

Short note

Filling the gap in the geographical range of *Pterichis aragogiana* (Orchidaceae) and notes on the nominal section of *Pterichis* in Peru

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Abstract. The orchid genus *Pterichis* comprises almost 50 species distributed from Costa Rica and Jamaica to Bolivia with the greatest diversity observed in the northern Andes. Recent studies on *Pterichis* resulted in the description of numerous new species across South America. One of the most interesting findings was *P. aragogiana*, which is characterized by a spider-like appearance of the flowers. This orchid was described based on material collected in Ecuador and a year later its occurrence was confirmed in Bolivia. Here *P. aragogiana* is reported for the first time from Peru based on data obtained in USM herbarium. The morphological characteristic of the species is provided together with an illustration and information about its geographical distribution. An updated key for identification of Peruvian representatives of the nominal section of *Pterichis* is presented.

Keywords. Andes, Cranichideae, taxonomy, terrestrial orchids.

Resumen. El género de orquídeas *Pterichis* comprende casi 50 especies distribuidas desde Costa Rica y Jamaica hasta Bolivia, siendo los Andes septentrionales la zona con mayor diversidad. Estudios recientes sobre *Pterichis* han dado lugar a la descripción de numerosas especies nuevas en toda Sudamérica. Uno de los hallazgos más interesantes fue *P. aragogiana*, que se caracteriza por el aspecto de araña de sus flores. Esta orquídea se describió a partir de material recolectado en Ecuador y, un año más tarde, se confirmó su presencia en Bolivia. Por primera vez, se informa de la presencia de *P. aragogiana* en Perú, basándose en datos obtenidos en el herbario USM. Se proporcionan las características morfológicas de la especie, junto con una ilustración e información sobre su distribución geográfica. Se presenta una clave actualizada para la identificación de los representantes peruanos de la sección nominal de *Pterichis*.

Palabras clave. Andes, Cranichideae, orquídeas terrestres, taxonomía.

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Title in Spanish: Actualización de la distribución geográfica de *Pterichis aragogiana* (Orchidaceae) y notas sobre la sección nominal *Pterichis* en Perú.

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The neotropical genus *Pterichis* was proposed by Lindley in 1840 to classify newly described *P. galeata* Lindl. (Lindley 1940) which was characterized by a combination of features typical for Cranichideae (helmet-shaped lip) and Spirantheae (plant habit). Five years after this description, Lindley (1845) proposed another new genus, *Acraea* Lindl. which accommodated plants similar to *Pterichis* but characterized by petals adnate to the dorsal sepal. Initially Lindley included two species in this taxon: *A. triloba* Lindl. and *A. parvifolia* Lindl. With the exception of Reichenbach (1878), the subsequent taxonomists did not accept Lindley's concept of *Acraea* and placed all species representing this genus in *Pterichis* (e.g., Schlechter 1911). Over a century later Kolanowska & Szlachetko (2017) resurrected *Acraea* recognizing it as the section of *Pterichis* that differs from the nominal section based on adnation of the petals to the dorsal sepal (versus petals free).

Representatives of *Pterichis* are usually terrestrial herbs with tuberous, clustered roots. Their scape is loosely sheathed and the leaves are rosulate but often absent during flowering. Flowers are non-resupinate and arranged in a loose to dense raceme. Their sessile, concave, fleshy lip is usually densely papillate or/and ornamented with a series of swollen, knob-like cells along the margins. The monophyletic character of *Pterichis* has been confirmed by molecular studies (Salazar & al. 2009) and taxonomists agree with its placement in Cranichideae (Chase & al. 2015).

As currently recognized, the genus *Pterichis* comprises almost 50 species distributed from Costa Rica and Jamaica to Bolivia with the greatest diversity observed in the northern Andes (Kolanowska & al. 2021). Recent revisions of herbarium material have revealed the existence of numerous undescribed species along the geographical range of the genus (Kolanowska & al. 2020, 2021). One of the most interesting findings was *P. aragogiana* Kolan. & Szlach. which is characterized by an elongated floral segments, which give the flowers a spider-like appearance (Kolanowska & Szlachetko 2019). This orchid was described based on material collected in Ecuador and a year later its occurrence was confirmed in Bolivia (Kolanowska & al. 2020), but until now it was not known from Peru.

