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Specklinia endotrachys

Text by Melissa Díaz-Morales and Adam P. Karremans/Watercolor by Sylvia Strigari

Tribe EPIDENDREAE
Sutribe PLEUROTHALLIDINAE
Genus SPECKLINIA Lindley

Specklinia endotrachys (Rchb.f.) Pridgeon & M.W.Chase, Lindleyana 16(4): 257. 2001. Type: Costa Rica. Alajuela: San Ramón, along the Barranca River, *Endrés 92* (lectotype, W 0021581; isolectotypes, W 1889-003365, W 0020331, W 0020150, AMES 118500). Basionym: *Pleurothallis endotrachys* Rchb.f., *Linnaea* 41:95. 1876. Synonyms: *Humboltia endotrachys* (Rchb.f.) Kuntze, *Revis. Gen. Pl.* 2: 667. 1891. *Empusella endotrachys* (Rchb.f.) Luer, *Monogr. Syst. Bot. Missouri Bot. Gard.* 95: 258. 2004. Non *Pleurothallis endotrachys* Lehm. & Kraenzl., *nom. illeg. Bot. Jahrb. Syst.* 26: 439. 1899. [= *Pleurothallis lehmanniana* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 7: 235. 1920].

Epiphytic, caespitose, erect herb to 16 cm tall. *Roots* flexuous. *Stem* abbreviated, terete, slender, to 1.5 cm long, monophyllous, covered by a glumaceous, imbricating, acute sheath to 2 cm long, dry-papyraceous with age. *Leaf* oblong-elliptic, obtuse, minutely retuse, the midvein protruding abaxially into a small apicule, 11–16 × 1.7–2.2 cm, gradually tapering toward the base into a deeply conduplicate-rounded petiole with ancipitous margins, subcoriaceous. *Inflorescence* produced laterally from the apex of the stem, without annulus, emerging from a short, spathaceous, acute, carinate bract ca. 2 mm long, a successively, many flowered (to 19+), distichous, congested raceme to 27 cm long; peduncle flattened, ancipitous, to 20 cm long, with three distant, imbricating-tubular, ancipitous, acute bracts, 9–10 mm long; rachis fractiflex, almost completely covered by the floral bracts. *Floral bracts* tubular-amplexant, strongly conduplicate-ancipitous, broadly ovate, acute, uncinata in lateral view, 8–10 × 8–9 mm. *Pedicel* cylindrical, subclavate, glabrous, 8–10 mm long, persistent. *Ovary* linear, subtrigonal, 6 mm long, orange. *Flowers* with pale orange dorsal sepal, striped with darker orange, the lateral sepals, petals and lip bright orange, the column pale orange. *Sepals* densely papillose in the inner surface except at the base, where they

are semihyaline, the lateral ones fleshy and thickened along the external margin, the dorsal one thinner; dorsal sepal erect, elliptic-lanceolate, five-veined, acuminate, geniculate at the middle, 27 × 8 mm; lateral sepals lanceolate, acuminate, ending into a filiform mucro, three-veined, 24 × 5 mm, connate at the base ca. 4 mm to form a deeply saccate mentum in front to the column foot, with a prominent keel abaxially along the midvein, the margins slightly revolute-thickened. *Petals* small, linear-ligulate, falcate, subspathulate, retuse, provided with a filiform mucro in the sinus, 4.5 × 1.0 mm, univeined, the apex and the distal labellar margin papillose. *Lip* small, arched-convex in natural position, thinly articulate with the column foot by a hyaline claw, ligulate-spathulate when expanded, rounded-subretuse, 5.5 × 1.8 mm, the central portion provided with a pair of thin, elevated keels converging and running to the base of the apical lobe. *Column* arched, semiterete, 5–6 mm long without the foot, margins of the stigma dilated into semirhombic, crenulate, obtuse, membranous wings, the clinandrium apically tridentate, flanked by a small tooth laterally; column foot forward-projecting, fleshy, incurved, ca. 2.0 mm long. *Anther cap* cucullate, ovate, strongly keeled above, the keel protruding into a small mucro, two-celled. *Pollinia* two, ligulate-obovate, semiconvex, the subhyaline base flattened, minutely uncinata, lacking caudicles. *Fruit* not seen.

