



Pterichis avicula (Orchidaceae), a new species from Peru

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Abstract

Pterichis avicula is described based on Peruvian material. The morphological characteristic of the species is provided together with an illustration of its floral segments and comparison with similar orchids. This new species resembles the Ecuadorian *P. tunguraguona* and *P. seleniglossa* in the lip form which is lunate-reniform above a truncate base. *Pterichis avicula* is easily distinguished from the former by the shape of the petals and the proportionally larger lip middle lobe. Unlike the new species, *P. seleniglossa* has ovate, small lip middle lobe which constitutes less than half of the total lip length and the sinus between the lobes in this species is indistinctive.

Key words: Andes, Cranichideae, Oxapampa, taxonomy, terrestrial orchids

Introduction

The orchid flora of Peru includes about 2900 species (Goicochea *et al.* 2019), but new species of Orchidaceae are frequently described from this country (Horna *et al.* 2021, Parizaca *et al.* 2021, Rizo Patrón 2022) based on fieldwork or as a result of revision of herbarium materials. In 2006 as much as 775 endemic orchids were recorded in Peru (Roque & León 2006). The majority of Peruvian Orchidaceae are epiphytic plants (Iblish *et al.* 1996) but terrestrial species have also received much scientific attention in recent years (Trujillo & Delgado Rodríguez 2011, Trujillo *et al.* 2016).

One of the most interesting, but still understudied genera is *Pterichis* Lindley (1840: 444). It was first described to classify newly discovered plant named *P. galeata* Lindley (1840: 445) that exhibited a combination of characters typical for Cranichideae Pfeiffer (1874: 901) (helmet-shaped lip) and Spirantheae Endlicher (1842: 19) (plant habit). Despite these mixed features, both morphological and genetic data indicated that *Pterichis* should be classified in Cranichideae (Dressler 1981, Chase *et al.* 2015) and the monophyletic character of the genus has been confirmed by molecular studies (Salazar *et al.* 2009).

As currently recognized, the genus *Pterichis* comprises almost 50 species distributed from Costa Rica and Jamaica to Bolivia (Kolanowska *et al.* 2021). Its representatives are usually terrestrial herbs characterized by tuberous, clustered roots and a loosely sheathed scape. The leaves of these plants are rosulate but often absent during flowering. The flowers of *Pterichis* are non-resupinate and arranged in a loose to dense raceme. The sessile, concave, fleshy lip is usually densely papillate and/or ornamented with a series of swollen, knob-like cells along the margins. Two sections are recognized in *Pterichis*—representatives of the nominal section are characterized by petals that are free from the dorsal sepal and species classified in section *Acraea* have their petals adnate or agglutinate to the dorsal sepal (Kolanowska & Szlachetko 2016).

So far 12 species of *Pterichis* have been reported from Peru (Kolanowska & Oledrzynska 2015), but the recent revision of herbarium material revealed the existence of an additional species in this country.

Materials and methods

This research is based on morphological study of *Pterichis* specimens deposited in the Peruvian herbarium USM

which were examined in addition to previously studied material from AAU, AMES, COL, CUVC, F, FLAS, FMB, G, HA, HUA, K, LOJA, LPB, MO, NY, P, PSO, Q, QAP, QCA, QCNE, QPLS, RPSC, UGDA, VALLE, and W. Herbaria acronyms used in this article follow Thiers (2024). First, the form of the leaf (if present) as well as the length and the surface of the scape sheath were studied. The perianth segments were observed after softening the flowers in boiling water and examined using a stereoscopic microscope. The analytical illustrations of perianth segments were prepared for all studied specimens.

Taxonomy

Pterichis avicula Kolan., sp. nov. (Figure 1).

