

A taxonomic synopsis of *Acianthera* (Orchidaceae: Pleurothallidinae) in Peru, including two new species

Alexander Damián^{1,2,*}, Nicole Mitidieri³ & Guy Chiron⁴

¹Facultad de Ciencias Ambientales, Universidad Científica del Sur, Lima, Peru.

^{2,3}Posgrado en Botánica Tropical, Facultad de Ciencias Biológicas, Universidad Nacional Mayor de San Marcos, Av. Venezuela, Cdra. 34 s.n., Lima, Peru.

⁴Herbiers, Université de Lyon 1, F-69622 Villeurbanne Cedex, France.

* Author for correspondence: adamian.pz2@gmail.com, <https://orcid.org/0000-0002-0233-9935>

³nicole.mitidieri@unmsm.edu.pe, <https://orcid.org/0000-0001-6045-4491>

⁴g.r.chiron@wanadoo.fr, <https://orcid.org/0000-0003-0971-4715>

Abstract. A taxonomic synopsis of Peruvian *Acianthera* including 35 accepted species is presented. An artificial key and maps for known localities from all these species are also included. *Acianthera berlinensis* sp. nov. and *A. marleniae* sp. nov. are described and illustrated as new species based on specimens collected in the Peruvian regions of Amazonas and Cajamarca, respectively. Information on the distribution and habitat is provided for both new taxa, followed by a discussion comparing the traits that distinguish them from their closest relatives. *A. consatae*, *A. dodsonii*, *A. lamia*, *A. scalpricaulis* and *A. toachica*, previously known only from Ecuador and Bolivia, are herein reported for the first time for the Peruvian flora.

Keywords. *Acianthera berlinensis* sp. nov., *Acianthera marleniae* sp. nov., Amazonas, checklist, taxonomy.

Resumen. Se presenta una sinopsis taxonómica de *Acianthera* en Perú que incluye 35 especies. Se incluye una clave artificial y mapas para las localidades conocidas de todas las especies citadas. *Acianthera berlinensis* sp. nov. y *A. marleniae* sp. nov. se describen como nuevas especies, basadas en especímenes recolectados en los departamentos de Amazonas y Cajamarca. Se ofrece información de su distribución, hábitat y fenología para ambos taxones, seguido de una discusión sobre las características que las distinguen de especies similares. Se citan por primera vez para la flora peruana *A. consatae*, *A. dodsonii*, *A. lamia*, *A. scalpricaulis* y *A. toachica*, anteriormente conocidas solo en Ecuador y Bolivia.

Palabras clave. *Acianthera berlinensis* sp. nov., *Acianthera marleniae* sp. nov., Amazonas, lista taxonómica, taxonomía.

Damián A., Mitidieri N. & Chiron G. 2018. A taxonomic synopsis of *Acianthera* (Orchidaceae: Pleurothallidinae) in Peru, including two new species. *Anales del Jardín Botánico de Madrid* 75 (1): e069. <https://doi.org/10.3989/ajbm.2449>.

Title in Spanish: Una sinopsis taxonómica de *Acianthera* (Orchidaceae: Pleurothallidinae) en Perú que incluye dos nuevas especies.

Received: 23–VI–2016; accepted: 28–II–2018; published on-line: 12–IV–2018; Associate Editor: E. Ortúñez.

INTRODUCTION

Acianthera Scheidw. —Orchidaceae Juss.— is a genus of the subtribe *Pleurothallidinae* Lindl. ex G.Don that consists of approximately 118–220 species (Pridgeon & Chase 2001; Chiron & van den Berg 2012; Chase & al. 2015; Barros & al. 2016; WCSP 2016). Its distribution covers tropical regions from the Antilles and Mexico to Argentina and Uruguay, being Brazil its main centre of biodiversity (Pridgeon 2005). Members of *Acianthera* are generally humid-forest or cloud-forest epiphytes from near sea level to over 2600 m a.s.l. and comprises species with more-or-less fleshy flowers, with connivent sepals, the lateral ones connate, lip articulated with the column, which is winged, and two pollinia (Pridgeon 2005; Luer 1986).

Almost two centuries have passed since Michael Joseph Scheidweiler described *Acianthera* in 1842. After Lindley (1859), species from this group were treated as *Pleurothallis* R.Br. for many decades, keeping the genus

Acianthera under the shade for nomenclatural purposes. Luer (1986) restored the name *Acianthera* as a subgenus of *Pleurothallis* in an attempt to accommodate species characterized by slightly fleshy flowers with connate lateral sepals borne singly or in a raceme from the base of the sessile leaf. Nevertheless, recent phylogenetic studies based on DNA (Pridgeon & Chase 2001; Pridgeon & al. 2001; Chiron & van den Berg 2012; Chiron & al. 2012; Karremans & al. 2016) provided strong support for the recognition of *Acianthera* as a monophyletic group and the necessity to rank it to the generic level.

In Peru, 35 species of *Acianthera* have been recorded and treated hitherto under *Pleurothallis* (Schweinfurth 1958–1959; Luer 1986, 2004; Brako & Zarucchi 1993; Bennett & Christenson 1993–2001; Ulloa Ulloa & al. 2004; León & al. 2006) (figs. 1, 2). Most of the species occurring in the country are distributed on the northern slope of the Andes —Regions of Huánuco, San Martín,



Fig. 1. Representative species of Peruvian *Acianthera*: **a**, *A. berlinensis* Damian & al., sp nov.; **b**, *A. biseta* Luer; **c**, *A. consatae* (Luer & R.Vásquez) Luer; **d**, *A. decurrens* (Poepp. & Endl.) Pridgeon & M.W.Chase; **e**, *A. discophylla* (Luer & Carnevali) Luer; **f**, *A. dodsonii* (Luer) Karremans & Rincón-Gonzales; **g**, *A. ericae* Luer; **h**, *A. floribunda* (Lindl.) F.Barros; **i**, *A. lamia* (Luer) Pridgeon & M.W.Chase; **j**, *A. lanceana* (Lodd.) Pridgeon & M.W.Chase; **k**, *A. lojiae* (Schltr.) Luer; **l**, *A. marleniae* Damian & al., sp nov. [Photographs: a, h, l, A. Damian; b, f, g, E. Moron; c, S. Olortegui; d, j, L. Ocupa; e, J. Janovec; i, J. Edquen; k, S. Arevalo.]

