

## FIRST RECORD OF *EPIDENDRUM* × *DOROTEAE* (ORCHIDACEAE) IN SOUTH AMERICA

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*Epidendrum* × *doroteae* (Orchidaceae), a natural hybrid between *Epidendrum ciliare* and *Epidendrum nocturnum*, was hitherto known only from a few specimens collected during the 1940s–1990s in Honduras, Central America. *Epidendrum* × *doroteae* is recorded here for the first time in Nicaragua and in South America, in Brazil. We found three clusters of individuals of the hybrid in sympatry with the parental species on Marajó Island, state of Pará, in the Brazilian Amazon, and we recognised two specimens from Nicaragua deposited in the herbaria AMO and MO as *E. ×doroteae*. *Epidendrum* × *doroteae* and the parental taxa have star-shape flowers with yellowish-green sepals and petals. However, *E. ×doroteae* differs from the parental species when fertile by the lateral lobes of the lip, which have an irregularly serrate-dentate, rarely slightly fimbriate margin vs. entire to slightly undulate margin in *E. nocturnum* and distinctly fimbriate margin in *E. ciliare*.

**Key words:** botanical collection, Brazilian Amazon, Laeliinae, Marajó Island, natural hybrid, Nicaragua, orchids

*Epidendrum* L. counts around 1900 species and is one of the largest genera of orchids in the Neotropical region, occurring in several types of vegetation (Hágsater & Soto-Arenas, 2005; POWO, 2024). Hybridisation is relatively common in Orchidaceae, resulting mainly from weak or permeable reproductive barriers, and has been intensively investigated in *Epidendrum* (e.g. Vega et al., 2013; Marques et al., 2014; Pinheiro et al., 2016). The genus encompasses 12 natural hybrids (POWO, 2024), including *Epidendrum* × *doroteae* P.H. Allen, which has *Epidendrum ciliare* L. and *Epidendrum nocturnum* Jacq. as putative parental species (Allen, 1958). *Epidendrum* × *doroteae* was described from only one specimen collected in the Department of Francisco Morazán, Honduras (Allen, 1958), but other specimens were collected in the locality and also in the neighbouring department, El Paraíso, in the 1940s–1990s. *Epidendrum* × *doroteae* has been treated as endemic to Honduras until now (Hágsater & Sánchez-Saldaña, 2008; Vega et al., 2022; POWO, 2024).

During field expeditions to the Brazilian Amazon in the state of Pará, we found three clusters of individuals of *E. ×doroteae* and several individuals of its parental species growing in sympatry. Specimens of the three taxa were photographed *in situ*, collected, herborised according to usual taxonomic techniques, and later deposited at the herbarium MG. Here, we report the first record of the hybrid in South America and the first record in the XXI century. This finding led us to analyse digital images of specimens of *E. ×doroteae* (most of them were primarily misidentified as *E. ciliare*) deposited at

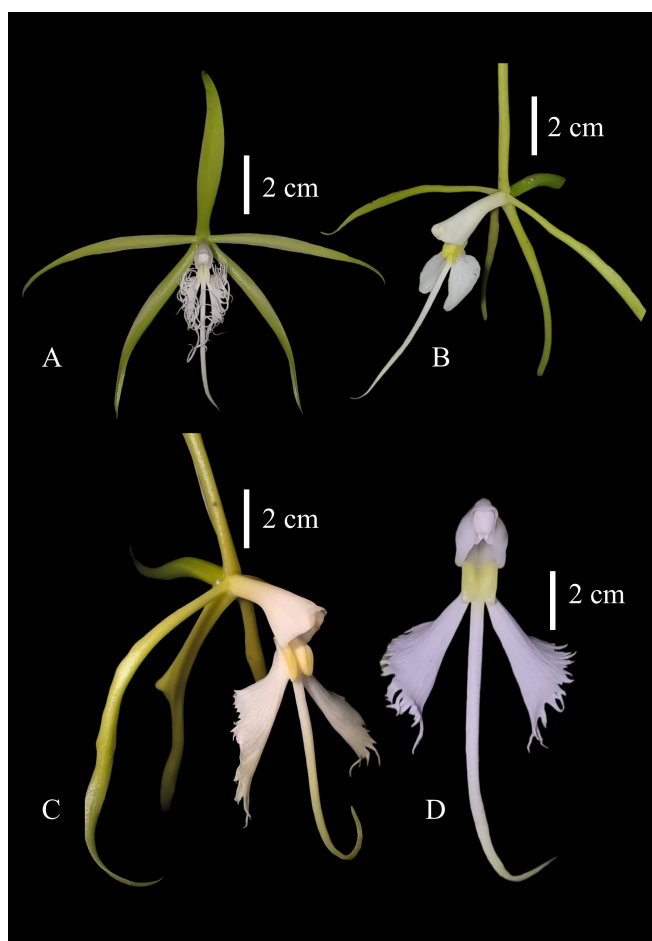
the herbaria AMES, AMO, EAP, LL, MEXU, MIN, MG, MO, NY, PH, SEL, UC and US (acronyms are given according to Thiers et al., 2024), which also revealed the occurrence of the hybrid in Nicaragua.

