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Trichotosia velutina

Text by Franco Pupulin/Watercolor by Sylvia Strigari

Tribe PODOCHILEAE

Subtribe ERIINAE

Genus TRICHOTOSIA Blume

Trichotosia velutina (Lodd. ex Lindl.) Kraenzl., Pflanz. IV, 50(50): 140. 1911. Basionym: *Eria velutina* Lodd. ex Lindl., Edwards's Bot. Reg. 26: Misc. 86. 1840. Syn.: *Pinalia velutina* (Lodd. ex Lindl.) Kuntze, Revis. Gen. Pl. 2: 679. 1891. Type: Singapore. "[...] Brought to Messrs. Loddiges [...] by Mr. Cuming, *H. Cuming s.n.* (K). Heterotypic synonyms: *Dendrobium sessile* Gagnep. Bull. Mus. Natl. Hist. Nat., sér. 2, 22: 396. 1950. Syntypes: Cochinchina. Ile de Phu-cuoq; Duong-dang, *E. Poilane 27279* (P); Bien-hoa, *E. Poilane 19726* (P). *Eria monticola* var. *hirsuta* Hook. f., Fl. Brit. India 5: 806. 1890. Type: India. Perak, *E. Scortechini s.n.* (BM).

Epiphytic, caespitose, large herb forming clumps, up to 100 cm tall. Roots produced from the rhizome, mostly at the base of the stems, branching, hairy, orange-brown, 1 mm in diameter. Rhizome slender, creeping, freely branching, 0.8–2.0 cm long between stems, concealed by appressed, imbricating, hairy sheaths. Stems foliaceous, born erect to patent, becoming pendent with age, the apex frequently spreading-suberect, to 100 cm long, 5–7 mm in diameter, terete, the internodes 2.3–6.0 cm long, covered with densely hirsute leaf-sheaths, with 6–12 distichous leaves. Leaves conduplicate, elliptic-lanceolate, acute, fleshy-coriaceous, 9–13 × 2.0–2.5 cm, the midvein strongly prominent abaxially, grass green, covered by dense, short, red-brown hairs on both sides. Inflorescence lateral, subopposite to the articulation of the leaf, 1–5 per stem, a short, congested, few-flowered raceme to 2.2 cm long, covered by 4–6 broadly triangular, thick, minutely hirsute bracts, to 1.5 mm long. Floral bracts subequal to the ovary plus pedicel, broadly lanceolate, deeply concave-cup shaped, minutely hirsute, loose, to 7 mm long. Pedicellate ovary terete-subclavate, ca. 1.3 cm long, white, lanuginose, the hairs soft, long, red-brown. Flowers not completely spreading, resupinate or not, fleshy, white to pale cream, the lip tinged pink at the base, the midlobe yellowish, the anther dark brown; the sepals externally provided with orange-red hairs, the petals

sparsely covered within with slender, white hairs, the lip covered with sparse, thin, white and orange hairs on both surfaces, the column hairy throughout. Dorsal sepal free, elliptic, obtuse, 9–12 × 3–4 mm. Lateral sepals connate along the proximal margin to form a spur around the base of the lip, triangular-lanceolate, subobtusate, mucronate, faintly tinged with rose at the base, 17 × 7 mm. Petals ligulate-oblong, acute, gently recurved apically, 9–10 × 2 mm. Lip trilobed, spatulate, the base with a long, narrow, funnel-shaped claw, provided with upcurved, short-hairy margins; the lateral lobes suberect, triangular, 1.8–2.1 × 1.0–1.2 cm; midlobe short, notched-bilobed, with deflexed margins; disc with two, erect, longitudinal calli, converging in front to form a funnel-shaped aperture, in front of which there is a small, padded, tufted-hirsute, yellow callus. Column semiterete, straight, dilated toward the apex, ca. 5 mm long, tinged rose at the base and along the foot, provided with a long foot exceeding in length the free portion of the column, ca. 8 mm long, apically incurved, with a hook where the lip is articulated; the anther apical, the transversely elliptic stigma ventral. Anther cap transversely elliptic, cucullate, eight-celled. Pollinia, eight in two pairs of different size, dorsiventrally superposed, ovate, stipitate, laterally flattened, on broad, massive caudiculae. Fruit not seen.