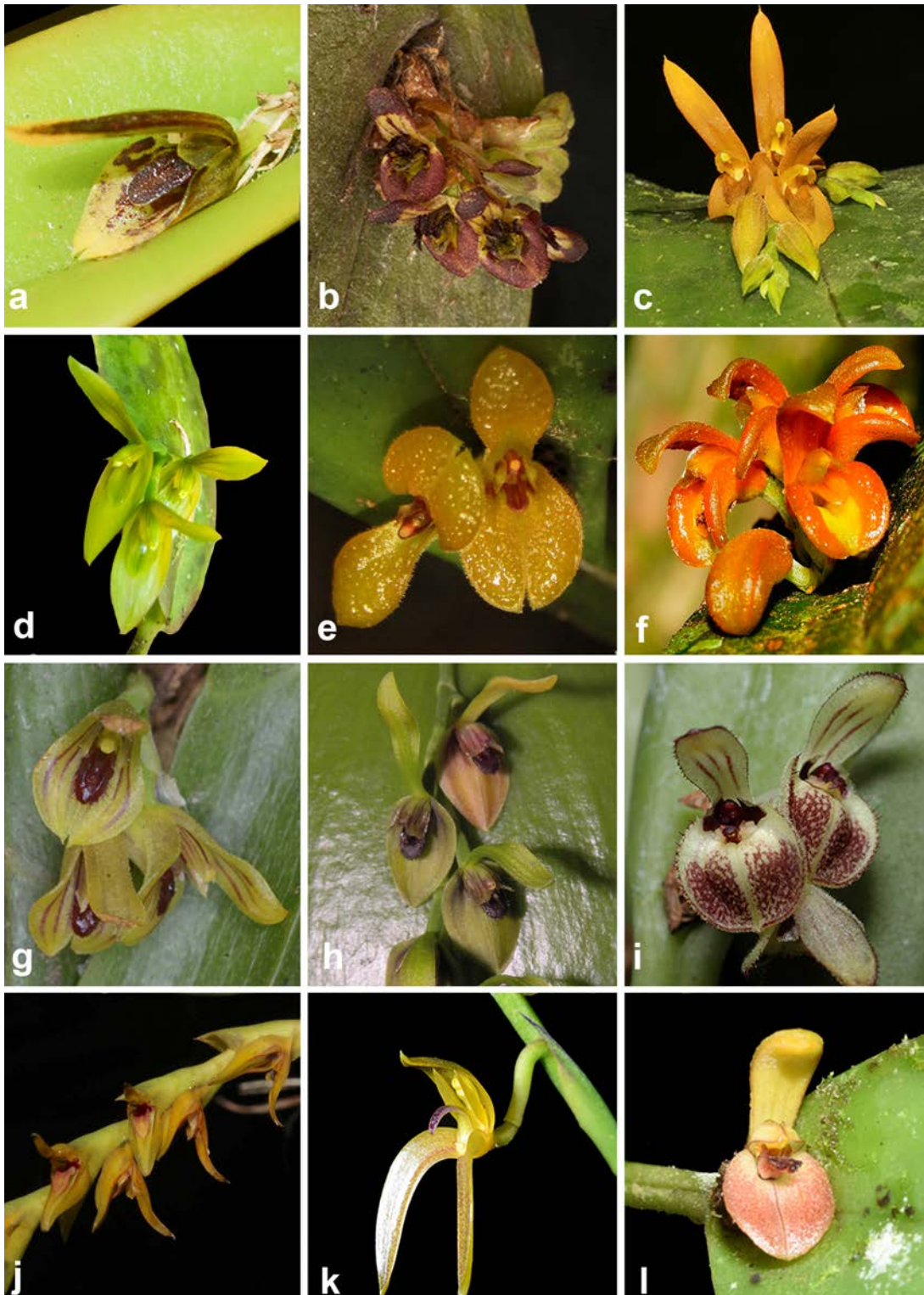


Fig. 2. Representative species of Peruvian *Acianthera*: **a**, *A. miqueliana* (H.Focke) Pridgeon & M.W.Chase; **b**, *A. pantasmoides* (C.Schweinf.) Pridgeon & M.W.Chase; **c**, *A. polystachya* (Ruiz & Pav.) Pupulin; **d**, *A. rodolfo-vasquezii* Damian; **e**, *A. rubroviridis* (Lindl.) Pridgeon & M.W.Chase; **f**, *A. scalpricaulis* (Luer) Pridgeon & M.W.Chase; **g**, *A. sicaria* (Lindl.) Pridgeon & M.W.Chase; **h**, *A. toachica* (Luer & Dodson) Luer; **i**, *A. tokachii* (Luer) Luer; **j**, *A. tricarinata* (Poepp. & Endl.) Pridgeon & M.W.Chase; **k**, *A. tunguraguae* (F.Lehm. & Kraenzl.) A.Doucette; **l**, *A. wagneriana* (Klotzsch) Pridgeon & M.W.Chase. [Photographs: a, L. Torres; b, S. Arevalo; c, L. Egoavil; d, S. Olortegui; f, J. Edquen; g, A. Goicochea; e, j, K. Yupanqui; h, J. Janovec; i, E. Hunt; k, A. Damian; l, L. Rimarachin.]

Cajamarca, Amazonas—, where they grow as epiphytes in humid montane forests up to 3000 m a.s.l. According to León & al. (2006), only one species belonging to *Acianthera* —*Pleurothallis mexiae* Luer; *A. mexiae* (Luer) Pridgeon & M.W.Chase— was registered as endemic to Peru. However, the present study recognizes eight endemic species, including two new taxa described herein, and a few other taxa recently described (Damián 2018; Luer 2011; Luer & Thorerle 2012). A taxonomic synopsis, an artificial key, and a map of all known localities for Peruvian *Acianthera* are provided by the authors.

MATERIAL AND METHODS

For taxonomic treatment, type information was acquired from the protologues of each cited name with the help of *Biodiversity Heritage Library* —www.biodiversitylibrary.org— and *Botanicus* —www.botanicus.org—. The type specimens were observed from online photos available through AMES, BM, BR, F, FLAS, K, NY, S, SP, P, US and W —abbreviations of the herbaria according to Thiers (2017).

Each species was listed with its complete nomenclature information, including synonyms, original publication and type references. When the holotype was confirmed as destroyed, it was necessary to designate a lectotype. In some cases, we were unable to locate the holotype specimen cited by the protologue, or to be certain about its existence, in such cases we decided to cite as «unknown» rather than proposing a lectotype in order to avoid confusion, since we don't have the certainty of its real status —e.g., *Pleurothallis wolfiana* Schltr.

Specimens were obtained by revising Peruvian herbaria, USM, HOXA, MOL and CUZ, the latter from online photos available at *Atrium* —<http://atrium.andesamazon.org/>—. Through online databases from the AMES, BM, BR, F, FLAS, K, NY, S, SP, P, US and W, localities for all records were georeferenced and superimposed into a map of Peru using Qgis v. 2.18.0 software.

New species were photographed in situ using a Nikon D7100/Micro Nikkor 60 mm camera. The holotypes were deposited at UFV. Measurements and description of the morphological features were carried out using a Euromex SB-1903 stereomicroscope. For illustration of the new taxa, alcohol-preserved material was used as well as digital photos that were processed with Adobe Photoshop CC v. 14.0.

RESULTS AND DISCUSSION

Key to the species of *Acianthera* in Peru

1. Lateral sepals free or barely connate at the base 2
- Lateral sepals deeply connate 4

2. Sepals verrucose, dorsal sepal oblong-obovate 2. *A. aphthosa*
- Sepals not verrucose, dorsal sepal triangular or oblong-triangular 3
3. Leaves erect, mostly more than 8 cm tall; sepals glabrous; petals with a lobule on the margin of both sides at the base 33. *A. tunguraguae*
- Leaves prostrate to pendent, mostly less than 5 cm tall; sepals pubescent externally; petals without lobules at the base 9. *A. dodsonii*
4. Inflorescence racemes 2-flowered or with a single flower 5
- Inflorescence racemes with more than two flowers ... 14
5. Lateral sepals deeply connate into a synsepal 6
- Lateral sepals shallowly connate, usually separating easily 11
6. Sepals densely to shortly pubescent-ciliate 7
- Sepals glabrous 8
7. Synsepal deeply convex; petals obovate; lip broadly rounded and shortly apiculate, densely verrucose at the apex 27. *A. ruizii*
- Synsepal slightly concave; petals elliptical; lip minutely erose, not verrucose at the apex 4. *A. biseta*
8. Plants long repent 28. *A. saundersiana*
- Plants caespitose or short repent 9
9. Leaves orbicular, round at the base; dorsal sepal narrowly linear 11. *A. erythrogramma*
- Leaves elliptical to ovate, cuneate at the base; dorsal sepal oblong to oblanceolate 10
10. Petals acuminate with a longitudinal carina; column winged; lip entire 25. *A. rodolfo-vasquezii*
- Petals acute without a longitudinal carina; column not winged; lip 3-lobed 3. *A. berlinensis*
11. Leaves broadly elliptical to round; lateral sepals apiculate at the apex 8. *A. discophylla*
- Leaves elliptical, narrowly linear to ovate; lateral sepals not apiculate at the apex 12
12. Leaves elliptical; apex of the lip usually coarsely verrucose, lateral lobes antrorse 35. *A. wagneriana*
- Leaves linear to ovate; apex of the lip smooth to minutely verrucose, lateral lobes erect to retrorse 13
13. Dorsal sepal much longer than the synsepal; petals minutely serrate in the margins above the middle ... 21. *A. miqueliana*
- Dorsal sepal not significantly longer than the synsepal; petals microscopically irregular in the margins 12. *A. fernandezii*
14. Lip with a transverse basal callus articulated with the apex of the column-foot 13. *A. floribunda*
- Lip hinged to the apex of the column-foot 15
15. Lip trilobed or subtrilobed 16
- Lip without lateral lobes 27
16. Ovary glabrous or smooth 17
- Ovary pubescent 18