*Epidendrum* × *doroteae*, previously reported as an epiphytic or rupicolous orchid in pine-oak woods at altitudes of 900–1000 m a.s.l. in Honduras (Hágsater & Sánchez-Saldaña, 2008), occurs at slightly higher altitudes in Nicaragua (920–1300 m a.s.l.), also in a pine forest. In Brazil, it was found at about 20 m a.s.l. in terra firme forests on Marajó Island, the largest river-sea island in the world, where it grows on angiosperm species at 4–10 m above the ground. This shows that *E. ×doroteae* does not exhibit habitat specificity. *Epidendrum* × *doroteae* is treated as a taxon of «Preocupación Especial» (Special Concern) in Honduras (SERNA, 2008), and considering that the most recent previous global record dates from 1996, the hybrid can be considered rare.

*Epidendrum ciliare* and *E. ×doroteae* belong to the *Coilostylis* group *sensu* Hágsater & Sánchez-Saldaña (2008). This group is characterised by the caulomes thickened into heteroblastic and fusiform pseudobulbs, racemose and distichous inflorescences; the peduncle is covered by large non-spathaceous bracts, and large star-shaped flowers are with long, narrow sepals and petals. In turn, *E. nocturnum* belongs to the *E. nocturnum* group *sensu* Hágsater & Sánchez-Saldaña (2008), which has short, racemose or pluri-racemose inflorescences, the peduncle without spathaceous bracts, and usually large star-shaped flowers with

morphologically similar sepals and petals. Thus, the three taxa have star-shaped flowers with yellowish-green sepals and petals that are close in size. However, *E. ×doroteae* differs from the parental species when fertile by the lateral lobes of the lip, which have an irregularly serrate-dentate, rarely slightly fimbriate margin vs. entire to slightly undulate margin in *E. nocturnum* and distinctly fimbriate margin in *E. ciliare* (Fig. 1).

Further, *E. ×doroteae* differs from *E. nocturnum* by the inflorescence, which generally has three or more flowers and very evident bracteoles, covering about half of the pedicellate ovary vs. inflorescence with 1(–2)-flowers and short bracteoles, restricted to the base of the pedicellate ovary. Since *E. ×doroteae* is morphologically similar to *E. ciliare*, it is possible that there are other specimens of *E. ×doroteae* deposited in herbaria and misidentified as *E. ciliare*. Therefore, a more careful analysis of Neotropical collections is necessary.



**Fig. 1.** *Epidendrum ×doroteae* and its parental species. Designations: A – *Epidendrum ciliare*, flower in central view (D.S. Ferreira, E.G. Nascimento 112, MG, Brazil); B – *Epidendrum nocturnum*, flower in lateral view (D.S. Ferreira, E.G. Nascimento 222, MG, Brazil); C – *Epidendrum ×doroteae*, flower in lateral view (D.S. Ferreira, E.G. Nascimento 149, MG, Brazil); D – *Epidendrum ×doroteae*, details of the column and lip (D.S. Ferreira, E.G. Nascimento 149, MG, Brazil).