The orchid flora of Peru includes about 2900 species classified in 204 genera (Goicochea & al. 2019), but new species of Orchidaceae are frequently described based on herbarium material and as a result of field studies conducted (e.g., Navarro Romo 2020; Rizo Patrón 2022; Gutiérrez & al. 2023). So far 13 species of *Pterichis* have been reported from Peru (Kolanowska & Olędzyska 2015, Kolanowska 2025). The first record of *P. aragogiana* from Peru presented in this paper fills the gap in the geographical range of this orchid.

Pterichis specimens deposited in the Peruvian herbarium USM were examined in addition to 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. Specimens collected outside Peru were used as reference material to evaluate the diagnostic usefulness of particular morphological characters. Herbaria acronyms used in this article follow Thiers (2025). First, the form of the leaf (if present) as well as the length and the surface of the scape sheath were examined. The perianth segments were observed after softening the flowers in boiling water and examined under a stereoscopic microscope. The information provided on the herbarium specimen labels was used for georeferencing. Distribution maps were generated using ArcGIS 10.8.2 (2021).

Taxonomic treatment

Pterichis aragogiana Kolan. & Szlach., Ann. Bot. Fenn. 56(1–3): 176 (2019). Type: Ecuador, Prov. Azuay, L.B. Holm-Nielsen & al. 29519 (holotype: AAU!). Fig. 1.

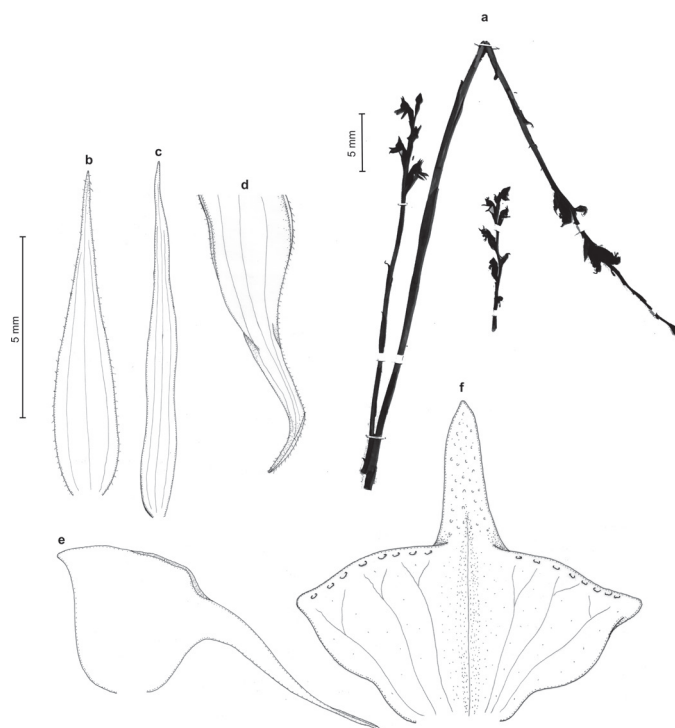


Fig. 1. Flower and habit of Peruvian *Pterichis aragogiana*: **a**, habit; **b**, dorsal sepal; **c**, petal; **d**, lateral sepal; **e**, lip, side view; **f**, lip, expanded [a–e, Edquén O. 1974 (USM); f, León & Young 1807 (USM)].

Description.—Plants 27–55 cm tall, leafless during flowering. Scape glandular in upper third, enveloped in 6–8 tubular, acute sheaths of which upper ones are glandular-ciliate. Inflorescence 5–8.5 cm long, densely ciliate. Flowers externally olive-green, petals and internal part of sepals orange-red, lip orange red flushed with violet in basal part of lip middle lobe, sepals externally densely glandular-ciliate. Floral bracts 9–20 mm long, ovate, cucullate, externally densely ciliate. Pedicellate ovary 9–14.5 mm long, densely glandular-ciliate. Dorsal sepal 9–14.5 × 2–4.5 mm, ovate in lower half, apical part narrow, rolled up along margins hence appearing acuminate-caudate, subobtusate to acute, 3-veined. Petals 10–14.5 × 1–1.5 mm, free from dorsal sepal, linear, subobtusate to acute, 3-veined (rarely 1-veined), glabrous. Lateral sepals 9–15 × 2.7–3.5 mm, obliquely ovate in lower half, rolled up along margins above giving an acuminate-caudate appearance, subobtusate to acute, 3-veined. Lip 9–12 × 9–11 mm, hastate, basal part reniform above truncate base; middle lobe ca. half of the lip length, ovate, acuminate; disc glandular, primarily 7- or 9-veined, lateral veins branching, ornamented with knob-like projections along margins. Gynostemium 3–5.8 mm long. Fruit a capsule about 12 mm long.