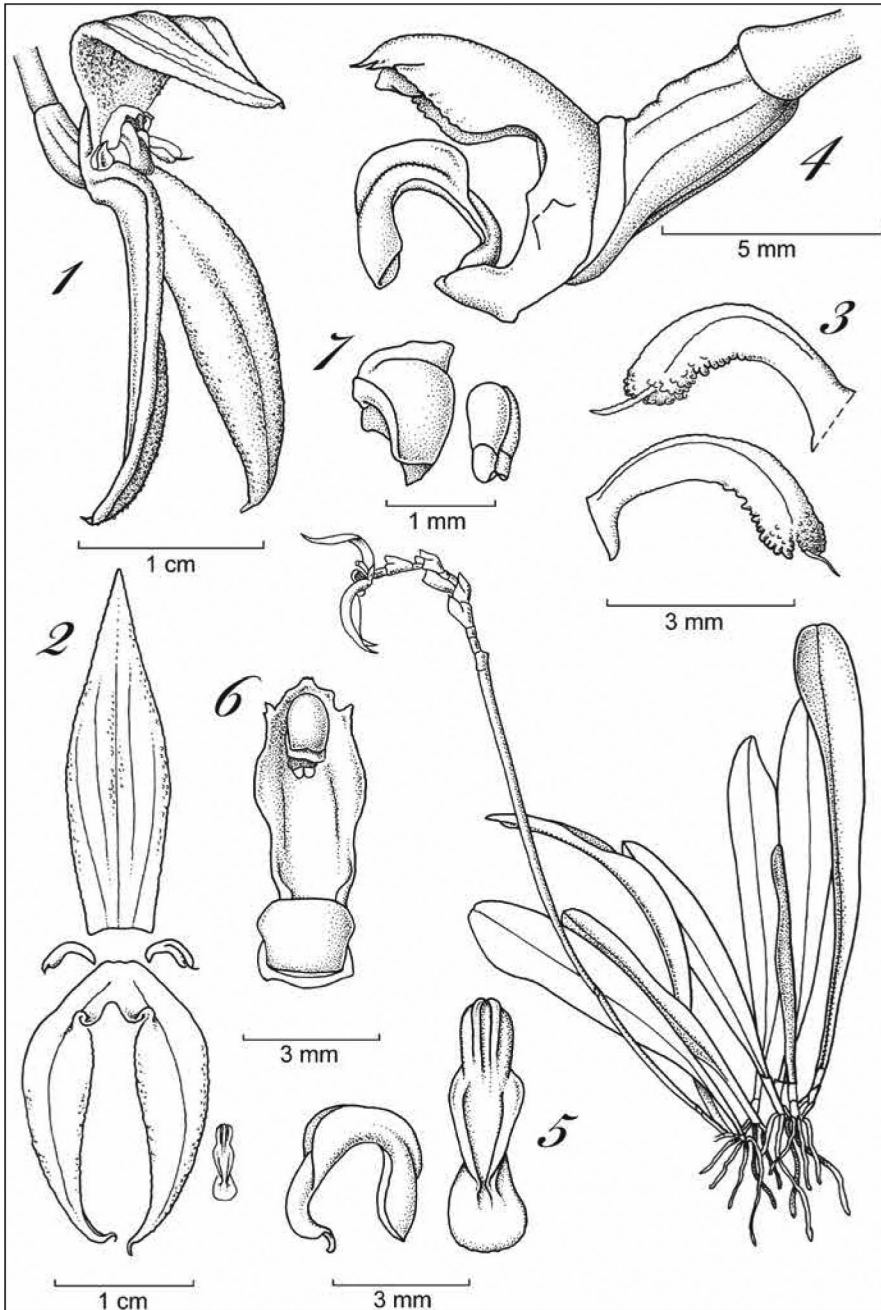
The plant that served as the type for *Spe. endotrachys* was collected by Auguste R. Endrés along the Barranca River in San Ramón, Costa Rica, and, without a great deal of accompanying information, described in 1876 by Heinrich Gustav Reichenbach. Nevertheless, as he frequently did, Endrés prepared a meticulous description and detailed illustration of the species that was never published (Pupulin et al. 2011, 2013). He assigned the provisional name "*Pleurothallis mellifera*" to the undescribed species, and explained himself in the description by stating that "sepals scabrous in inner surface (exuding honey)." He would also note that the "inner surface of the sepals slightly viscous, much visited by a small fly." None

of it was mentioned by Reichenbach.

