

## *Psilochilus tuerckheimii* (Orchidaceae), a new species from Guatemala

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*Psilochilus tuerckheimii* Kolan. & Szlach., a new orchid species from Guatemala is described, illustrated and placed within an identification key to the Central American species of *Psilochilus*. The taxonomic affinity of *P. tuerckheimii* is briefly discussed.

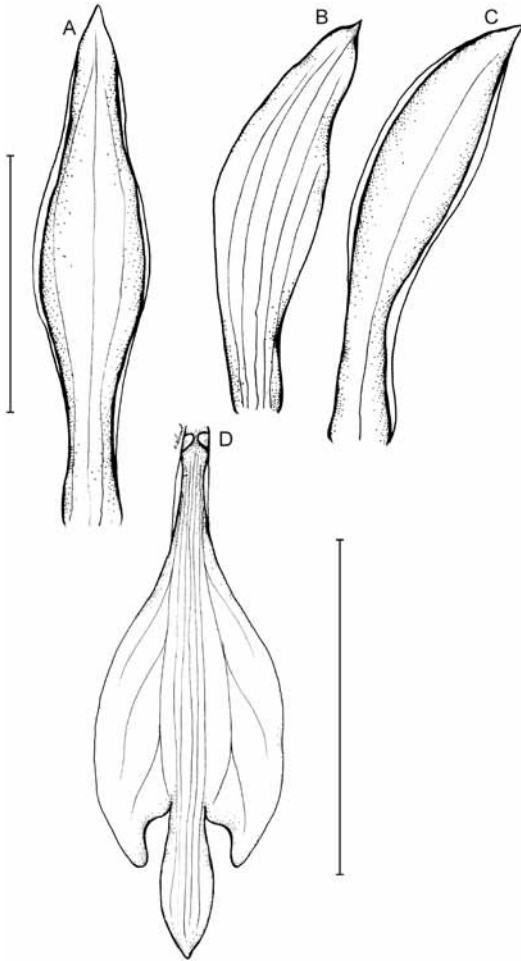
The Neotropical orchid genus *Psilochilus* is a difficult object to study. The plants usually grow in the very thick litter layer of dense, shady montane or submontane forests, and due to their small size and greenish, inconspicuous flowers they are difficult to find during field studies. Therefore, sufficient herbarium material for morphological examination is very sparse.

Due to its superficial similarity to another vanilloid orchid genus, *Pogonia*, *Psilochilus* was synonymized with the former soon after being proposed by Barbosa Rodrigues (1882). Its restoration in the generic rank was proposed by Ames (1922), but subsequently it was often still treated as *Pogonia* by many orchidologists (e.g. Williams 1956).

The lack of the good material to study was one of the reasons for the confusions in defining *Psilochilus*' relationships with other orchid genera and placing it in the existing taxonomic systems. Due to the superficial similarity to the genus to *Pogonia* it was first classified together with this taxon within Triphoreae (Lindley 1830–1840). Although originally Schlechter (1911–1914) placed both taxa in Nerviliinae, he later changed his mind and transferred both genera together with *Monophyl-*

*lorchis* to Vanilleae (Schlechter 1926). Dressler and Dodson (1960) proposed placing those plants (together with *Nervilla*) into Pogoniinae. Over 50 years after the suggestion made by Ames (1922) that Triphoreae should not be placed under Pogoniinae, Brieger (1975) reestablished Schlechter's Nerviliinae to accommodate *Triphora* and *Nervilla*. The reconsideration of *Psilochilus*' position resulted in establishment of the new tribe Triphoreae by Dressler (1979). While later classifications varied considerably, the classification of *Psilochilus* together with *Triphora* remained. Also the latest studies on the generic taxonomy (Rothacker 2007) supported a close phylogenetic relationship between *Psilochilus* and *Triphora*. The genera are easily distinguished by the form of the leaf blade and underground system. The leaf blade is reduced in *Triphora* and well-developed in *Psilochilus*. Tuberoid storage organs are known in *Triphora*, in contrast to *Psilochilus* where fleshy roots are laxly distributed along rhizome.

While the representatives of *Psilochilus* are found from Mexico to Brazil, only one, *P. macrophyllus*, is widely distributed within the whole geographical range of the genus. Our recent research on the Colombian orchids resulted in



**Fig. 1.** *Psilochilus tuerckheimii* (drawn by S. Nowak from the holotype). — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bars = 10 mm.

descriptions of two new species closely related to this taxon (Kolanowska & Szlachetko 2012, Kolanowska 2013). During the examination of the Central American material of *Psilochilus* we came across Guatemalan plants identified as *P. macrophyllus*, but completely different from that species in the lip morphology. We believe that those specimens represent a new species which is described and illustrated here.

***Psilochilus tuerckheimii* Kolan. & Szlach., sp. nova (Fig. 1)**

TYPE: Guatemala. Dept. Alta Vera Paz, ca. 1525 m, Jan 1878, *Türckheim* 52 (holotype W).

ETYMOLOGY: Dedicated to Hans von Türckheim (1853–1920), who conducted botanical explorations in Guatemala at the end of the 19th century and collected the type specimen.

