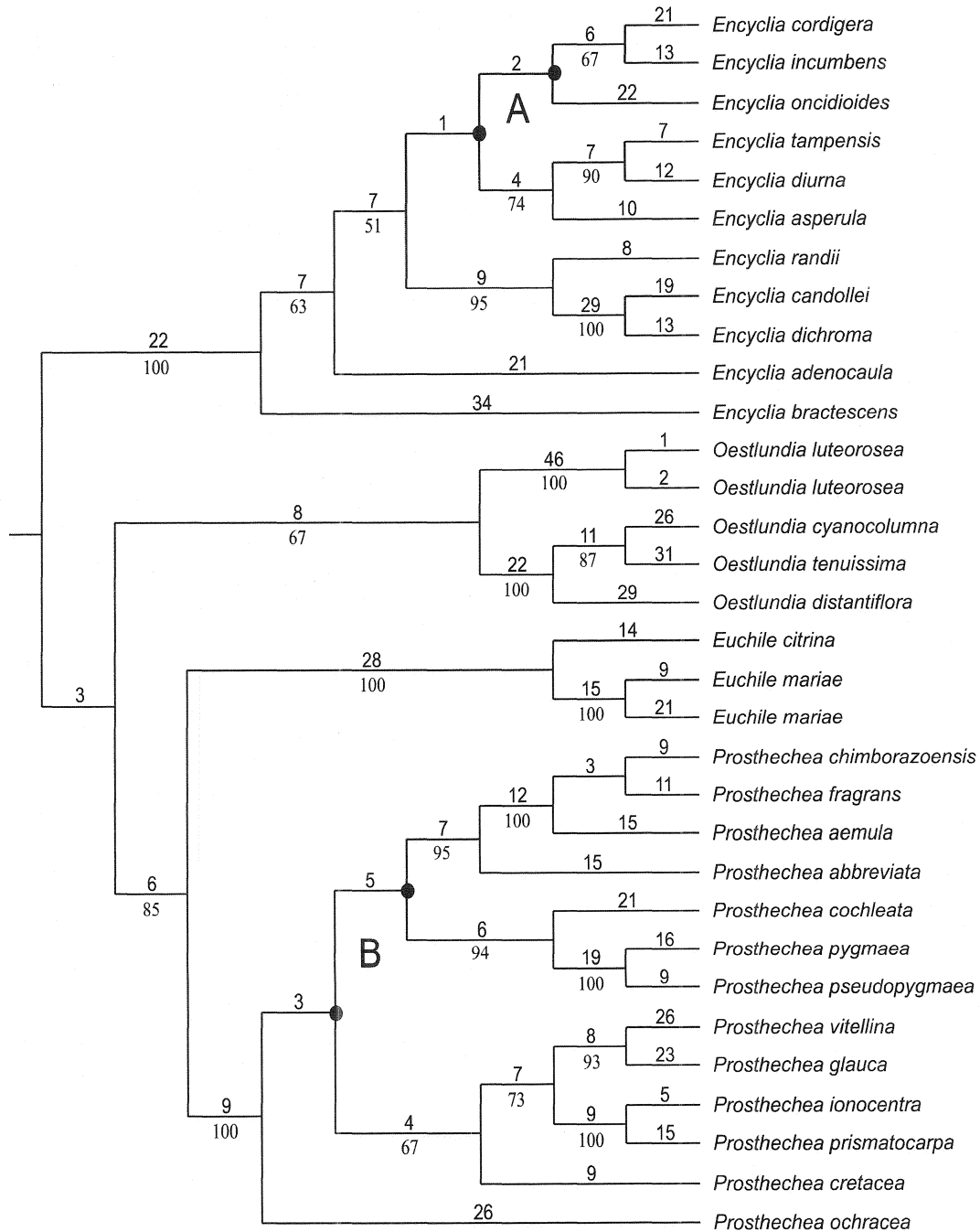


FIGURE 1. A selected DNA tree showing *Oestlundia* phylogeny. Fitch branch lengths are above the line and bootstrap indices below. ACCTRAN character optimization is used for branch lengths. The nodes that collapse in the strict consensus tree are marked with a dot forming polytomies at points A and B.