The subject was more or less dropped until Chase (1985) observed a group of fruit flies of the genus *Drosophila* visiting and pollinating what he believed was *Spe. endotrachys*. Karremans et al. (2015) found that *Spe. endotrachys* and its relatives release pheromones that congregate the flies on the flowers, and that they do indeed produce drops of nectar on the apices of the papillae on the surface. The flies linger for hours on the flowers, walking from one sepal to the other looking for the sugar-rich exudate. They are occasionally trapped between the lip and column while wandering and eventually remove the pollinaria when exiting.

Specklinia endotrachys had been traditionally known as a highly variable species, relatively common along its wide distribution from Mexico to Venezuela. Nevertheless, when a specimen of *Spe. endotrachys*, collected by Mario Blanco in 1999, flowered for the first time in 2007 at the Lankester Botanical Garden and it became clear that *Spe. endotrachys* wasn't a single species with high variability, but different species clustered under one name. The specimen that was collected close to Monteverde on the Atlantic slope of the Tilarán mountain chain in Costa Rica at about 3,300 feet (1,000 m) elevation, is represented here by the botanical painting. Pupulin et al. (2012) showed that several closely related yet well distinguished species were disguised under a single name, and that the true *Spe. endotrachys* is endemic to Costa Rica. In fact, the species is known only from a few specimens from three different localities in the Guanacaste and Tilarán mountain ranges in the north of the country at elevations between 2,300 and 3,600 feet (700–1,100 m).

Species of the *Spe. endotrachys* group have quite a unique morphology. The tufted plants with very short ramicauls covered by loose bracts are reminiscent of *Masdevallia* Ruiz & Pav., whereas the long ancipitous inflorescence might be more like that of *Kraenzlinella* Kuntze. The yellow-orange to red-orange flowers, up to 20 borne in slow succession, and large sepals completely covered with papillae, are unlike any other pleurothallids. Luer (2004) found *Spe. endotrachys* so unique



Specklinia endotrachys. The plant.

1. Flower.
2. Dissected perianth.
3. Petals.
4. Column and lip, lateral view.
5. Lip, front and side views.
6. Column, ventral view.
7. Anther and pollinia.

All drawn from *M. Blanco 861* (JBL-spirit) by Esmée Winkel.

that he gave it generic status under the name *Empusella* (Luer) Luer. Nevertheless, DNA data show that they belong in genus *Specklinia* Lindl. That relationship is apparent when considering the pollinia that are narrowed and hooked at the base and lack caudicles, typical of the genus. From its close relatives *Spe. endotrachys* can be easily distinguished by the caespitose plants (creeping in *Specklinia remotiflora* Pupulin & Karremans), long floral bracts that conceal the pedicel, the orange flowers (yellow in *Specklinia pfavii* [Rchb.f.] Pupulin & Karremans), the slightly twisted lateral sepals that do not cross (conspicuously twisted and crossed in *Specklinia spectabilis*) and the

distinctly retuse petals provided with a mucro (sharp point or spine) abruptly inserted within the sinus (truncate in *Specklinia dunstervillei* Karremans, Pupulin & Gravend., *Spe. pfavii* and *Spe. remotiflora*).

In the greenhouse, *Spe. endotrachys*, as well as other similar species of *Specklinia*, are grown potted in a mix of thin chips of coconut fiber, charcoal and sphagnum moss, with high humidity levels but well drained and without excessive heat. The successively flowered inflorescence produces flowers all year round in slow succession.

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