17. Lip with apical lobe minutely serrulate, verrucose; lateral lobes near the middle, uncinata, antrorse 30. *A. sicaria*
 – Lip with apical lobe microscopically to coarsely fringed, smooth; lateral lobes below the middle, broadly rounded, not antrorse 23. *A. polystachya*
18. Leaves round to broadly elliptical ... 1. *A. agathophylla*
 – Leaves narrowly elliptical to ovate 19
19. Lateral lobes with antrorse margins 20
 – Lateral lobes with rounded or sub-quadrate margins ... 21
20. Petals oblong, acute, with a carina within each margin 5. *A. carinata*
 – Petals flabellate-obovate, unguiculate, without carina 24. *A. pubescens*
21. Ramicauls triquetrous; petals unguiculate, acute at the apex 14. *A. fumioi*
 – Ramicauls terete or compressed; petals obtuse to subacute at the apex 22
22. Dorsal sepal apiculate 23
 – Dorsal sepal obtuse 24
23. Ramicauls sharply 3-winged, gradually broader toward the leaf; petals spatulate; lip subtrilobed 29. *A. scalpricaulis*
 – Ramicauls not winged, more or less compressed and sulcate above; petals elliptical-oblong; lip trilobed 6. *A. consatae*
24. Lateral sepals deeply deflexed above the base; petals obovate, shortly acuminate 32. *A. tokachii*
 – Lateral sepals not deflexed above the base; petals oblong, elliptical to ovate, not acuminate 25
25. Lip densely verrucose with erose margins 19. *A. marleniae*
 – Lip not verrucose with minutely serrulate margins ... 26
26. Lip with a pair of tall, well-demarcated carinae 16. *A. lamia*
 – Lip without well-demarcated carinae 22. *A. pantasmoides*
27. Inflorescence borne on top of the center of the leaf; dorsal sepals with the margin recurved 7. *A. decurrens*
 – Inflorescence borne at the base of the leaf; dorsal sepals with the margins not recurved 28
28. Ramicauls triquetrous or compressed 29
 – Ramicauls terete, sometimes compressed above ... 31
29. Leaves round at the base 20. *A. mexiae*
 – Leaves cuneate at the base 30
30. Petals spatulate, obtuse; lip narrowly oblong, with a small lobule at each corner 10. *A. ericae*
 – Petals obovate, subacute; lip ovoid, without lobules 18. *A. lojiae*
31. Petals apiculate to acuminate at the apex 32
 – Petals obtuse to subtruncate at the apex 33
32. Petals serrate, obtuse, apiculate; lip broadly bilobed at the base 15. *A. geminicaulina*
 – Petals fimbriate, acute, acuminate; lip minutely lobed at the base 17. *A. lanceana*
33. Sepals pubescent, tuberculate within; synsepal obovate 26. *A. rubroviridis*
 – Sepals glabrous; synsepal oblong to ovate 34
34. Inflorescences exceeding the leaf length; sepals thickly carinate, synsepal oblong 33. *A. tricarinata*
 – Inflorescences not exceeding the leaf length; sepals smooth, synsepal ovate 31. *A. toachica*

Taxonomic Treatment

1. *A. agathophylla* (Rchb.f.) Pridgeon & M.W.Chase, *Lindleyana* 16 (4): 241 (2001); *Pleurothallis agathophylla* Rchb. f., *Xenia Orchidacea* 3: 25 (1881); *Humboltia agathophylla* (Rchb. f.) Kuntze, *Revis. Gen. Pl.* 2: 667 (1891). Type: Bolivia, La Paz, Sorata, 2600 m a.s.l., Mar. 1860, *Mandon 1132* (holo-: W; iso-: AMES!, K!, G!, S!, P!).

Pleurothallis cyclophylla Luer, *Selbyana* 3: 92 (1976). Type: Bolivia, Santa Cruz, near Samaipata, 1500 m a.s.l., 20 Oct. 1976, *F. Fuchs* s.n., [fl. in cult.], *Luer 249S* (holo-: SEL!).

Pleurothallis nakatae T.Hashim., *Ann. Tsukuba Bot. Gard.* 4: 3 (1986). Type: Peru, Junín, Chanchamayo, near La Merced, 1700–1800 m a.s.l., 8 May 1985, *Nakata 626* [fl. in cult.] (holo-: TNS, not located).

Distribution.—Bolivia and Peru (fig. 3).

Studied specimens.—PERU. Huánuco: south of Tingo Maria, *Luer 5892* (SEL). Junín: Chanchamayo, near La Merced, *Nakata 626* (TNS). Loreto: s.loc., *Moore 10050* (Schweinfurth 1970).

2. *A. apthosa* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16 (4): 242 (2001); *Pleurothallis apthosa* Lindl., *Edwards's Bot. Reg.* 24 (Misc.): 42–43 (1838); *Specklinia apthosa* (Lindl.) F.Barros, *Hoehnea* 10: 109 (1984). Type: s.loc., Jun. 1838, *Bateman* s.n. [received from Mr. Bateman, who in turn received it from the Birmingham Botanical Garden, without a name] (holo-: K!).

Pleurothallis macrophyta Barb.Rodr., *Gen. Spec. Orchid.* 1: 19 (1877). Type: Brasil, Minas Gerais, Pico de Frade near Caldas, *Barbosa* s.n. (holo-: B, lost; lecto-, here designated: Sprunger 1996: 211 tab. 153B).

Pleurothallis pelioxantha Barb.Rodr., *Gen. Spec. Orchid.* 1: 17 (1877). Type: Brasil, Minas Gerais, Carmo do Rio Claro, *Barbosa* s.n. (holo-: B, lost; lecto-, here designated: Sprunger (1996: 230 tab. 172).

Pleurothallis ciliata var. *abbreviata* C.Schweinf., *Bot. Mus. Leaflet* 16: 46 (1953). Type: Peru, Huánuco, Yanano, ca. 6000 ft a.s.l., 13 May 1923, *Macbride 3837* (holo-: AMES!).

Distribution.—Colombia, Ecuador, Peru (fig. 3), Bolivia and Brazil.

Studied specimens.—PERU. Junín: Chanchamayo, above hacienda santa blanca, *S. B-3856* (MO).

3. *A. berlinensis* Damian, Chiron, Mitidieri & Rimarachin, sp. nov. Type: Peru, Amazonas, Bagua, Bosque Berlin, disturbed area, 1900 m a.s.l., 9 Dec. 2015, *A. Damián* and *L. Rimarachin 01166* (holo-: UFV!). Figs. 1a, 4, 5.

LSID: urn:lsid:ipni.org:names:77176586-1

Similar to Acianthera biseta Luer from which it differs by the leaf shorter than the ramicaul and proportionally wider; a shorter peduncle bearing 2 flowers, smaller, glabrous flowers, with yellowish sepals, an

oblong and 3-veined dorsal sepal, acute petals with slightly erose margins above the middle, and a narrower lip with obtuse apex with a mucro.

Plant epiphytic, caespitose, 24 cm tall. Roots 1 mm in diameter, slender, densely fasciculate. Ramicaul stout, erect, terete, 7–14 cm long, enclosed by 2 tubular sheaths near its base. Leaf erect, thickly coriaceous, sessile, elliptical, obtuse, 8–9.5 cm long, 2–2.7 cm wide, the base cuneate, sessile. Inflorescence 1–3 successively 2-flowered racemes, peduncle c. 1 cm long, subtended by a spatheaceous bract, ovate 0.5–1 cm long from the base of the leaf; floral bracts infundibular, thin, obtuse, 5 mm long; ovary 4 mm long; sepals fleshy, rigid, microscopically papillate on the margins, yellowish externally, densely spotted with dark purple on the adaxial surface, the dorsal sepal oblong, subacute, 9 mm long, 2–2.5 mm wide, 3-veined, the lateral sepals connate up to near their apices into an ovate synsepal, obtuse, shortly bilobed, 6-veined, 8 mm long, 5 mm wide, each lobe shortly apiculate, the base forming a shallow mentum with the column foot; petals fleshy, yellow, with 3 red rows along the veins, oblong-ob lanceolate, somewhat

falcate, acute, with margins slightly erose above the middle, thickened at the apex, 3-veined, 5 mm long, 1 mm wide; lip yellowish, covered densely with dark purple dots, fleshy, glabrous, trilobed, oblong-ob lanceolate, obtuse, shortly apiculate, 4 mm long, 1.5 mm wide, serrate along the apical margin, the lateral lobes near the middle, erect, uncinata, acute, antrorse, the disc with a pair of smooth low, parallel carinae descending from the lateral lobes and extending toward the apex, the base truncate, thick, shortly concave, hinged to the apex of the column-foot. Column semiterete, 4 mm long, with ventrally extended wings, clinandrium completely covering the anther and denticulate at the margin, the foot thick, 1 mm long, stigma ventral, anther, pollinia and capsule not seen.

Distribution.—Known only from the type locality in the province of Bagua —Amazonas— within «Bosque Berlin» Conservation Area (fig. 3). It grows as an epiphyte on low branches of remnant trees of the cloud forest, in semi-shady conditions.