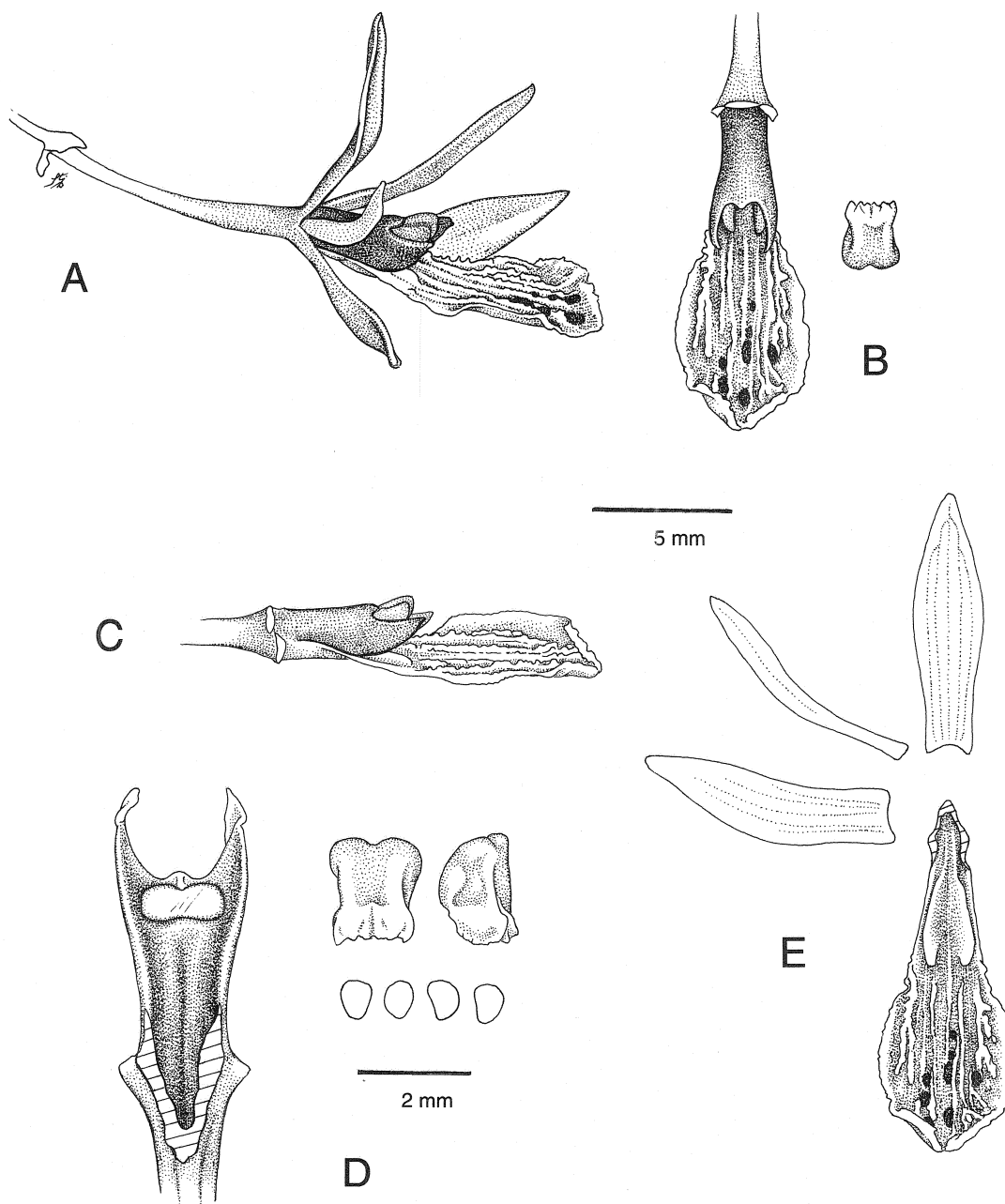


FIGURE 2. *Oestlundia cyanocolumna* flower. **A.** Lateral view of flower. **B.** Top view of column and lip with anthercap removed. **C.** Side view of column showing lip transition to column. **D.** Bottom view of column with top and side view of anther, and side view of pollinia. **E.** Dissected flower showing sepals, petal, and lip.

