

Notes on the *Psilochilus modestus* complex (Orchidaceae), with descriptions of three new species

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Three new species of the orchid genus *Psilochilus*, *P. alicjae* Kolan., *P. hatschbachi* Kolan. and *P. sanderianus* Kolan. are described and illustrated. The novelties belong to the *Psilochilus modestus* complex which is characterized by shortly petiolate leaves and a shortly clawed lip middle lobe. The taxonomic affinities of the new species are discussed.

The Neotropical orchid genus *Psilochilus* was described by Barbosa-Rodrigues (1882). That author found it similar to *Physurus* in its habit, and to *Pogonia* in the floral characters. Barbosa-Rodrigues (1882) treated *Pogonia* as a genus that included also species currently classified under *Cleistes*, and placed *Psilochilus* in Arethuseae. As *P. modestus* was the only species mentioned by Barbosa-Rodrigues in the genus description it was selected as generitype of *Psilochilus* by Garay (1978: 47).

Psilochilus modestus was soon transferred to *Pogonia* (Cogniaux 1893) and after that the new species corresponding to *Psilochilus* were usually described under *Pogonia* (e.g. Schlechter 1920). The necessity for reinstatement of *Psilochilus* as a separate genus was indicated by Ames (1922), who included *Pogonia macrophylla* in *Psilochilus* (Fig. 1). The subsequent morphological and molecular studies confirmed Ames' assumption and currently *Psilochilus* is widely accepted by taxonomists as a distinct genus.

Curiously, the only inconsistency in the infrageneric taxonomy of *Psilochilus* concerns

its type, *P. modestus*. Regrettably, the specimen from the original collection which was the basis of the species description was lost and currently an illustration of the plant published by Barbosa-Rodrigues in *Iconographie des Orchidées du Brésil*, vol. III, part IV, serves as neotype (Rothacker 2007). Specimens of *P. modestus* are medium-sized reaching about 40 cm. Their shortly but distinctly petiolate leaves are ovate-lanceolate. Their greenish flowers are arranged in a several- to many-flowered racemose inflorescence. All tepals are nearly similar and the lip is 3-lobed, and shortly clawed. The lip lateral lobes are oblong-triangular and acute while the middle lobe is semi-elliptic to suborbicular, emarginate, and with crenate margins (Fig. 2).

Recently Rothacker (2007) synonymized under *P. modestus* another species with petiolate leaves, namely *P. maderoi* (Fig. 3). The latter was first described in *Pogonia* by Schlechter (1920) who later transferred it to *Psilochilus* (Schlechter 1926). That species differs from *P. modestus* in numerous floral characters, such as the long lip claw, which constitutes over 1/3

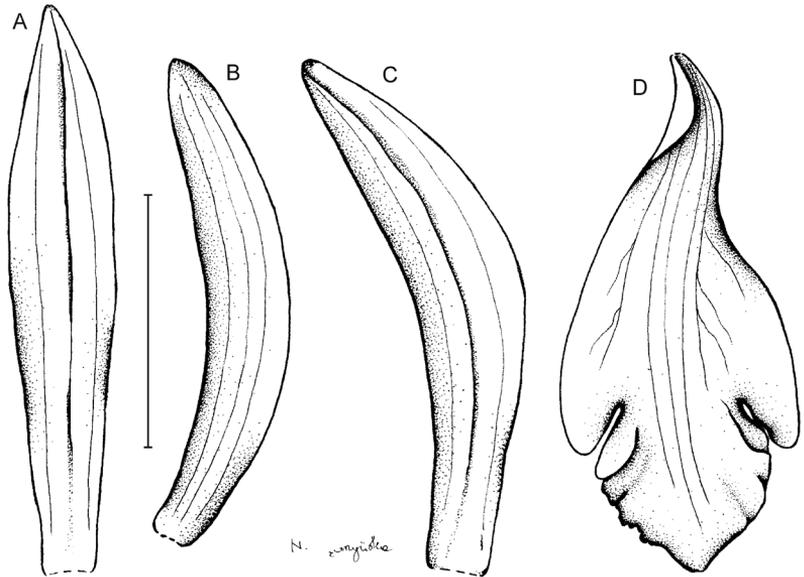


Fig. 1. *Psilochilus macrophyllus*. — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bar = 5 mm. Redrawn by N. Ołędryńska from Hamer (1984).

