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Encyclia navarroi (Orchidaceae), a new species from Cuba

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Encyclia navarroi Vale & Rojas (Orchidaceae) is described from western Cuba. This orchid thrives in coastal vegetation on the karstic terrains in the Pinar del Río and Artemisa provinces. It co-occurs locally with congeneric species. *Encyclia navarroi* can be easily recognized by its erose leaf margin, the not connivent and triangular lateral lobes of the labellum, and by the round central lobe with a basal papillose area.

Encyclia, with about 150 species distributed from Florida to Argentina, is one of the most abundant and broadly distributed orchid genera in the Neotropics. These plants are epiphytic, terrestrial or lithophytic herbs with conspicuous conic-piriform pseudobulbs, terminating in 1–3(–4) articulate and conduplicated leaves. Most of them have resupinate flowers, with the labellum being free or often partially adnate to the column, trilobed, and with a callus composed of 2–3 fleshy-ridged teeth. The column is winged with a small mid-tooth and two deltoid lateral teeth supporting the anthercap (Higgins *et al*. 2003).

The Cuban archipelago has the highest number of *Encyclia* species in the Caribbean (Withner 1996, Nir 2000). Most *Encyclia* species in Cuba are endemics and a number of new species have been described recently, which has helped clarify some taxonomic issues (e.g., Ackerman 2004, Pupulin & Mújica 2005). However, the reports of possible new species and hybrid populations (Llamacho & Larramendi 2005, Rodríguez-Seijó *et al*. 2009) emphasize the necessity of critical studies of the genus in Cuba. Here we report a new species from western Cuba and provide details of its distribution and ecology.

Encyclia navarroi Vale & Rojas, *sp. nova* (Fig. 1)

Sed planti erecti, foliis margini quasi erosis, petalis paris vel plus longis ut sepalis. Petalis et sepalis viridis, labeli rosei coloris, labeli lobo lateralibus prope triangulatis et prope liber, labeli lobis terminalis prope orbiculato et papillose. Lobo mediano labelli lobis lateralibusque distali margini angulo acuto formantibus. Odoris siccus cinnamomi similis. Anthesis inter aprilis et juno.

Type: Cuba. Pinar del Río, Península de Guanahacabibes, María La Gorda, 21°48´N, 84°29´W, at 12 m a.s.l. Growing on *Plumeria obtusifolia* in a dry evergreen forest over karstic rock. Collected 15.IV.2007. Flowered in cultivation in 20.V.2007, 25.V.2008 and 12.VI.2009. Pressed 15.VI.2009 *AVG2007-01*. Holotype in HAC (SV 42604), two isotypes in SANT (a sheet (*62637*) and a specimen in spirit (*AVG2007-2*).

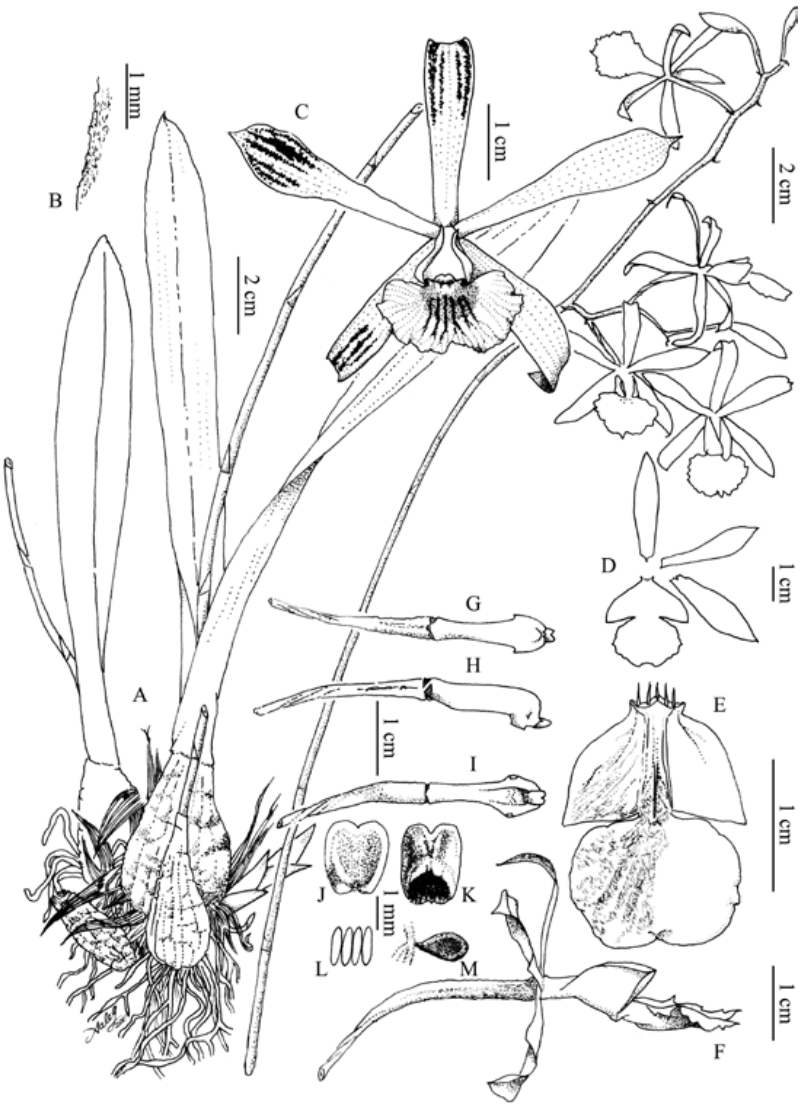

Fig. 1. *Encyclia navarroi* (from the holotype, drawn by Ángel Vale). — **A**: Plant habit. — **B**: Leaf margin. — **C**: Flower, frontal view. — **D**: Dissected flower. — **E**: Labellum. — **F**: Flower lateral view. — **G–I**: Column and peduncle; superior, lateral and inferior view. — **J–K**: Anther-cap, external and internal view. — **L**: Pollinarium, frontal view. — **M**: Pollinia with viscidia, lateral view.