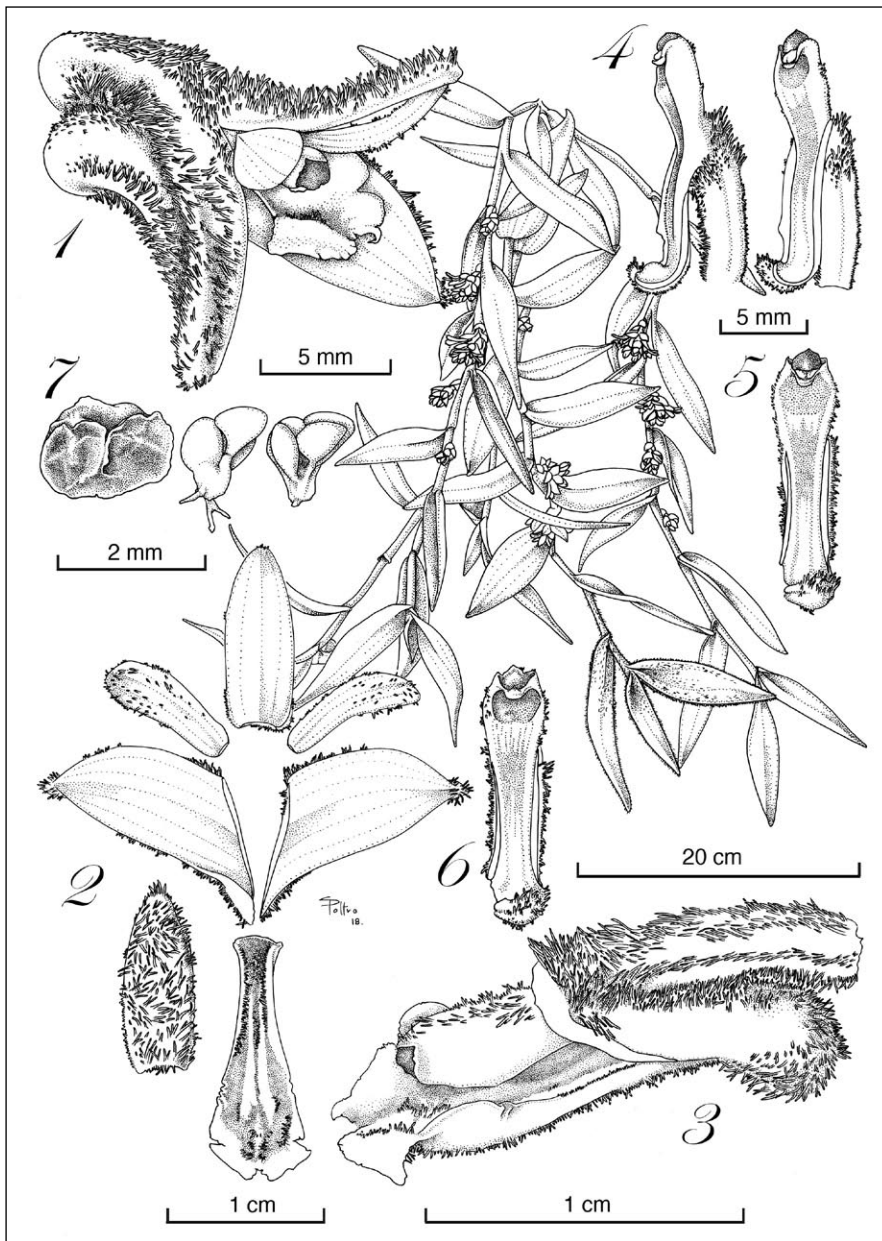
The orchid tribe Podochileae is one of those groups that immediately obliges even the botanist to resort to Pridgeon's and co-editors *Genera Orchidacearum* (2005) to visualize this group of plants in its phylogenetic context. The Podochileae is one of 19 tribes of the Epidendroideae, by far the most diverse among the orchid subfamilies with over 15,000 species. The 28 genera which comprise the Podochileae are restricted to Asia, the Pacific region, and Australia, with the exception of the African *Stoltzia*. They mainly differ from other groups in the Epidendroideae by the presence of a distinct viscidium (Brieger 1981), but the long-suggested relationship of the subtribe with the Dendrobieae and the Vandaeae (i.e., Dressler 1981, 1993) is unsupported in the molecular analyses (Ng 2002, van den Berg et al. 2005). The sampling of DNA sequences confirms