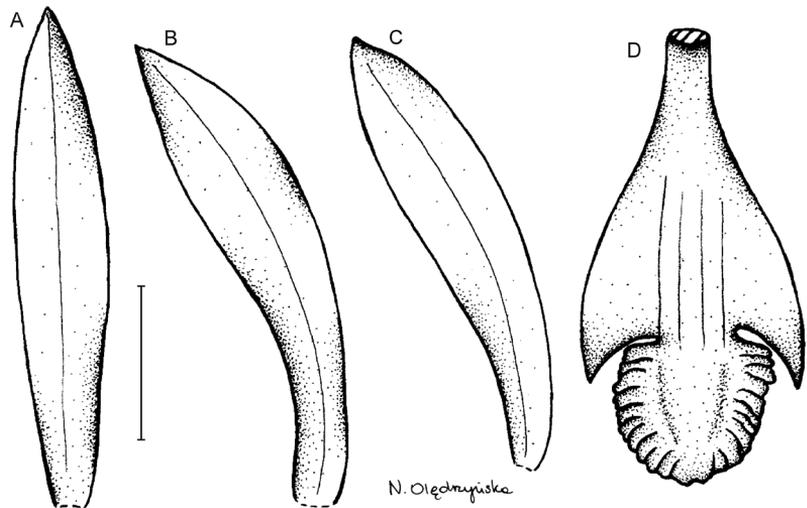


Fig. 2. *Psilochilus modestus*. — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bar = 5 mm. Redrawn by N. Ołędryńska from the original illustration by Barbosa-Rodrigues (1882).

of the whole lip length (*vs.* claw usually less than 1/4 of the lip length), the obliquely oblong-ovate, apically rounded lip lateral lobes (*vs.* lateral lobes obliquely triangular, acute) and the shortly clawed, apiculate lip middle lobe (*vs.* middle lobe more sessile, emarginate).

Psilochilus maderoi is known so far exclusively from Colombia and *P. modestus* was reported from Bolivia, Brazil, Ecuador, Colombia and Venezuela; however, the reports from Ecuador and Colombia should be verified.

The synonymization may be a result of incorrectly selected type specimen of *P. maderoi* by Rothacker (2007). He cited *Lehmann 10038* as the type, which is not in accordance with the protologue. The only specimen of *P. maderoi* cited by Schlechter (1920) is *Madero s.n.* As the original herbarium specimen probably was destroyed in Berlin-Dahlem during World War II, the lectotype of the species should be the original drawing by Schlechter (1929: Tafel 10, Nr 37).

Recent studies on *Psilochilus* resulted in

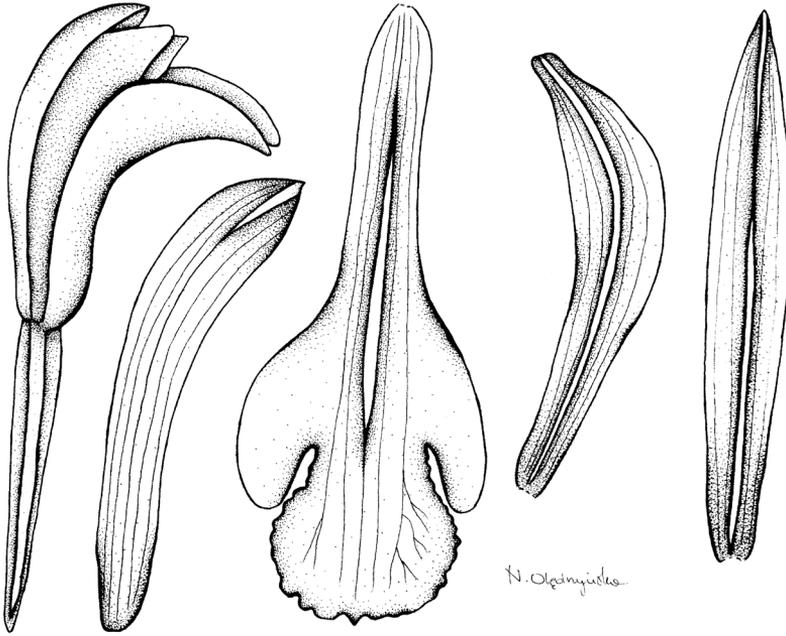


Fig. 3. *Psilochilus maderoi*. Redrawn from Schlechter (1920) illustration of by N. Olszowyńska.