Specimens examined.—PERU. **Pasco:** Prov. Oxapampa. Restos bosque montano pluvial, 2600 m, [−75.395, −10.579], 23 Apr. 1988, B. León & K. Young 1807 (USM). **San Martín:** Prov. Rioja. Distr. Pardo Miguel. Bosque de Protección Alto Mayo. Chisquilla. Espaldas de las 7 Lagunas, 3590 m, [−77.597, −5.892], 1 Mar. 2020, J. Edquén O. 1974 (USM). ECUADOR. **Azuay:** Páramo de Matanga, km 25 on road Sigsig–Gualaquiza (old muletrack), W of the pass, 3150 m, [−78.773, −3.152], 14 Dec. 1980, L.B. Holm-Nielsen & al. 29519 (AAU). **Morona-Santiago:** Road from Sigsig to El Pangui. Páramo Matanga. 3°11'49"S, 78°46'08"W [−78.768, −3.196], 4 Oct. 2003, M. Blanco & al. 2515 (FLAS!). **Zamora Chinchipe:** Cerro Plateado, [−78.707, −4.604], Á.J. Pérez 1355 (QCA). BOLIVIA. **La Paz:** Parque Nacional Madidi, entre Chunkani y Tokoake, 2673 m, [−68.134, −15.477], 25 Jun. 2005, A.F. Fuentes & al. 8771 (LPB). Fig. 2.