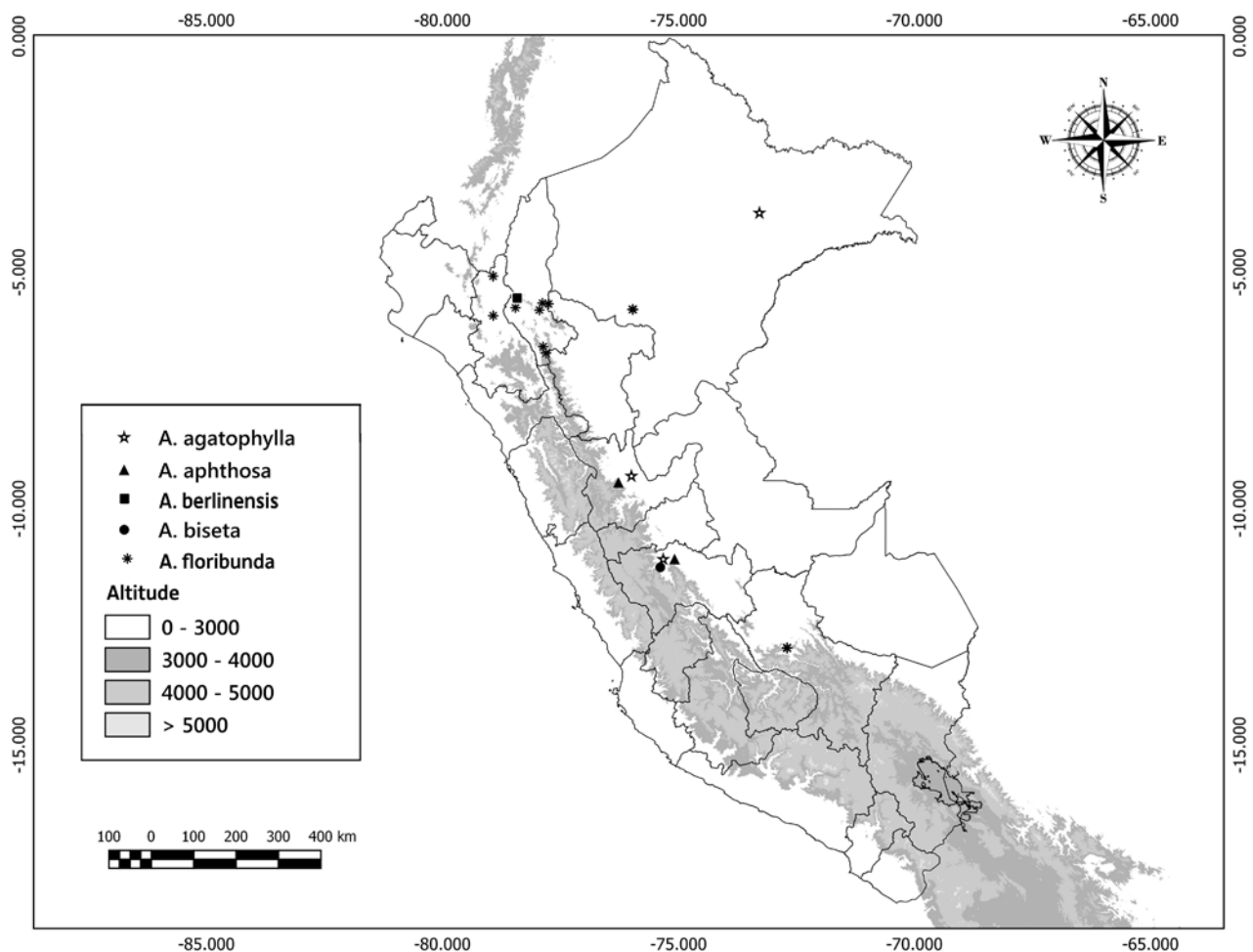


Fig. 3. Map showing the known Peruvian localities for *Acianthera agatophylla* (Rchb. f.) Pridgeon & M.W.Chase, *A. aphthosa* (Lindl.) Pridgeon & M.W.Chase, *A. berlinensis* Damián & al., sp. nov., *A. biseta* Luer and *A. floribunda* (Lindl.) F.Barros.

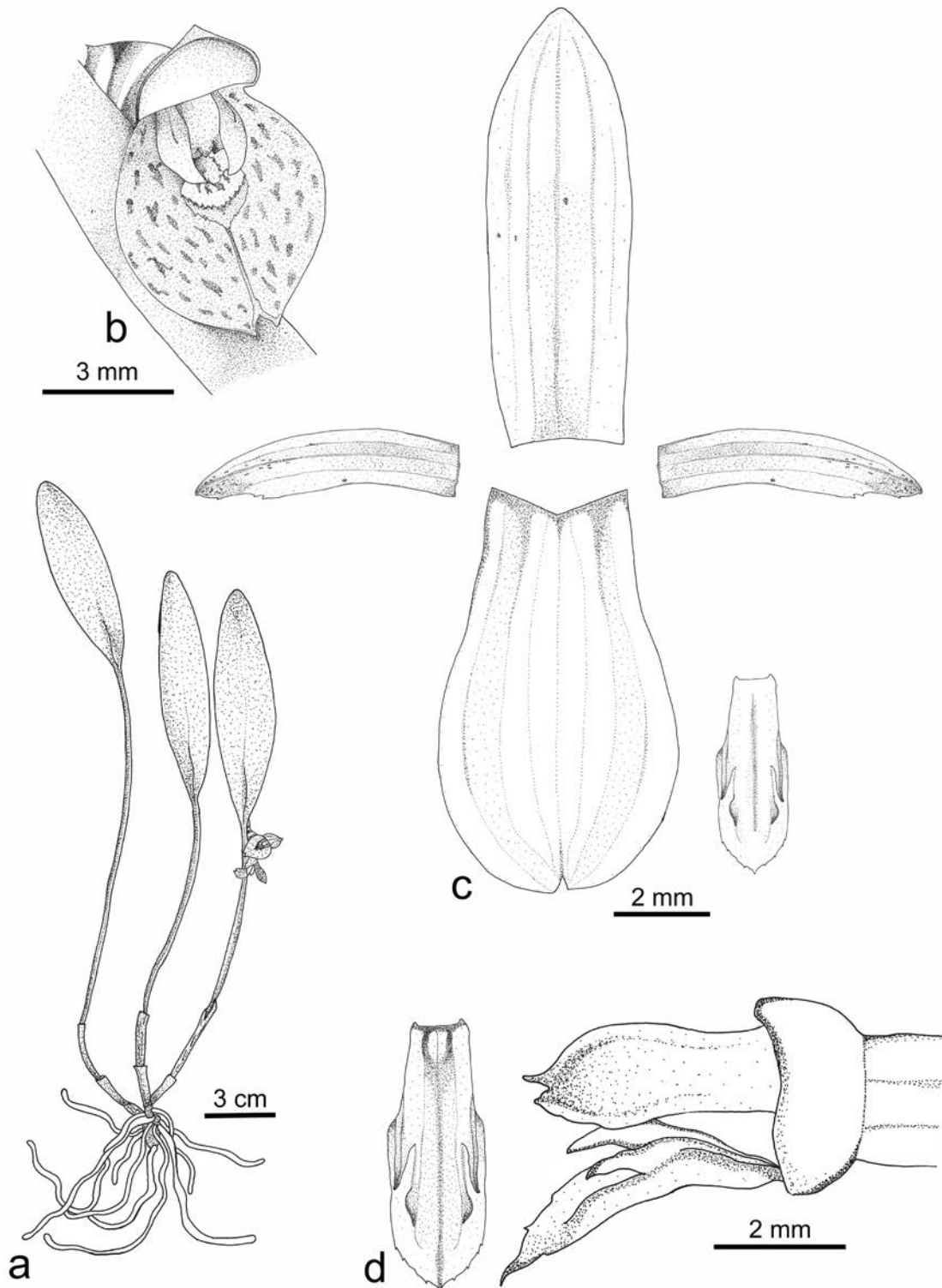


Fig. 4. *Acianthera berlinensis* Damian, Chiron, Mitidieri & Rimarachin, sp. nov.: **a**, habit; **b**, flower; **c**, dissected perianth; **d**, column and lip, lateral view, and lip in frontal view. [*A. Damián* and *L. Rimarachin 1166* (holo-: UFV); drawn by G. Damián P.]



Fig. 5. *Acianthera berlinensis* Damian, Chiron, Mitidieri & Rimarachin, sp. nov. [*A. Damián* and *L. Rimarachin 1166* (holo-: UFV); watercolour by Ó. Vilca Pinares.]