rhizome, ovoid, spheric-ovoid, conic-ovoid, or fusiform-ovoid, 0.7–7 × 0.3–2.5 cm. **Leaves** 1–3 per pseudobulb, linear, ligulate-linear, or elliptic-ligulate, obtuse or acute, 3.5–25 × 0.15–1 cm. **Inflorescence** pedunculate, simple or

branched, 5–45 cm long; flowers 2–12, the sepals and petals pale yellow, yellow, orange-yellow, olive-green, or green-yellow shading distally to brown or purplish brown, the lip yellow, orange-yellow, or cream-white centrally marked

with dull violet or green stripe, the column yellow, orange-yellow, green-yellow, dark purple or blue-violet. *Sepals* linear-lanceolate, elliptic-oblong, oblong-oblancoelate, or oblancoelate, apex obtuse, subobtuse, or acute, 7–18 × 1.5–3 mm. *Petals* spatulate or oblancoelate-spatulate, oblancoelate-linear, sublinear, linear, or oblancoelate, apex attenuate, subobtuse, obtuse or acute, 7–17 × 0.5–3 mm. *Lip* basally adnate or adnate to column for about $\frac{1}{3}$ – $\frac{3}{5}$ length of column, total length 8–16 mm; the blade unlobed, lanceolate, obovate or cuneate-obovate, or cuneate, apex acute, retuse or obtuse, 8.5–10 × 3.5–7 mm; callus of 2 explanate or fleshy ridges or keels at base of blade, together subquadrate, passing into 3 of 5–7 very fleshy, warty, verrucose, or papillose veins which run nearly to the apex of the lip, outer veins may be crenulate. *Column* about 3–6 mm long, slender, the mid-tooth obtuse, shorter than the wing-like lateral teeth which are subequal to or surpass the anther, lateral teeth joined by horizontal rostellum. *Cap-sule* ellipsoid, 15–20 × 5–8 mm (Dressler & Pollard 1976).

INCLUDED TAXA

- Oestlundia cyanocolumna** (Ames, F.T. Hubb. & C. Schweinf.) W.E. Higgins, comb. nov. BASIONYM: *Epidendrum cyanocolumna* Ames, F.T. Hubb. & Schweinf. Bot. Mus. Leaf. 3: 2. 1934. TYPE: Mexico, Puebla, Teziutlan, *Östlund 2413* (AMES). SYNONYM: *Encyclia cyanocolumna* (Ames, F.T. Hubb. & C. Schweinf.) Dressler, Brittonia 13(3): 264. 1961.
- Oestlundia distantiflora** (A. Rich. & Gal.) W.E. Higgins, comb. nov. BASIONYM: *Epidendrum distantiflorum* A. Rich. & Gal. Ann. Sci. Nat., ser. 3, 3: 19. 1845. TYPE: Mexico, Veracruz, Mirador, *Galeotti 5250* (W). SYNONYM: *Encyclia distantiflora* (A. Rich. & Galeotti) Dressler & G.E. Pollard, Phytologia 21(7): 437. 1971.
- Oestlundia luteorosea** (A. Rich. & Gal.) W.E. Higgins, comb. nov. BASIONYM: *Epidendrum luteoroseum* A. Rich. & Gal. Ann. Sci. Nat., ser. 3, 3: 19. 1845. TYPE: Mexico, *Galeotti 5233* (P). SYNONYM: *Encyclia luteorosea* (A. Rich. & Galeotti) Dressler & G.E. Pollard, Phytologia 21: 437. 1971.
- Oestlundia tenuissima** (Ames, Hubb. & C. Schweinf.) W.E. Higgins, comb. nov. BASIONYM: *Epidendrum tenuissimum* Ames, Hubb. & C. Schweinf. Bot. Mus. Leaf. 3:

15. 1934. TYPE: Mexico, Michoacan, Baranca de las Minas, *Östlund 2246* (AMES). SYNONYM: *Encyclia tenuissima* (Ames, F.T. Hubb. & C. Schweinf.) Dressler, Brittonia 13(3): 265. 1961.

The genus can be identified by a suite of characteristics. Unique in the subtribe is the combination of a horizontal rostellum and wing-like lateral teeth on the column along with an unlobed lip markedly adnate to the column bearing fleshy ridges/papillae. A parsimony analysis (Higgins 2000) of these characters across the subtribe Laeliinae revealed, however, that the only unambiguous morphological synapomorphy for the genus is the smooth transition of the lip to the column (FIGURE 2).

Oestlundia is endemic to Mexico with the exception of *O. luteorosea*, which also occurs in Honduras, Nicaragua, Guatemala, Costa Rica, Colombia, Venezuela, Paraguay, Bolivia, and Peru. These medium to high elevation (600–2000 m) plants usually are found in dry forests. Typically, this habitat is very dry January to May. Thus in cultivation, they require cool to intermediate growing conditions with complete drying of the roots between waterings.

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