the monophyly of the Podochileae, but its position within the Epidendroideae is still not clear, and the main relationship of the subtribe with the Collabiinae and the Phaiinae has low statistical support. The reedstem habit is likely ancestral among the epidendroid orchids, but the reedstem genera in the Podochileae are nested among taxa with pseudobulbs, and this character has probably evolved several times in the subtribe. In the molecular analyses of the group (Ng 2002, van den Berg et al. 2005), Podochileae is composed of two groups, subtribes Thelasiniae and Eriinae, the latter characterized by the bilaterally flattened pollinia that are not attached to a common caudicle, with one or two viscidia (Cribb et al. 2005). Among Eriinae, *Trichotosia* may be recognized by the presence of eight pollinia, a distinct column foot with the labellum attached to its apex, the many-leaved stems, and the whole plant (stems, leaves, leaf-sheaths, and inflorescences) covered in red-brown hairs.

The German-Dutch botanist Charles Ludwig de Blume (1796–1862) established the genus *Trichotosia* in 1825 in *Bijdragen tot de Flora van Nederlandsch Indië* (*Contributions to the flora of the Dutch Indies*). He derived the generic name from the Greek *-trichotos*, provided with hair, in reference to the typical hairy indumentum of the four Javanese species that he originally described in the new genus. Reduced by Blume itself to a section of the genus *Eria*, *Trichotosia* was reinstated at generic rank by Fritz Kränzlin in 1911, and most modern authors follow this interpretation.

The genus today includes some 40–50 species distributed from the Himalayas and China, throughout Southeast Asia to the Philippines, the Malay Archipelago and the islands of the Pacific east to Vanuatu. New species of *Trichotosia* continue to be described, the last one, *Trichotosia gabriel-asemiana*, described just last year from Indonesian Papua (Mambrasar & Schuiteman 2017).

John Lindley described *Eria velutina* on suggestion of George Loddiges (1786–1846), who received a plant collected in Singapore by Hugh Cuming (1791–1865), dismissing it as “a singular plant of no beauty.” The specific epithet *velutina*,



Trichotosia velutina. The plant.

1. Flower.
2. Dissected perianth (the dorsal sepal also shown in dorsal view).
3. Column and lip, lateral view.
4. Column in lateral and three quarters views.
5. Column, ventral view.
6. The same, anther removed.
7. Anther cap and pollinarium (two views)

Drawn from JBL-28213 by Sara Poltronieri.

velvety, refers to the stems and leaves densely covered by very short red-brown hairs. Plant hairs or trichomes, are lateral outgrowths of a cell of the epidermal layer and, unlike animal hairs, are often living cells. They provide shade and trap a layer of humid air over the leaf to reduce water loss by evaporation, and also the risk of fungal spore germination. They serve as mechanical barrier to prevent herbivory, and improve photosynthesis through increased non-radiative energy dissipation and higher water use efficiency of the leaves (Ripley et al. 1999).

Trichotosia velutina has been recorded from Indochina (Myanmar to Vietnam) to Malaysia, Indonesia, Borneo, and New Guinea. Considered extinct in Singapore, where it had not been collected since 1892, it was recently rediscovered in the

Nee Soon Swamp Forest (Ang et al. 2012). Plants of *Trichotosia velutina* usually grow low on tree trunks and large branches in open, seasonal forests. A common species in the lowlands of peninsular Malaysia down to sea level, it has been collected up to the premontane forests at about 4,900 feet (1,500 m) above sea level.

At the Lankester Botanical Garden *Trichotosia velutina* is grown in large pots in a shaded area of the cattleya house.

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