ETYMOLOGY: After Dr. Luis A. Navarro Etxeberría, a Spanish biologist, researcher of plant-animal interactions, who spotted the first individual of this taxon in the field.

Herb epiphytic, erect, 130 cm tall. Rhizome hidden among pseudobulbs, cylindrical, covered by scarious sheets. Roots terete, 1–3 mm across, white with tips green to reddish green. Pseudobulbs caespitose, conic to ovoid 3–6 cm tall, 1.6–3.5 cm diameter. Leaves 1–3, conduplicate at base, linear-lanceolate, coriaceous, arched and mostly sub-twisted, acute to apiculate, minutely erose (especially towards apex), 13–25 cm long × 1.5–2 cm wide. Inflorescence an erect raceme or a panicle 2–4 branched, peduncle with 2–10 deltoid adpressed bracts of 7 × 6 mm, bases of branches with bracts amplexicaul, scarious, 1.8 × 2.5 mm. Scape and rachis 16–100 cm high, with 3–20 flowers opening progressively, rachis lax, flowers distanced by 1–1.5 cm. Floral bracts cucullate-amplexicaul, broadly ovate, obtuse, squamiform, 2.3–5 mm long. Showy, scented and medium-sized flowers, to 7 cm across, sometimes wider than high. Ovary pedunculate, rugose, straight, 20 mm long and 4.5–5 mm wide. Tepals from apple-green to orange with distal, violet to brown spots. Sepals with undulate margins,

diminutively apiculate, spotted at end of 5–7 nerves, dorsal sepal of 25–30 × 6–7 mm; lateral sepals slightly oblique, 25–27 × 6–7 mm. Petals obovate-spatulate, strongly narrowed to base, concave, strongly apiculate, 5–7 nerved, 2–3.2 cm long, 10–14 mm wide. Labellum trilobulate, 20–24 mm long. Lateral lobes triangular, from salmon to yellow, 8–8.5 × 12.5–13 mm, enclosing column (but without covering its dorsal surface), attached in right angle with rest of labellum, touching central lobe. Lateral lobes not connivent, their apices slightly in contact or completely separated. Central lobe white to pink, lined in purple, callus spotless white, 13–15 × 11–13 mm with base powdery-papillose, transversally elliptic-flabellate, repand and plicate, apex emarginate, callus disk-like, 10–13 mm long with two divergent keels and a central canal, free distally and terminating in two small teeth between keels. Column sub-trigone, erect, broader and winged at stigma level, centrally and ventrally canaliculate, pink-salmon, white or yellow at base, 13–15 × 9–9.5 mm. Clinandrium prominent. Stigmatic cavity rectangular-obovate, viscous, 4.5 × 2.5 mm with conspicuous lateral lobes, rostellum as broad as anthercap. Anthercap fleshy, pyramidal-quadrate, tetra-locular, yellowish white, with a cordiform depression and a central commissure of 2.2 × 1.5 mm. Pollinarium 1.2 mm long. Pollinia 4, very compressed laterally, yellow, 0.8 × 1 mm, joined to a granulose caudicle. Fruit unknown.

We found *Encyclia navarroi* in María la Gorda and near of La Bajada (both in Guanahacabibes Peninsula, Pinar del Río) and in two coastal localities of Artemisa province. We found only 1–5 individuals at each locality. This plant is epiphytic on *Plumeria* spp. (Apocynaceae), *Ficus* sp. (Moraceae) and *Bucida* sp. (Combretaceae) in evergreen microphyllous forest, swamp vegetation and the ecotone between them, from sea level to 5 m elevation. The blooming season is from April to July.

Encyclia navarroi can be recognized by the sub-erose margin of the leaves, a rare feature among the Cuban *Encyclia* species. This feature is present (and much more distinct) only in *E. triangulifera*, whose flowers are half the size of those of *E. navarroi*. In addition, the lateral and central lobes of *E. triangulifera* are narrower than in *E. navarroi*. The two species inhabit quite different habitats, *E. navarroi* occurring in karstic vegetation at sea level, whereas *E. triangulifera* is known exclusively from the Cajálbana Tableland and the Preluda Mountain regions, inhabiting ultramafic spiny vegetation at more than 200 m a.s.l. In Guanahacabibes, *E. navarroi* and *E. bocourtii* are sympatric and bloom at the same time. Nonetheless, they are discernable because the labellum of *E. navarroi* is white to pink with a spreading mid-lobe, while *E. bocourtii* has a white-yellow labellum with a partially or completely rolled mid-lobe. *Encyclia navarroi* differes from *E. plicata* by its triangular lateral lobes that are perpendicular to the labellum axis, whereas in *E. plicata* the lateral lobes are obovate-lanceolate, curved and oblique. Flowers of *E. navarroi* also differs from *E. plicata* and in fact from all members of the *E. phoenicia* complex — including *E. phoenicia*, *E. pyriformis* and the *Encyclia* species formerly known as *Epidendrum brevifolium* — due to the absence of a callus at the base of the labellum mid-lobe in *E. navarroi*. Finally, *E. navarroi* has flowers more than three times larger than those of *E. fucata*, another co-occurring species.

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