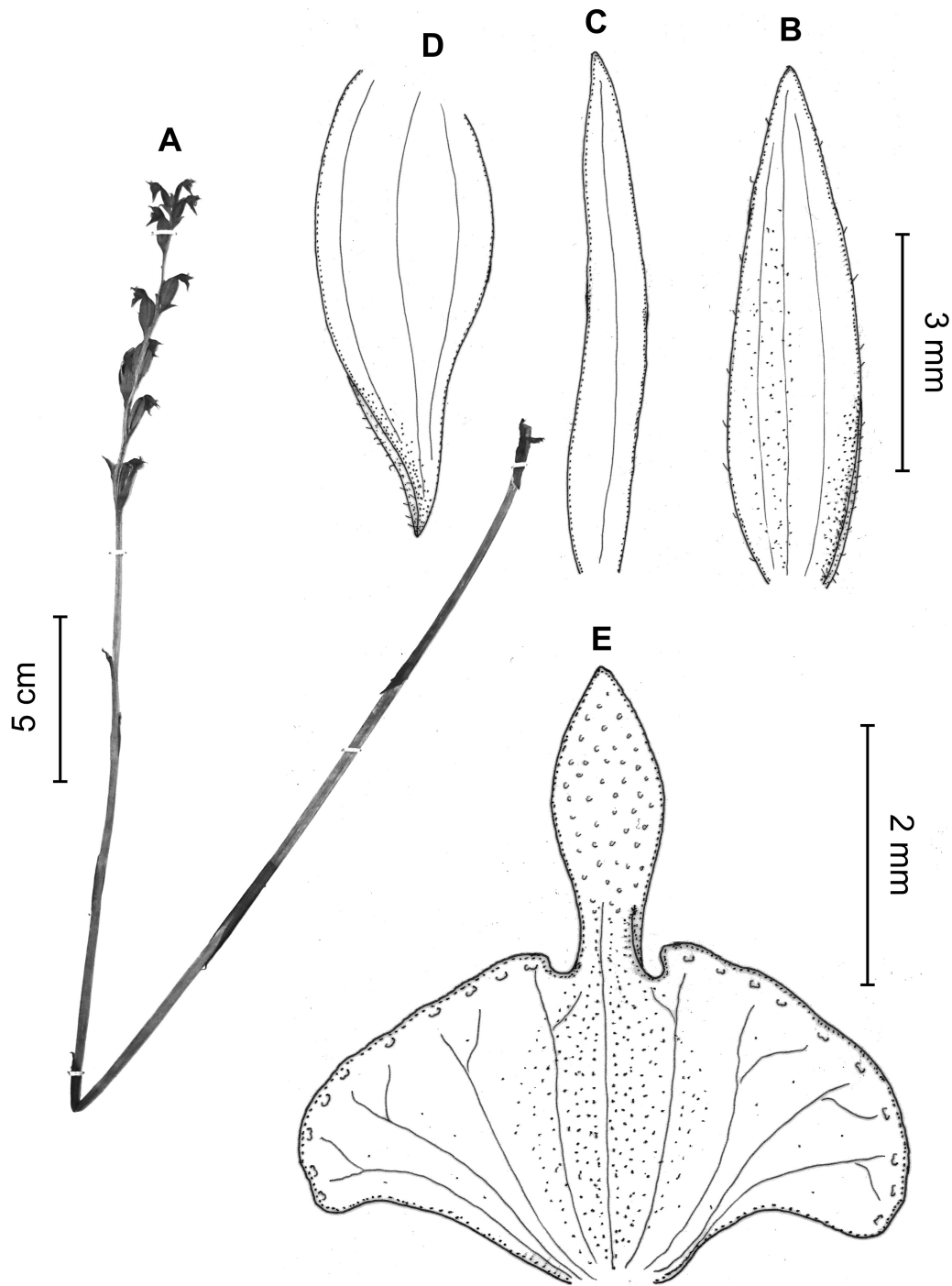


FIGURE 1. *Pterichis avicula*. **A.** Plant Habit. **B.** Dorsal sepal. **C.** Petal. **D.** Lateral sepal. **E.** Lip.