Etymology.—In honor to ACP-Bosque Berlin, where Leyda Rimarachin and her family make great efforts to preserve a beautiful forest on the high mountains of Bagua —Amazonas-Peru.

Comments.—This species is somewhat similar to *A. biseta* Luer, a recently described Peruvian species. As the latter, it belongs to the group of *Acianthera* characterized by stout, erect, terete ramicauls, thickly coriaceous elliptical leaves and a very short inflorescence bearing 1–2 flowers. However it differs from *A. biseta* by its wider leaves shorter than the ramicauls —vs. equal to the ramicauls—, its 2-flowered inflorescence —vs. 1-flowered—, its smaller flowers —c. 9 mm long versus 16 mm—yellowish with a lip densely dark purple dotted —vs. dull greenish with a deep purple lip—, its glabrous sepals —vs. densely and shortly pubescent—, its oblong, 3-veined dorsal sepal —vs. elliptical, 5-veined—, its acute petals with erose margins —vs. obtuse and marginally entire—, its narrower lip with an obtuse mid-lobe —vs. rounded—, without horseshoe-shaped callus at the base.

Another similar species is *A. auriculata* (Lindl.) Pridgeon & M.W.Chase, which differs from *A. berlinensis* on having long inflorescences, almost equal to the leaves bearing 5 or more flowers —vs. short inflorescence bearing 1–2 flowers—, flowers small, almost half the dimensions of *A. berlinensis* —sepals, 5 mm vs. 9 mm long; synsepal, 2.5–3 mm vs. 5 mm wide—, carinate sepals and transverse callus at the base of the lip —vs. non carinate sepals and lack of the transverse callus.

4. *A. biseta* Luer, Harvard Pap. Bot. 17: 333, fig. 1 (2012). Type: Peru, Junín, Chanchamayo, near Mina San Vicente,

2000–2800 m a.s.l., Jun. 2012, *B. Monterrey* s.n. [Morón 004] (holo-: USM, not located). Fig. 1b.

Distribution.—Endemic to Peru, known only from the type locality (fig. 3).

5. *A. carinata* (C.Schweinf.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 253 (2004); *Pleurothallis carinata* C.Schweinf., Botanical Museum Leaflets 15: 85 (1951). Type: Peru, Cusco, Quispanchis, Maurayacu, Marcapata, 1300–160 m a.s.l., 12 Dec. 1943, *Vargas 3757* (holo-: AMES!).

Distribution.—Endemic to Peru (fig. 6).

Studied specimens.—PERU. Apurímac: Abancay, *Vargas 8977* (CUZ).

6. *A. consatae* (Luer & R.Vásquez) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 253 (2004); *Pleurothallis consatae* Luer & R.Vásquez, Revista Soc. Boliv. Bot. 2 (2): 135 (1999). Type: Bolivia, La Paz, Prov. Muñecas, near consata, 21 Jan. 1981, *Luer et al. 6323* (holo-: SEL). Fig. 1c.

Distribution.—Bolivia and Peru (fig. 6). It was reported for Huánuco by Blas (2015: 49) as *Acianthera* sp.

Studied specimens.—PERU. San Martín: Rioja, Elias Soplin Vargas, Santa Fe, *Olortegui 001* (UFV!).

7. *A. decurrens* (Poepp. & Endl.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 243 (2001); *Pleurothallis decurrens* Poepp. & Endl., Nov. Gen. Sp. Pl. 1: 48, pl. 83 (1836); *Humboltia decurrens* (Poepp. & Endl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891). Type: Peru, Huánuco, ad praedium Cuchero, Dec. 1829, *Poeppig 1604* (holo-: W!). Fig. 1d.

Distribution.—Ecuador and Peru (fig. 6).

Comments.—This eccentric species varies in color among different populations in Peru, from yellow densely suffused with dark purple sepals —more common forma—, through entirely yellow flowers (fig. 1d).

Studied specimens.—PERU. Amazonas: Bongara, Río Utcubamba. Pomacocha, *Hutchison and Wright 3970* (MO); Bongara, km 320 (Olmos-Rioja), *Hutchison and Wright 6841* (USM!, MO); Chachapoyas, between Ingenio and Pomacochas, *Lopez et al. 4282* (AMES, HUT); Bagua, La Peca, «Bagua chica», *Ocupa* s.n. (USM-photo!); Chachapoyas, Leimebamba, *Salas* s.n. (USM-photo!). Huánuco: Muña, *Macbride 40555* (F); «Palanda», *Andre 4632* (K); Río Huallaga below Río Santo Domingo, *Macbride 4252* (AMES, F!). Junín: Huacapistana, *Killip and Smith 24221* (USM!, AMES, US); Junín (Jauja), *Hajek 99* (USM!); Chanchamayo, *Hajek 80* (USM!). Pasco: Oxapampa, Chontabamba, west of Oxapampa, low pass between Chontabamba and Suiza, *Foster et al. 6731A* (MO).

8. *A. discophylla* (Luer & Carnevali) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 253 (2004); *Pleurothallis discophylla* Luer & Carnevali, Novon 3 (2): 158, fig. 1 (1993). Type: Ecuador, Morona-Santiago, epiphytic in tall forest along Río Upano N of Macas, 1100 m a.s.l., 15 Jan. 1989, *Luer et al. 13927* (holo-: MO!). Fig. 1e.

Distribution.—Bolivia, Ecuador, Peru and Venezuela (fig. 6).

Studied specimens.—PERU. Amazonas: Condorcanqui, Río Cenepa, vicinity of Huampami, *Kujikat* 94 (MO). Cusco: Quispicanchis, 600–1700 m a.s.l., *Chambi et al.* 666 (BRIT!). Loreto: Mishana, Río Nanay, *Solomon* 3540 (MO); Maynas, Iquitos, *Revilla* 4310 (MO); Maynas, Campamento no 1, Mishana, Río Nanay, *Ruiz* 258 (MO); Maynas, Dtto. Iquitos, Allpahuayo, Estación experimental del instituto de investigaciones de la Amazonia Peruana (IIAP), *Vásquez and Jaramillo* 16628 (MO); Maynas, Mishana, *Vásquez et al.* 5305 (MO); Maynas, Allpahuayo, Iquitos, Nauta, *Vásquez and Criollo D.* 5773 (MO); Maynas, Iquitos, Santa María de Nanay, *Gentry et al.* 36521 (MO); Maynas, Dtto. Iquitos, km 8 Carretera Quisto Cocha, *McDaniel and Rimachi* 27836 (MO); Maynas, Río Nanay, Caserío Mishana, *Foster* 4436 (USM!, MO, F!); Maynas, Dtto. Iquitos, carretera de Iquitos a Nauta, *Rimachi Y.* 7457 (MO, USM!); Requena, Dtto. Saquena, Río Ucayali, *Rimachi Y.* 3700 (MO); Requena, *Vásquez and Jaramillo* 4890 (MO). Puno: Río Tavara, *Gentry et al.* 76893 (USM!, MO). San Martín: Maristal Caceres, Dtto. Tocache Nuevo, Puerto Pizana, *Schunke* 6891 (MO).

9. *A. dodsonii* (Luer) Karremans & Rincón-Gonzales, *Phytotaxa* 238 (2): 174–182 (2015); *Pleurothallis dodsonii* Luer, *Selbyana* 3 (1,2): 96 (1976); *Apoda-prorepentia dodsonii* (Luer) Luer, *Monogr. Syst. Bot. Missouri Bot. Gard.* 95: 255 (2004). Type: Ecuador, Tungurahua, epiphytic

near Río Blanco east of Baños, 1600 m a.s.l., 8 Oct. 1961, *Dodson and Thien* 889 (holo-: SEL!). Fig. 1f.

Distribution.—Ecuador and Peru (fig. 6).

Studied specimens.—PERU. Amazonas: Bagua, Bosque Berlín, *A. Damián and L. Rimarachin* 1168 (UFV!).

10. *A. ericae* Luer, *Harvard Pap. Bot.* 17: 333, fig. 1 (2012). Type: Peru, Junín, Chanchamayo, near Mina San Vicente, 2000–2800 m a.s.l., Jun. 2012, *B. Monterrey* s.n. [Morón 003] (holo-: USM, not located). Fig. 1g.

Distribution.—Endemic to Peru, known only from the type locality (fig. 7).