description of three additional species in the *Psilochilus macrophyllus*-complex (Kolanowska & Szlachetko 2012, 2013, Kolanowska 2013), characterized by sessile or subsessile leaves. During the studies conducted in herbaria F, K and NY three further undescribed species were discovered. All of them resemble *P. modestus* in their habit, but may be easily distinguished from that species by their floral characters. As so far the three species described here are known exclusively from their type localities, their conservation status should be defined as DD (data deficient) according to the red list of International Union for Conservation of Nature (IUCN 2010).

***Psilochilus sanderianus* Kolan., sp. nova**
(Fig. 4)

TYPE: Brazil. Imported by F. Sander & Co. Collected probably in Oct 1893 (holotype K).

ETYMOLOGY: Dedicated to Frederick Sander (1847–1920), “The Orchid King”, the owner of an important orchid nursery and the editor of the journal *Reichenbachia*.

Lower part of stem absent in holotype. Upper leaves 5.6–6.7 cm long, 2.1–2.5 cm wide, nar-

rowly ovate, with an indistinct petiole about 0.5 cm long. Inflorescence short, about 2.3 cm long, several-flowered. Ovary about 16 mm long. Floral bract about 12 mm long. Dorsal sepal 26 mm long, 4 mm wide oblong-lanceolate, obtuse, 3-veined. Lateral sepals 20.2 mm long, 3.7 mm wide, oblong-lanceolate, obtuse, falcate, 3-veined. Petals 21 mm long, 3.8 mm wide, oblong-lanceolate, subacute, falcate, 1-veined. Lip 21 mm long, 7 mm wide, clawed, claw 5.6 mm long, with two small thickenings at base; 3-lobed; lateral lobes 1.9 mm wide, obliquely ovate, obtuse; middle lobe 8 mm long, 4.6 mm wide, narrowly elliptic, apex slightly retuse; disc with three somewhat thickened central veins running along the whole lip length.

Psilochilus sanderianus resembles *P. modestus*, but is easily distinguished from it by the relatively small lip, which is much shorter than the dorsal sepal (vs. all floral segments nearly equal in size), the obtuse lip lateral lobes (vs. acute) and the narrowly elliptic lip middle lobe. Vegetatively *P. sanderianus* is similar to *P. physurifolius*, but the lip form of the latter species differs from that of *P. sanderianus* by the inconspicuous lip lateral lobes and suborbicular to semielliptic lip middle lobe.

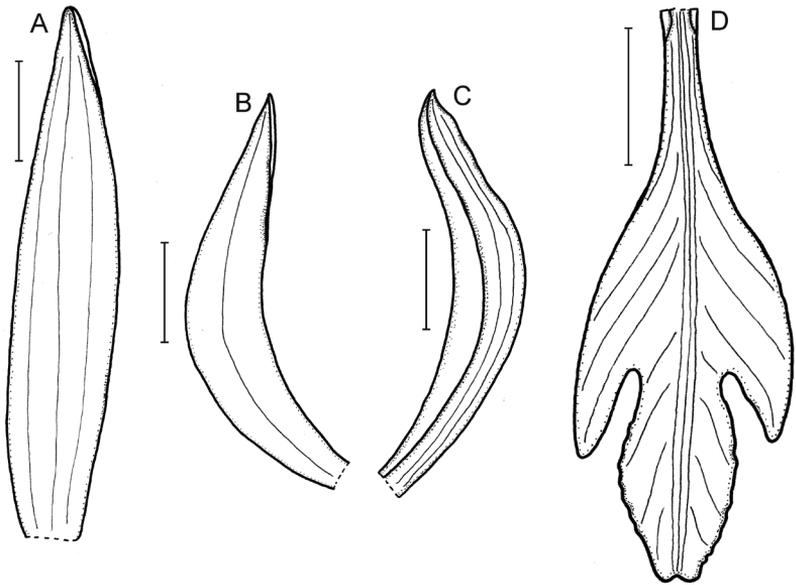


Fig. 4. *Psilochilus sandeirianus*, dissected perianth (from the holotype). — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bars = 5 mm.