Type:—PERU. Pasco: Prov. Oxapampa. Vivero JBM. 10°34'54"S 75°24'26"W, 1830 m, 27 May 2007, E. Bacerra 1476 (holotype: USM!, isotype: HOXA).

Species characterized by the narrow, linear, 1-veined petals, the prominent, longly truncate lip base, the large lip middle lobe which is elliptic in outline and lip disc being ornamented with a row of knob-like projections along the margins. The novelty resembles *P. seleniglossa* which differs in broader petals, the ovate, small lip middle lobe which constitutes less than half of the total lip length and the indistinctive sinus between the lobes.



FIGURE 2. Geographic location of *Pterichis avicula*.

Description:—Epiphytic plant (according to the note on herbarium label) up to 56 cm long, scape glabrous, enclosed in 6 tubular sheaths, the uppermost sheaths sparsely ciliate. Leaves apparently absent during flowering. Inflorescence 11 cm long, rather laxly 10-flowered. Floral bracts 6–12 mm long, ciliate. Pedicellate ovary about 8.5 mm long, pubescent. Dorsal sepal 5.7–6.0 × 2.3–2.5 mm, concave, oblong-elliptic, subobtuse, 3-veined, externally ciliate. Lateral sepals 6.5–6.8 × 1.7–1.9 mm, obliquely ovate, acuminate, acute, 3-veined, externally ciliate. Petals adnate to dorsal sepal, 6.4–6.8 × 0.9–1.0 mm, widest near the base, oblong-lanceolate, subobtuse, 1-veined, glabrous. Lip 4.7–4.9 × 4.6–4.8 mm, base truncate, lateral lobes semilunate-reniform in outline; with a distinct sinus between middle and lateral lobes; middle lobe 2.0–2.5 mm long, constituting almost a half of the total lip length, narrowly elliptic, densely glandular; disc glandular-ciliate, with one row of knob-like projections along the margins, 9-veined, veins apically branching. Gynostemium about 2.5 mm long.

Distribution and ecology:—So far, the species is known only from *locus classicus* in Oxapampa. However, according to the collector note it was obtained from the plant nursery which is very uncommon as *Pterichis* species are rarely cultivated (Figure 2).

Etymology:—The specific epithet *avicula* (Lat.—small bird) is given in reference to the lip outline shape which resembles a flying bird.

Taxonomic discussion:—This new species resembles Ecuadorian *P. tunguraguona* Reichenbach ex Szlachetko & Kolanowska (2014: 331) in the lip form which is lunate-reniform above truncate base but it is easily distinguished by the form of petals (widest near the middle, narrowly ovate above narrow claw, 3-veined in *P. tunguraguona*) and proportionally larger lip middle lobe (less than 1/3 of the total lip length in *P. tunguraguona*). The other similar species is also Ecuadorian *P. seleniglossa* Schlechter (1921: 42) which also has a prominent, truncate lip base and linear to lanceolate, 1-veined petals. However, unlike the new species its middle lobe is ovate, small, constituting less than half of the total lip length and the sinus between the lobes is indistinctive. Noteworthy, both Schweinfurth (1958) and Garay (1978) considered *P. seleniglossa* as synonym of *P. triloba* (Lindley 1845: 386) Schlechter (1911a: 389), but previous research indicated that the two species can be distinguished based on petal venation (Kolanowska *et al.* 2021). The large lip middle lobe is characteristic for Bolivian *P. boliviana* Schlechter (1911b: 436) but in this species the lip is much larger, its base is not long truncate, the middle lobe is ovate, strongly reflexed and the lip disc is ornamented with two rows of knob-like projections. The last species which could be potentially confused with *P. avicula* is Colombian *P. tomentosula* Schlechter (1920: 56) which is easily distinguished from the new species based on petals form (semi-ovate-lanceolate in *P. tomentosula*), presence of two rows of knob-like projections on the lip disc and the shorter, ovate lip middle lobe. The comparison of petal and lip form of all discussed species is presented in Table 1 and illustrated in Figure 3. Also, an identification key allowing to distinguish *P. avicula* from similar taxa is provided. It should be noted that only one specimen of newly described species was found during the study and the morphological characteristic provided is based on observation of the plant habit and dissection of three flowers in USM.