11. *A. erythrogramma* (Luer & Carnevali) Luer, *Monogr. Syst. Bot. Missouri Bot. Gard.* 95: 253 (2004); *Pleurothallis erythrogramma* Luer & Carnevali, *Novon* 3 (2): 160, fig. 2 (1993). Type: Ecuador, Napo, epiphytic on trees along Río Cascales E of Limbaqui, 450 m a.s.l., 9 Feb. 1986, *Luer et al.* 11766 (holo-: MO!).

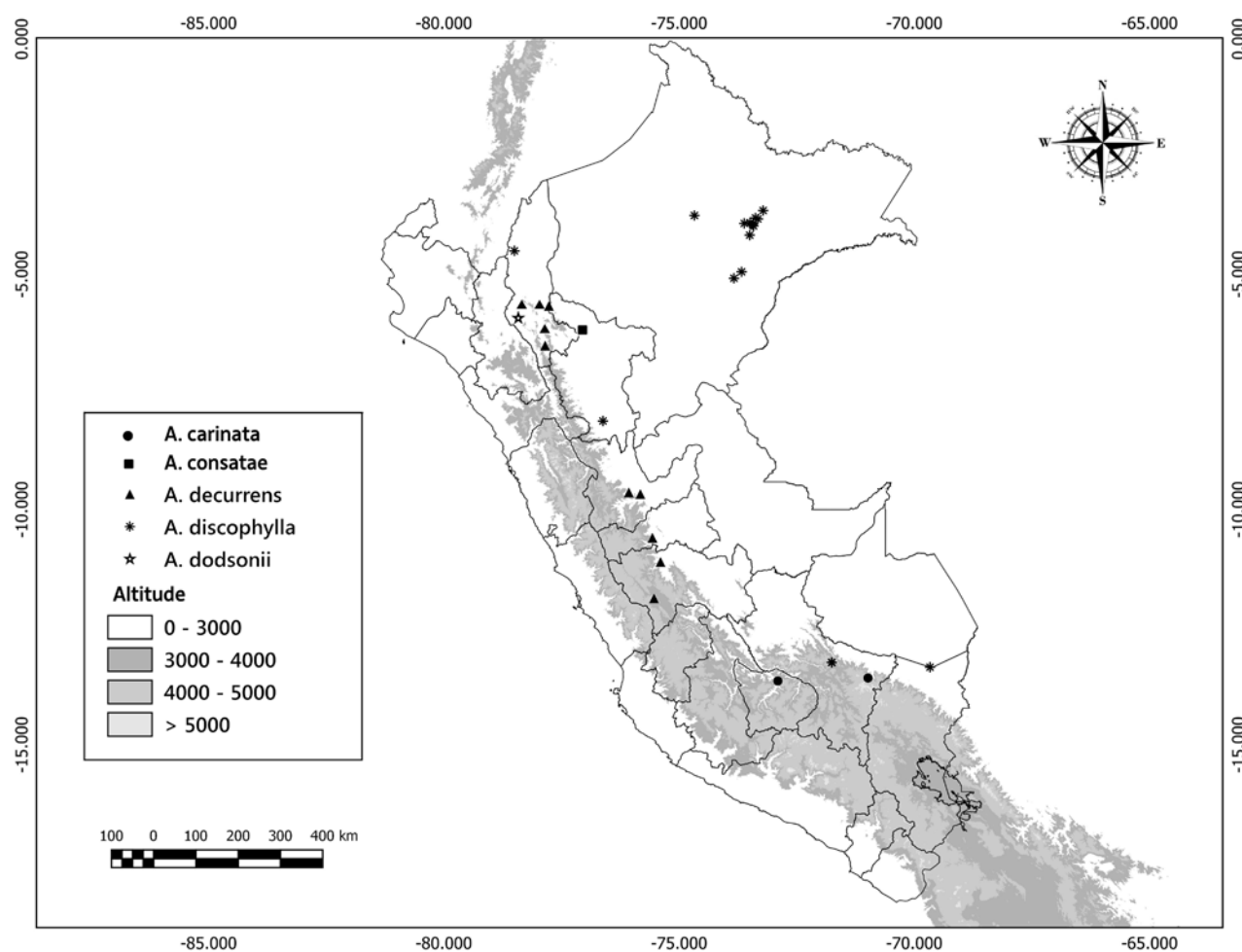


Fig. 6. Map showing the known Peruvian localities for *Acianthera carinata* (C.Schweinf.) Luer, *A. consatae* (Luer & R.Vásquez) Luer, *A. decurrens* (Poepp. & Endl.) Pridgeon & M.W.Chase, *A. discophylla* (Luer & Carnevali) Luer and *A. dodsonii* (Luer) Karremans & Rincón-Gonzales.

Distribution.—Ecuador and Peru (fig. 7).

Studied specimens.—PERU. Amazonas: S of Aintami, E of Cenepa, *Berlin 1605* (MO). Pasco: Oxapampa, Dtto Palcazu, Parque Nacional Yanachaga Chemillen, Estación Biológica Paujil, *Ureta et al. 052* (USM!); Dtto. Palcazu, Comunidad Nativa Yanasha Loma Linda, 411 m a.s.l., *Vásquez et al. 36659* (HOXA!); Dtto. Palcazu, Reserva Comunal Yanasha-Sector Azulis, 670 m a.s.l., *Vásquez et al. 29638* (HOXA!); Cacazu, 1200 m a.s.l., *Hajek 331* (USM!).

12. *A. fernandezii* Luer, Harvard Pap. Bot. 16 (2): 313, 2 (2011). Type: Peru, Loreto, Maynas, Puerto Almendra, Río Nanay, 104 m a.s.l., 13 Aug. 2008, *Fernández and Ruiz 3513* (holo-: USM, not located).

Distribution.—Endemic to Peru (fig. 7).

13. *A. floribunda* (Lindl.) F.Barros, Bradea 8: 294 (2002); *Specklinia floribunda* Lindl., Gen. Sp. Orchid. Pl.: 9 (1830); *Dendrobium ophioglossoides* Sieber ex Lindl., Gen. Sp. Orchid. Pl.: 9 (1830), pro syn.; *Specklinia ophioglossoides* Mutel, Mém. Soc. Roy. Centr. Agric. Dépt. N. 1835–1836: 84 (1837), nom. illegit. superfl.; *Pleurothallis floribunda*

(Lindl.) Lindl., Edwards's Bot. Reg. 28 (Misc.): 73 (1842), nom. illegit., non Poepp. & Endl., Nov. Gen. Sp. Pl. 1: 48–49, tab. 84 (1835) [1836]; *Pleurothallis sieberi* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 20: 34 (1986); *Acianthera sieberi* (Luer) Pridgeon & M.W.Chase, Lindleyana 16: 246 (2001); *Acianthera floribunda* (Lindl.) F.Barros, Bradea 8: 294 (2002); *Arthrosia floribunda* (Lindl.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 105: 248 (2006). Type: Martinique, *Sieber 206* (holo-: K; iso-: M!, P!, MO!). Fig. 1h.

Pleurothallis capillaris Lindl., Edwards's Bot. Reg. 21: sub tab. 1797 (1836); *Humboltia capillaris* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891); *A. capillaris* (Lindl.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 242 (2001); *Specklinia capillaris* (Lindl.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 259 (2004); *Arthrosia capillaris* (Lindl.) Campacci, Bol. CAOB 69–70: 26 (2008). Type: Brazil, Sebastianopolit., *Martius* s.n. (holo-: M!).