***Psilochilus alicjæ* Kolan., sp. nova** (Fig. 5)

TYPE: Brazil. Ipiranga, Serra do Mar. 15 Jan. 1917. *P. Dusén* 14461 (holotype NY).

ETYMOLOGY: Dedicated to the author's mother, Alicja.

Plant up to about 26 cm tall. Leaves petiolate; petiole 1–1.6 cm long; blade up to 9 cm long and 3.8 cm wide, narrowly ovate to ovate, obtuse. Inflorescence up to 7 cm long, several-flowered. Ovary up to 17 mm long. Floral bracts 8–12 mm long, broadly ovate, obtuse. Dorsal sepal 16 mm long, 3 mm wide, linear-lanceolate, obtuse, 3-veined, concave in natural position. Lateral sepal 24 mm long, 5.6 mm wide, falcate, oblong-elliptic, acute, 5-veined. Petals 21 mm long, 4 mm wide, falcate, narrowly elliptic, 5-veined. Lip 18 mm long, 7 mm wide across lateral lobes, shortly clawed, 3-lobed; claw about 2.5 mm long; lateral lobes about 3.2 mm wide, obliquely ovate, rounded at apex; middle lobe clawed, about 8.5 mm long in total, 4.8–5 mm wide, more or less rhombic in outline, apex subacute, margin minutely crenate, disc with 5 slightly thickened middle veins. Gynostemium about 15 mm long.

Vegetatively this species resembles *P. maderoi* and *P. modestus*, but the lip form serves to easily distinguish those taxa. The lip claw of *P. maderoi* is distinctly longer than in *P. alicjæ*

and its lip middle lobe is shortly clawed, more or less suborbicular (vs. middle lobe rhombic in outline). The lip of *P. modestus* is shortly clawed, but unlike in *P. alicjæ* the lateral lobes are acute and the middle lobe is sessile and suborbicular. From *P. dusenianus* this species differs by the very long lip lateral lobes extending almost to the middle part of the middle lobe (vs. lateral lobes reaching the base of the middle lobe claw).

***Psilochilus hatschbachii* Kolan., sp. nova** (Fig. 6)

TYPE: Brazil. Paraná. Curitiba. Quatro Barras. Morro Mãe Catira. Encosta de morro. Alt. 110 m a.s.l. 12 Jan. 1967. *G. Hatschbach* 15684 (holotype F; isotypes F!).

ETYMOLOGY: Dedicated to G. Hatschbach, the collector of the type specimens.

Plant up to 32 cm tall. Leaves shortly petiolate; petiole up to 1.2 cm long; blade up to 8 cm long, 2.3 cm wide, narrowly ovate, obtuse. Inflorescence about 6 cm long, several-flowered. Flower cleam-lavender, lip flushed dark red. Ovary 17–20 mm long. Floral bracts up to 7 mm long, broadly ovate. Dorsal sepal 21 mm long, 3 mm wide, oblong-lanceolate, obtuse, 5-veined, concave in natural position. Lateral sepals 22 mm long, 3.6 mm wide, falcate, narrowly