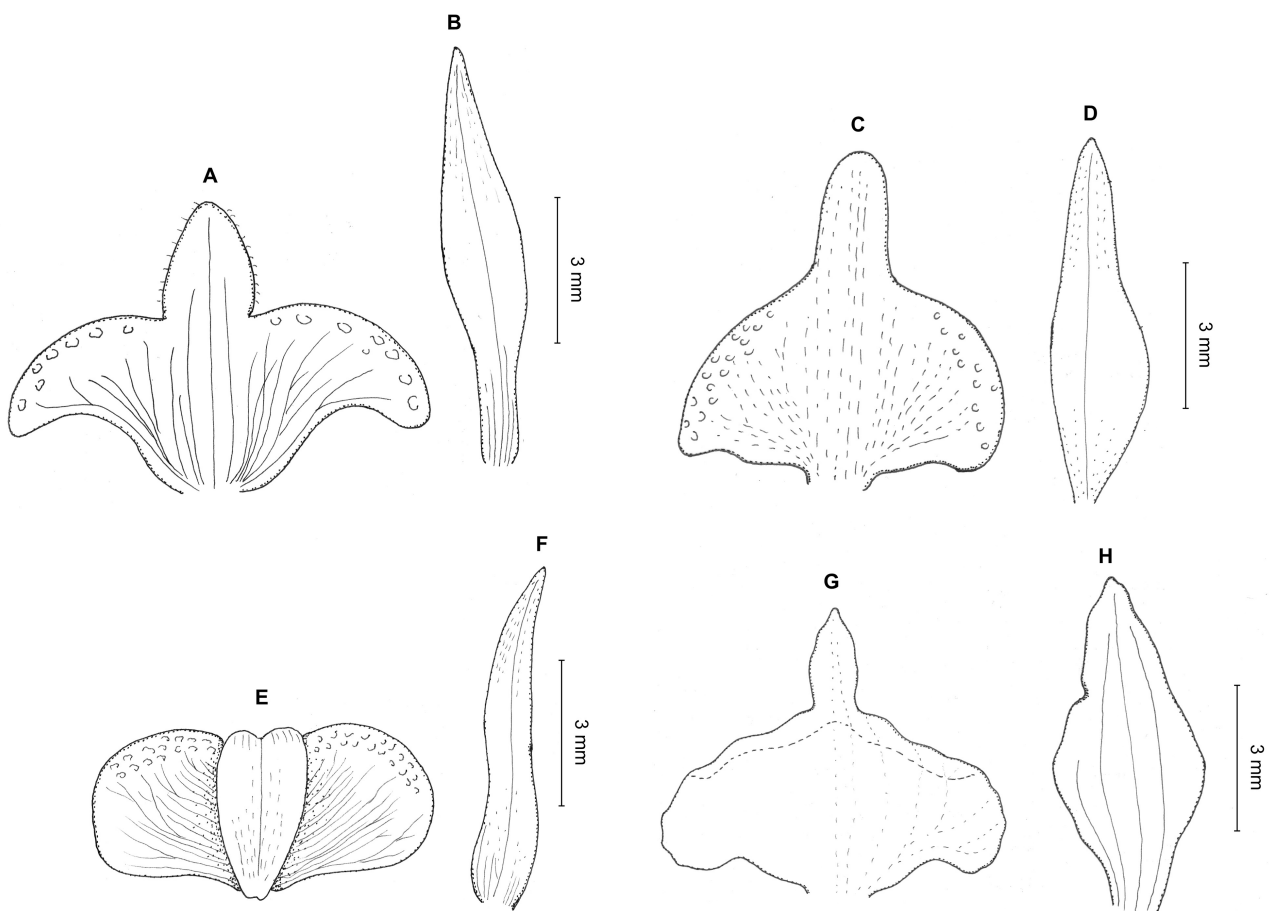


FIGURE 3. Lip (and petals of *Pterichis* species resembling *P. avicula*. **A–B** *P. seleniglossa*, **C–D**. *P. tomentosula*, **E–F**. *P. boliviana*, **G–H**. *P. tunguraguona*.

TABLE 1. Comparison of petal and lip form of *P. avicula* and similar species.

Character	<i>P. avicula</i>	<i>P. tunguraguona</i>	<i>P. seleniglossa</i>	<i>P. tomentosula</i>	<i>P. boliviana</i>
Petal-size	6.4–6.8 × 0.9–1.0 mm	7.0–9.0 × 2–4 mm	6.5–9.0 × 1.7–2.2 mm	7 × 2–2.2 mm	7 × 1.5 mm
Petal-shape	oblong-lanceolate, widest near the base	narrowly ovate above narrow claw, widest near the middle	linear-lanceolate or linear, widest near the middle	ovate-lanceolate to semi-ovate–lanceolate, much widened near the middle	linear-ligulate, widest near the base
Petal-venation	1-veined	3-veined	1-veined	1-veined	1-veined
Lip-size	4.7–4.9 × 4.6–4.8 mm	5.8–6.5 × 8.0–9.5 mm	3.2–6.8 × 7.5–9.0 mm	7 × 6.5 mm	7 × 6 mm
Lip-basal part	base longly truncate, lateral lobes semilunate-reniform in outline;	base shortly truncate, lateral lobes reniform-lunate in outline with small auricles	base shortly truncate, lateral lobes lunate in outline	base shortly truncate, lateral lobes reniform in outline, concave in lower part	base shortly cuneate, lateral lobes subreniform in outline
Lip-middle lobe	middle lobe constituting almost a half of the total lip length, narrowly elliptic, densely glandular	middle lobe constituting about 1/3 of the lip length, ligulate, papillate	middle lobe less than half of the lip length, elliptic, obtuse, papillate	middle lobe less than half of the lip length, oblong-ligulate, obtuse, ciliate on margin	middle lobe about as long as the lateral lobes, ovate and strongly reflexed