Examined specimens of *E. ×doroteae* are listed below. 1. Brazil: 1.1. Pará, Cachoeira do Arari, Vila de Retiro Grande, 01.05.2023, D.S. Ferreira, E.G. Nascimento 149 (MG).

2. Honduras: 2.1. El Paraíso, hills near Las Mesas, 900 m a.s.l., 20.07.1946, L.O. Williams, A. Molina 10077 (AMES barcode 02174872, digital image!, PH barcode 00590983, digital image!, MEXU barcode 87175, digital image!, UC barcode 729279, digital image!); 2.2. Francisco Morazán, along junction of Jicarito and Gallo creeks, 1000 m a.s.l., 19.06.1947, fl., A. Molina 142 (AMES barcode 02174854, digital image!, MEXU barcode 87168, digital image!); 2.3. Francisco Morazán, along junction of Jicarito and Gallo creeks, 1000 m a.s.l., 19.06.1947, fl., A. Molina 144 (AMES barcode 02174853, digital image!, MEXU barcode 87178, digital image!, US barcode 00316018, digital image!); 2.4. Drainage of the Rio Yeguaré, Las Mesas, 3600 ft, 06.11.1948, S.F. Glassman 1551 (MIN barcode 1310316, digital image!, NY barcode 04076989, digital image!); 2.5. Hills East of the Yeguaré Valley, 3200 ft, 28.10.1957, P. Allen, D. Allen 6786 (EAP barcode 3777, holotype, digital image!); 2.6. Barranco Las Mesas, 900 m a.s.l., 07.07.1964, A. Molina 14434 (NY barcode 04076983, digital image!); 2.7. Quebrada El Naranjo, ca. 4 km southeast of Zamorano, 03.07.1996, fl., J.L. Linares, F.J. Hubbard 3451 (MEXU barcode 833239, digital image!, MEXU barcode 1061693, digital image!); 2.8. Without locality, 1959, P.H. Allen s.n. (mounted 17.10.1975, fl., Fritz Hamer A5) (SEL barcode 030887, digital image!, MO barcode 478892, digital image!); 2.9. Without locality, s.d., P.H. Allen s.n. (mounted 18.10.1971, fl., Fritz Hamer s.n.) (AMES barcode 01539729, digital image!).

3. Nicaragua: 3.1. Estelí, Salto de Estanzuela, Rio Estanzuela, ca 6 km south of Estelí, 920–1020 m a.s.l., 31.07.1981, W.D. Stevens, B.A. Krukoff 20568 (MO barcode 269733, digital image!); 3.2. Jinotega, Southwest of Jinotega, along road to La Cantera and Los Pinos, in region of pine forest, 1050–1350 m a.s.l., 25.06.1947, P.C. Standley 10103 (AMO 003649, xerox!).

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## ПЕРВАЯ НАХОДКА *EPIDENDRUM* × *DOROTEAE* (ORCHIDACEAE) В ЮЖНОЙ АМЕРИКЕ

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*Epidendrum* × *doroteae* (Orchidaceae), естественный гибрид между *Epidendrum ciliare* и *Epidendrum nocturnum*, был до сих пор известен только по нескольким образцам, собранным в 1940–1990-х годах в Гондурасе (Центральная Америка). В данной работе *Epidendrum* × *doroteae* впервые отмечен в Никарагуа и в Южной Америке (в Бразилии). Было обнаружено три кластера особей гибрида, находящихся в симпатрии с родительскими видами на острове Маражо (штат Пара, бразильская Амазония), и два образца из Никарагуа, хранящихся в гербариях АМО и МО, определены как *E. ×doroteae*. *Epidendrum* × *doroteae* и родительские таксоны имеют звездчатые цветки с желтовато-зелеными чашелистиками и лепестками. Однако *E. ×doroteae* отличается от родительского вида в цветущем состоянии по боковым долям губы, которые имеют нерегулярно пильчато-зубчатый, редко слегка бахромчатый, край по сравнению с цельным или слегка волнистым краем губы у *E. nocturnum* и отчетливо бахромчатым краем губы у *E. ciliare*.

**Ключевые слова:** Laeliinae, ботаническая коллекция, бразильская Амазония, естественный гибрид, Никарагуа, орхидеи, остров Маражо