Pleurothallis longicaulis Lindl., Edwards's Bot. Reg. 28 (Misc.): 72 (1842); *Humboltia longicaulis* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891); *Acianthera longicaulis* (Lindl.) Pridgeon & M.W.Chase, Lindleyana 16: 244 (2001); *Specklinia longicaulis* (Lindl.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 261 (2004); *Arthrosia longicaulis*

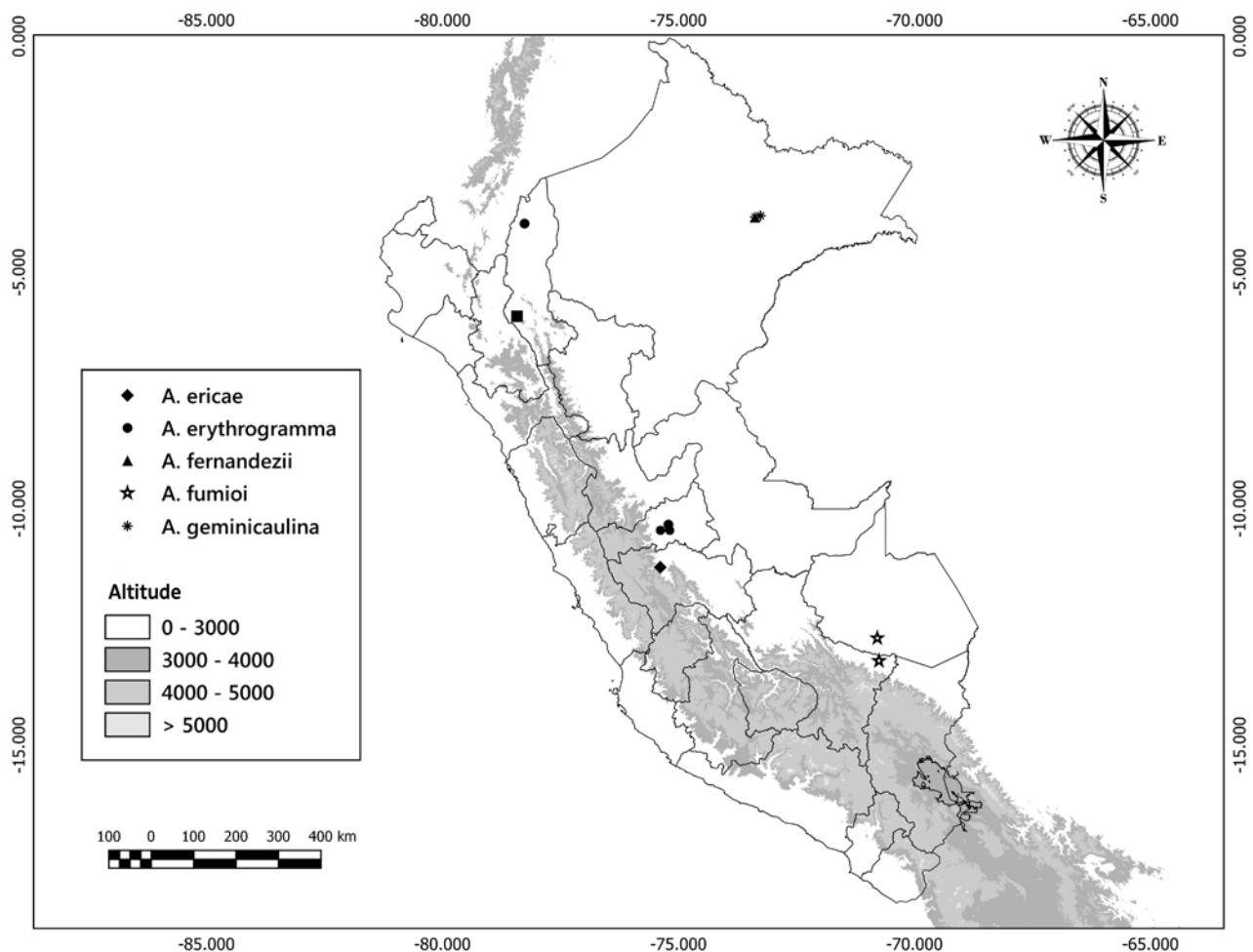


Fig. 7. Map showing the known Peruvian localities for *Acianthera ericae* Luer, *A. erythrogramma* (Luer & Carnevali) Luer, *A. fernandezii* Luer, *A. fumioi* (T.Hashim.) Luer and *A. geminicaulina* (Ames) Pridgeon & M.W.Chase.

(Lindl.) Campacci, Bol. CAOB 69–70: 27 (2008). Type: Brazil, Rio de Janeiro, Serra dos Orgãos, s.coll. (holo-: BM!).

Pleurothallis triquetra Schltr., Repert. Spec. Nov. Regni Veg. 12: 488 (1913), nom. illegit., non Klotzsch ex Lindl., Fol. Orchid. Pleurothallis: 13 (1859). Type: Bolivia, Tres Cruces, ca. 1500 m a.s.l., Feb. 1911, Herzog 1627 (holo-: B, destroyed).

Distribution.—Brazil, Ecuador, Peru and West Indies (fig. 3).

Comments.—Lindley described this species in 1830 as *Specklinia floribunda* including *Dendrobium ophioglossoides* as a synonym, based on a specimen obtained by Sieber from Martinique. Later in 1832, Lindley himself transferred *Specklinia floribunda* to *Pleurothallis* (*Pleurothallis floribunda*) without noticing that Poeppig and Endlicher already published that name on 1836 on his *Nova Genera ac Species Plantarum*, therefore *Pleurothallis floribunda* (Lindl.) Lindl. became an illegitimate name. Luer (1986), on his treatment of the genus *Pleurothallis*, presented the subgenus *Arthrosia* to accommodate nine species, including *Pleurothallis longicaulis* and a new name for *Specklinia floribunda* (as *Pleurothallis sieberi*), listing *Pleurothallis floribunda* (Lindl.) Lindl. nom. illegit. and *Pleurothallis ophioglossoides* sensu Garay & Sweet as synonyms. Based on phylogenetic studies, Pridgeon & Chase (2001), supported the monophyly of *Acianthera*, and ranked the subg. *Acianthera* of Luer to the generic level, transferring several epithets to it, including *A. sieberi*, *A. capillaris* and *A. longicaulis* and reduced several subgenus proposed by Luer (1986) to synonyms including subg. *Arthrosia*. Later, Luer (2002) reinstated several species to *Pleurothallis* and reduced epithets transferred by Pridgeon & Chase (2001) to synonyms. Luer accepted *Pleurothallis capillaris* and listed *Pleurothallis longicaulis*, *Pleurothallis sieberi*, *A. sieberi*, *A. capillaris* and *A. longicaulis* as synonyms. Luer (2004) recognized the generic rank of *Acianthera* without including any reference to its neglected subg. *Arthrosia* or any of its members. Meanwhile, Barros (2002) proposed a new combination for *Specklinia floribunda* (*A. floribunda*) here recognized as the accepted name for this species, with priority over *Pleurothallis capillaris* (1836). Afterward, Luer (2006) elevated *Arthrosia* to the generic rank and proposed several transfers, including a new combination to *Specklinia floribunda* (*Arthrosia floribunda*). Chiron & van den Berg (2012) on its revision of *Acianthera* reduced the genus *Arthrosia* to *A. sect. Arthrosiae* (Luer) Chiron & van den Berg, including *A. capillaris* as one of its members. Finally, Karremans & al. (2016) recognized a broad concept of *Acianthera*, which includes four infrageneric ranks, reducing *Arthrosia* and *A. sect. Arthrosiae* into synonyms of *A. subg. Acianthera*.

Acianthera floribunda is characterized by erect ramicauls, caespitose; oblong, obtuse leaves; lanceolate sepals, laterals carinate; spatulate to lanceolate with denticulate margins petals; 3-lobed oblong, acute labellum with two parallel longitudinal lamella, a conspicuously transverse callus across the base; and terete with lacerate apex column —features taken from the protologue of *A. floribunda* and Luer (2009).

Studied specimens.—PERU. Cajamarca: San Ignacio, Cordillera del Condor, *Calatayud* and *Vásquez 520* (MO); San Ignacio, Cordillera del Condor, *Calatayud et al. 534* (MO); San Ignacio, Cordillera del Condor, *Calatayud et al. 535* (MO, CUZ!, USM!); San Ignacio, *Calatayud* and *Vargas, 6856^a, 6848* (USM!). Cusco: Calca, Yanatile, Quebrada Honda, *Damián 8031* (UFV!). Amazonas: Suyobamba, 3 km NE of Pedro Ruiz Gallo, *Gentry et al. 61306* (MO); Chachapoyas, *Bennett 3436* (MO); Between Pomacochas and Moyobamba, *Tokach P-64* (MO); Prov. of Bongara, Rio Utcubamba, 300 km east of Olmos, *Hutchison* and *Wright 6848* (F, USM!); Vicinity of Campamiento ingenio, *Hutchison* and *Wright 3840* (USM!); Prov. of Bagua, between Bagua Grande and Chachapoyas, *Ferreira 14425* (USM!); Prov. Bongara, Campamiento Ingenio on Rio Utcubamba, *Hutchison* and *Wright 6856^a* (USM!). San Martín: Yurimaguas, *Hajek 2196* (USM!).

14. *A. fumioi* (T.Hashim.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 253 (2004); *Pleurothallis fumioi* T.Hashim., Jap. J. Bot. 46: 173 (1971). Type: Peru, Puno,

between Quince Mil and Puente Rio Inambari, *Hashimoto* and *Wada* s.n. (holo-: TI).