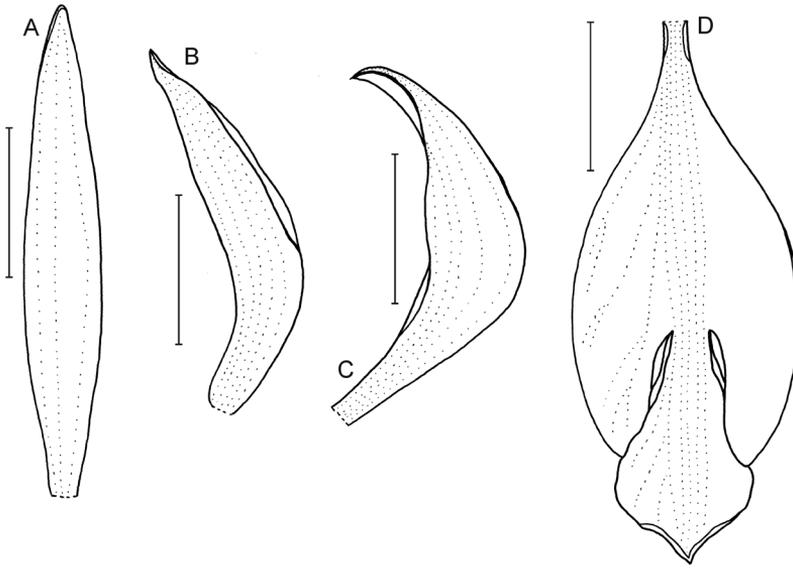


Fig. 5. *Psilochilus alicjae*, dissected perianth (from the holotype). — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bars = 5 mm.

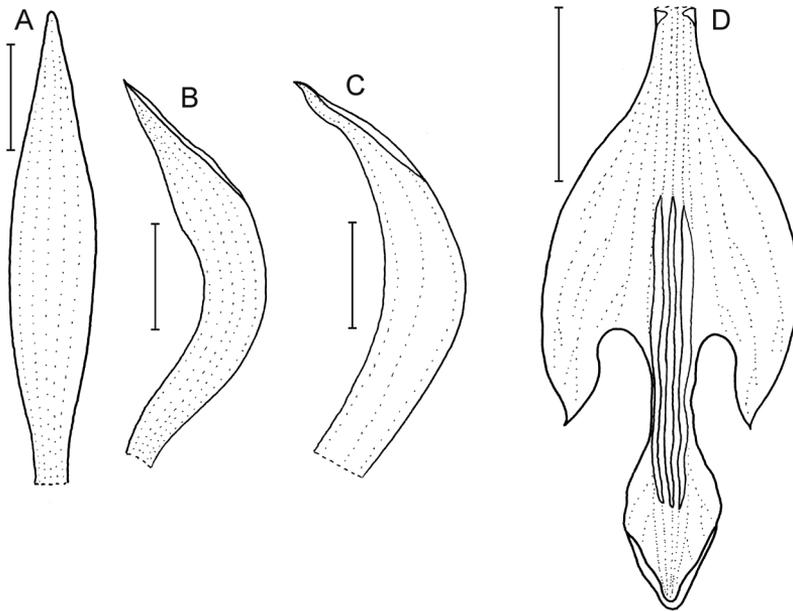


Fig. 6. *Psilochilus hatschbachii*, dissected perianth (from the holotype). — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepal. — **D:** Lip. Scale bars = 5 mm.

elliptic, subacute, 3-veined. Petals 20 mm long, 3 mm wide, falcate, narrowly elliptic, obtuse, 5-veined. Lip 17 mm long, 7 mm wide across lateral lobes, shortly clawed, 3-lobed; claw about 3 mm long; lateral lobes 2.6 mm wide, obliquely ovate, acuminate; middle lobe 4.8 mm long in total, long-clawed, elliptic above, obtuse, apical margin incurved; isthmus between lobules distinctive; disc ornamented with 5 thickened veins

and 3 delicate lamellae extending from basal third up to middle lobe center. Gynostemium about 15 mm long.

This species resembles *P. modestus* from which it however is easily distinguished by the acuminate lip lateral lobes, the long-clawed, elliptic lip middle lobe and especially by the presence of lamellae on the lip disc. This kind of ornamentation was not observed in any other

Psilochilus species. The lip of the new species is somewhat similar to that of *P. dusenianus*, from which it differs by the acuminate lip lateral lobes (*vs.* rounded) and narrowly elliptic lip middle lobe (*vs.* middle lobe suborbicular to subrhombic).

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