Plant up to about 25 cm tall. Stem leafy throughout. Leaves very short petiolate, petiole less than 0.8 cm long; blade 4–6 cm long, 2–3 cm wide, narrowly ovate, subobtuse. Inflorescence terminal, several-flowered. Floral bracts small, about 5 mm long. Ovary about 15 mm long. Dorsal sepal about 20 mm long, 4 mm wide, somewhat concave, apex obtuse, 3-veined. Lateral sepals 18 mm long, 4 mm wide, oblong-ob lanceolate, somewhat falcate, subobtuse, 1-veined. Petals 17 mm long, 3.2 mm wide, narrowly elliptic, somewhat falcate, subacute, 5-veined. Lip about 16 mm long, 6 mm wide, 3-lobed, clawed; claw about 3.5 mm long with two small thickenings at base; lateral lobes about 9 mm long, 2.5 mm wide, obliquely elliptic, apices rounded at apex, distant from middle lobe, curved, directed inwards; middle lobe about 5 mm long, 2 mm wide, narrowly elliptic, shortly obtuse at apex; disc with a median thickened vein running from claw up to lip apex. Gynostemium typical for the genus.

DISTRIBUTION: So far known only from the type locality.

*Psilochilus tuerckheimii* belongs to the *P. macrophyllus* complex characterized by a relatively short claw and sessile or subsessile leaves. However, the lip form, especially the shape of the middle lobe, is unique in the genus. The apices of the lateral lobes are falcate, rounded, distant from the middle lobe and directed inwards. In *P. macrophyllus* lateral lobes of the lip run close to the middle lobe. The ligulate-elliptic lip middle lobe has smooth margins and the disc is ornamented by a single thickened vein running along the disc centre, and two knob-like thickenings at the base. In contrast, the lip middle lobe of *P. macrophyllus* is suborbicular, with crisped margins, and the disc has several thickened veins (Fig. 2).

**Key to the Central American species of *Psilochilus***

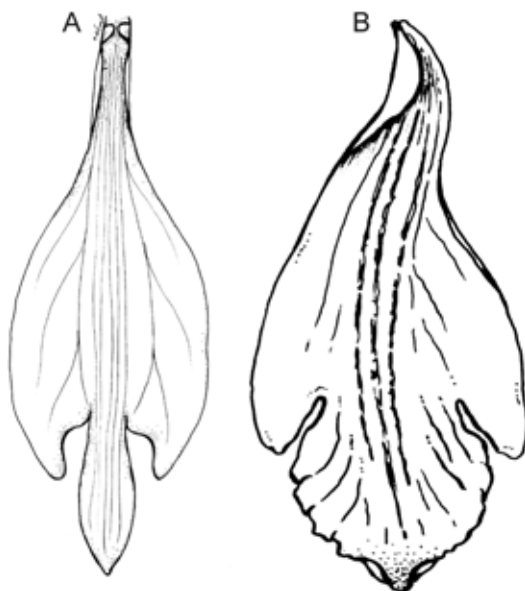
1. Leaves distinctly petiolate ..... 2
1. Leaves sessile or subsessile ..... 3
2. Lip claw with a distinct keel ..... *P. carinatus*
2. Lip claw not keeled ..... *P. physurifolius*
3. Lip middle lobe suborbicular ..... *P. macrophyllus*
3. Lip middle lobe narrowly elliptic ..... *P. tuerckheimii*

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## References

- Ames, O. 1922: A triandrous form of *Psilochilus macrophyllus*. — *Orchidaceae: Illustrations and Studies of the Family Orchidaceae, Issuing from the Ames Botanical Laboratory* 7: 45–48.
- Ames, O. & Correll D. S. 1952: Orchids of Guatemala. — *Fieldiana Botany* 26: 1–395.
- Barbosa Rodrigues, J. 1882: *Genera et Species Orchidearum Novarum*, vol. 2. — Typographia Nacional, Sebastianopolis.
- Brieger, F. G. 1970–1978: Entwicklung, Aufbau und structure der Orchideen und Neottioideae. — In: Brieger, F. G., Matatsch, R. & Senghas, K. (eds.), *Die Orchideen*, R. Schlechter, 3 ed.: 1–10. Verlag Paul Parey, Berlin und Hamburg.
- Dressler, R. L. 1979: The subfamilies of the Orchidaceae. — *Selbyana* 5: 197–206.
- Dressler, R. L. & Dodson, C. H. 1960: Classification and phylogeny in the Orchidaceae. — *Annals of the Missouri Botanical Garden* 47: 25–68.
- Hamer, F. 1984: *Psilochilus macrophyllus*. — In: Dodon, C. H. (ed.), *Icones Plantarum Tropicarum* 1(12): pl. 1142. The Marie Selby Botanical Gardens, Sarasota.
- Kolanowska, M. & Szlachetko, D. L. 2012: A new species of *Psilochilus* (Triphoreae, Orchidaceae) from Colombia. — *Systematic Botany* 37: 352–355.
- Kolanowska, M. 2013: *Psilochilus antioquiensis* (Triphoreae, Orchidaceae), a new species from Colombia. — *Annales Botanici Fennici* 50: 115–118.
- Lindley, J. 1830–1840: *The Genera and Species of Orchidaceous Plants*. — Ridgways, London.
- Rothacker, E. P. 2007: *The primitive Epidendroideae (Orchidaceae): phylogeny, character evolution and the systematics of Psilochilus (Triphoreae)*. — Ph.D. thesis, Graduate School, Ohio State University.
- Schlechter, R. 1911–1914: Die Orchidaceen von Deutsch-Neu-Guinea. — *Feddes Repertorium Specierum Novarum Regni Vegetabili, Beiheft* 1: 1–1079.
- Williams, L. O. 1956: An enumeration of the orchidaceae of Central America, British Honduras, and Panama. — *Ceiba* 5: 1–256.
- Schlechter R. 1926: Das System der Orchidaceae. — *Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem* 9: 563–591.



**Fig. 2.** Comparison of the lip shapes of *Psilochilus tuerckheimii* (A, drawn by S. Nowak from the holotype) and *P. macrophyllus* (B, redrawn by A. Król from Hamer 1984: pl. 1142).