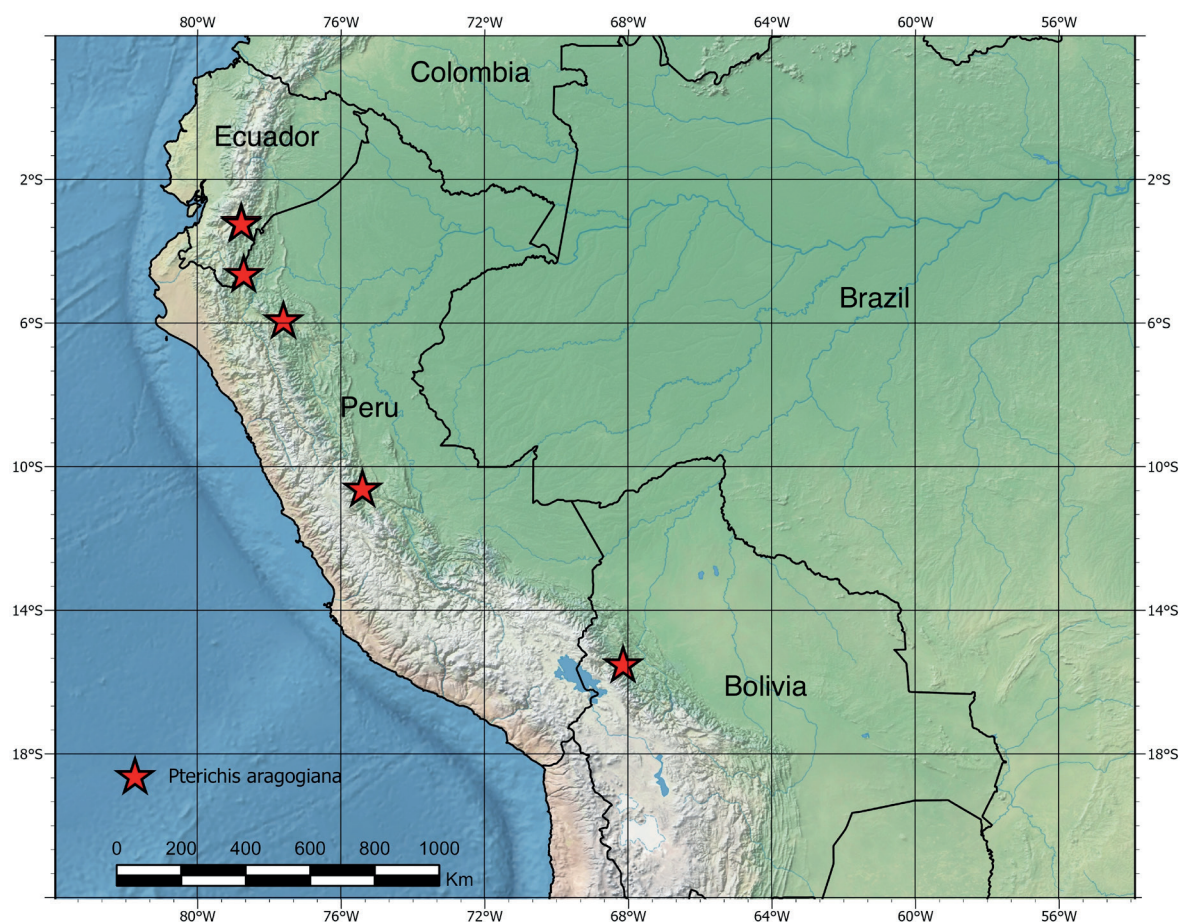


Fig. 2. Updated geographical distribution of *Pterichis aragogiana*.

Distribution and habitat.—Distributed in the Andes from Ecuador to Bolivia at altitudes of 2600–3590 m. Growing in wet montane forest and paramo, also along trails and roads. Flowering in March, April, June, October, and December.

Remarks.—*Pterichis aragogiana* is easily distinguished from all other genus representatives by the spider-like appearance of its flowers. Its petals are free from the dorsal sepal and narrowly linear. In contrast to *P. galeata* and *P. leucoptera* Schltr., the petals are subequal in length to the sepals. In *P. aragogiana* the lip middle lobe is much elongated, a feature not observed in any other representative of the nominal section of *Pterichis* occurring in Peru. Unlike in *P. diuris* Rehb. f., the lip disc of *P. aragogiana* is ornamented with knob-like projections. In addition, in the natural position the sepals' margins of *P. aragogiana* are strongly inrolled, giving the flowers an acuminate-caudate appearance.

In 2015 a key to the identification of Peruvian *Pterichis* was published (Kolanowska & Olędrzyńska 2015), but there *P. leucoptera* and *P. macroptera* Schltr. were incorrectly included in the section *Acraea* instead of the section *Pterichis*. Furthermore, the photograph of the type specimen of *P. weberbaueriana* Kraenzl. (F, catalogue no. 231982) shows petals being adnate to the dorsal sepal, which places this species in section *Acraea*. This means that the nominal section *Pterichis* is now represented in Peru by seven species.

Identification key of Peruvian species of Pterichis within its nominal section

- | | | |
|---|--|----------------------|
| 1 | Petals longer than dorsal sepal | 2 |
| – | Petals subequal in length to dorsal sepal | 4 |
| 2 | Lip cordate to subcordate in outline, equally long and wide or slightly longer than wide | <i>P. galeata</i> |
| – | Lip reniform-semilunate, wider than long | 3 |
| 3 | Lip about 8 × 14 mm, 13-veined, knob-like projections few, about 6 on each lip disc side | <i>P. macroptera</i> |
| – | Lip about 7 × 10 mm, 9-veined, knob-like projections numerous | <i>P. leucoptera</i> |
| 4 | Lip middle lobe elongated, constituting about half of the lip total length, sepals caudate | <i>P. aragogiana</i> |
| – | Lip middle lobe constituting less than half of the total lip length, sepals non-caudate | 5 |
| 5 | Lip disc ornamented with knob-like projections | 6 |
| – | Lip disc lacking knob-like projections | <i>P. macbridei</i> |
| 6 | Lip almost twice wider than long, with basal auricles | <i>P. diuris</i> |
| – | Lip equally long and wide or slightly longer, without basal auricles | <i>P. acuminata</i> |

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AUTHORSHIP CONTRIBUTION STATEMENT

Marta KOLANOWSKA: Conceptualization, Investigation, Methodology, Formal analysis, Writing – original draft, Writing – review & editing.

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