Lip-venation	disc 9-veined, veins apically branching	disc 7- or 9-veined, veins apically branching	disc 7- or 9-veined, veins apically branching	disc with more than 15 branching veins	disc primarily 9-veined, veins branching
Lip-ornamentation	single row of knob-like projections along margins	numerous small glands along margins	one row of knob-like projections along margins	two rows of knob-like projections along margins	two rows of knob-like projections along margins

Key to identification of *P. avicula* and similar species

1. Petals 3-veined, narrowly ovate above narrow claw *Pterichis tunguraguona*
- Petals 1-veined, linear-ligulate to ovate-lanceolate 2
2. Petals widest near the middle, lip middle lobe less than half of the total lip length 3
- Petals widest near the base, lip middle lobe constituting about a half of the total lip length 4
3. Lip lateral lobes lunate in outline *Pterichis seleniglossa*
- Lip lateral lobes reniform in outline *Pterichis tomentosula*
4. Lip middle lobe narrowly elliptic, lip disc with a single row of knob-like projections along margins *Pterichis avicula*
- Lip middle lobe ovate and strongly reflexed, lip disc with two rows of knob-like projections along margins *Pterichis boliviana*

Acknowledgments

I would like to express my gratitude to Julio Torres and Delsy Trujillo for providing access to the USM herbarium collection. I sincerely appreciate all valuable comments and suggestions made by anonymous Reviewers, which helped me to improve the quality of the manuscript.

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