Pleurothallis phoxophylla Luer, Revista Soc. Boliv. Bot. 3: 57 (2001). Type: Peru, Puno, Carabaya, Puente Inambari toward Madre de Dios, 520 m a.s.l., 8 Dec. 1966, *Vargas 18426* (holo-: AMES!).

Distribution.—Endemic to Peru (fig. 7). WCSP (2016) erroneously reported this species as endemic to Bolivia.

Studied specimens.—PERU. Madre de Dios: Madre de Dios, Tambopata, *C. Vargas 18425* (CUZ).

15. *A. geminicaulina* (Ames) Pridgeon & M.W.Chase, Lindleyana 16 (4): 243 (2001); *Pleurothallis geminicaulina* Ames, Schedul. Orchid. 6: 59–60 (1923). Type: Costa Rica, La Unión, Turrialba, 3500 ft a.s.l., 12 May 1923, *Lankester 454* (holo-: AMES!).

Distribution.—Costa Rica, Ecuador, Panama and Peru (fig. 7).

Studied specimens.—PERU. Loreto, Maynas, Iquitos, *Vásquez* and *Jaramillo 8702* (MO); Maynas, Puerto Almendras, *Croat 18537* (MO).

16. *A. lamia* (Luer) Pridgeon & M.W.Chase, Lindleyana 16 (4): 244 (2001); *Pleurothallis lamia* Luer, Selbyana 5 (2): 170 (1979). Type: Ecuador, Azuay, 3000 m a.s.l., 18 Jul. 1977, *Luer et al. 1744* (holo-: SEL!). Fig. 1i.

Distribution.—Ecuador and Peru (fig. 8).

Studied specimens.—PERU. Amazonas, Luya, Leymebamba, 2950 m a.s.l., *Salas 128* (USM!).

17. *A. lanceana* (Lodd.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 244 (2001); *Pleurothallis lanceana* Lodd., Bot. Cab. 18 (177): pl. 1767 (1832); *Humboltia lanceana* (Lodd.) Kuntze, Rev. Gen. Pl. 2: 667 (1891). Type: Suriname, Jun. 1831, *Lance* s.n. (holo-: lost; lecto-: t.1767, K 000079847!, here designated). Fig. 1j.

Pleurothallis ciliata Knowles & Westc., Floral Cabinet 1: 39–40, tab. 19 (1837); *Humboltia ciliata* (Knowles & Westc.) Kuntze, Rev. Gen. Pl. 2: 667 (1891); *A. ciliata* (Knowles & Westc.) F.Barros & L.R.S.Guim., Neodiversity 5: 28 (2010). Type: Guyana, Demerara, near the Falls of Ouripano on the Masseroni River, 1834, *Henchman* s.n. (holo-: not seen).

Pleurothallis plumosa Lindl., Edwards's Bot. Reg. 28 (Misc.): 72 (1842); *Humboltia plumosa* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 668 (1891). Type: Trinidad, s.d., *Loddiges 13* (holo-: K).

Pleurothallis crassifolia H.Focke, Tijdschr. Wis-Natuurk. Wetensch. Eerste Kl. Kon. Ned. Inst. Wetensch. 2: 196–197 (1849), nom. illegit. superfl., non Rchb. f., Linnaea 22: 832 (1849)[1850]; *Humboltia crassifolia* (H.Focke) Kuntze, Rev. Gen. Pl. 2: 667 (1891). Type: Surinam, near Para River, s.d., *Focke* s.n. (holo-: illustr. at W, not found; iso-: BR!).

Pleurothallis minax Rchb. f., Bonplandia 2 (2): 24 (1854). Type: Venezuela, Caracas, *Wagner 562* (holo-: W; iso-: BR!).

Pleurothallis serrifera Lindl., Folia Orchidaceae 9: 34 (1859); *Humboltia serrifera* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 668 (1891). Type: Brazil, Amazonas, Caatingas near Panuré, *Spruce 2724* (holo-: K; iso-: P!).

Pleurothallis sprucei Lindl., Folia Orchidaceae 9: 35 (1859); *Humboltia sprucei* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 668 (1891). Type: Brazil, Amazonas, «low sandy woods called Caatingas by the river Uaupés», *Spruce 2725* (holo-: K; iso-: P!).

Pleurothallis daguensis F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26 (3–4): 444 (1899). Type: Colombia, Sucre, on Dagua River, *Lehmann 8167* (holo-: B, destroyed).

Pleurothallis huebneri Schltr., Beih. Bot. Centralbl. 42 (2): 90–91 (1925). Type: Brazil, Amazonas, Taracuá, Alto Rio Negro, *Hübner 173* (holo-: B, destroyed).

Pleurothallis ciliata var. *elongata* C.Schweinf., Bot. Mus. Leaflet. 16 (3): 47–48 (1953). Type: Peru, Loreto, vicinity of Iquitos, Dec. 1936, *Klug 10013* (holo-: AMES!).

Distribution.—Bolivia, Colombia, Costa Rica, Ecuador, French Guiana, Guyana, Panama, Peru (fig. 8), Suriname and Venezuela.

Comments.—According to Barros & Guimarães (2010), the correct name for this taxon is *A. ciliata* (Westc.) F.Barros & L.R.S.Guim., based on *Pleurothallis ciliata* Westc. published in 1837. However, in the present work we decided to accept *Pleurothallis lanceana* Lodd. as the right basionym for this taxon, since it was first published in 1832 by Loddiges in his *Botanical Cabinet* and not in 1859 by Lindley as stated by WCSP (2016). Consequently, the valid name is *A. lanceana* in accordance with McNeill & al. (2012).

Studied specimens.—PERU. Amazonas: Condorcanqui, Río Cenepa, *Vásquez et al. 19020* (MO); Bagua, District Imaza, right bank of stream, Shimutaz, *Díaz 7655* (MO). Cusco: Paucartambo, road from Patrias to the North, *Maas et al. 6154* (USM!, MO). Huánuco: Leoncio Prado, near Tingo María, *Jara s.n.* (MO); Leoncio Prado, Dpto. Rupa Rupa, northeast

of Tingo María, near Mapresa, *Schunke V. 10631* (MO). Huancavelica: Tadjacaya, Huachocolpa, 2300 m a.s.l., *Leon et al. 2992* (MOL!). Madre de Dios: Tambopata, Madre de Dios river, northern margin, *Householder et al. 769* (BRIT!). Loreto: vicinity of Iquitos, *Klug 10050* (AMES); Quebrada Cuninico, *Croat 17792* (MO); Itaya river above Iquitos, *Croat 19221* (MO); Tacsha Curaray river, of Río Napo, *Croat 20402* (MO); Alto Amazonas, orillas del Río Pastaza, entre Rimachi y Río Witoyacu, *Díaz S. et al. 1319* (MO); Maynas, Iquitos, *Revilla 3590* (MO); Maynas, Río Yavari, *Gentry and Revilla 20861* (USM!, MO); Maynas, Yanamono, Explorama Tourist Camp, halfway between Indiana and mouth of Río Napo, *van der Werff et al. 9920* (MO); Maynas, Dpto. Indiana, Quebrada de Yanayacu, *McDaniel and Rimachi 26585* (MO); Loreto (Maynas), carretera Iquitos-Nauta, zona reservada, Alpahuayo Mishana, *Weng 48* (USM!); Dpto. Nauta, Caserío Miraflores, 132 m a.s.l., *Vásquez et al. 34764* (HOXA!). Pasco: Oxapampa, Palcazu valley, Río San José in the Río Chuchurras, *Smith 4010* (MO); Palcazu, Comunidad Nativa San Pedro de Pichanaz, Sector Azulis, Cercanías del Centro Comunal, *Monteagudo et al. 10168* (USM!, HOXA!, MO, HUT, AMAZ, MOL!); Dpto. Pozuzo, Fundo Agustín Egg Schuller, 840 m a.s.l., *Becerra et al. 1393* (HOXA!); Dpto. Palcazu, Comunidad San Pedro de Pichanaz, Sector Francisco, 832 m a.s.l., *Valenzuela and Heredia 12216* (HOXA!); Dpto. Palcazu, Reserva Comunal Yanasha, Comunidad Nativa 7 de Junio, 410 m a.s.l., *Monteagudo et al. 11522* (HOXA!); Dpto. Palcazu, Centro Connas, 373 m a.s.l., *Vásquez et al. 36508* (HOXA!). San Martín: Marical Cáceres, Toache nuevo, Quebrada de mantención, *Shunke 7781* (AMES,

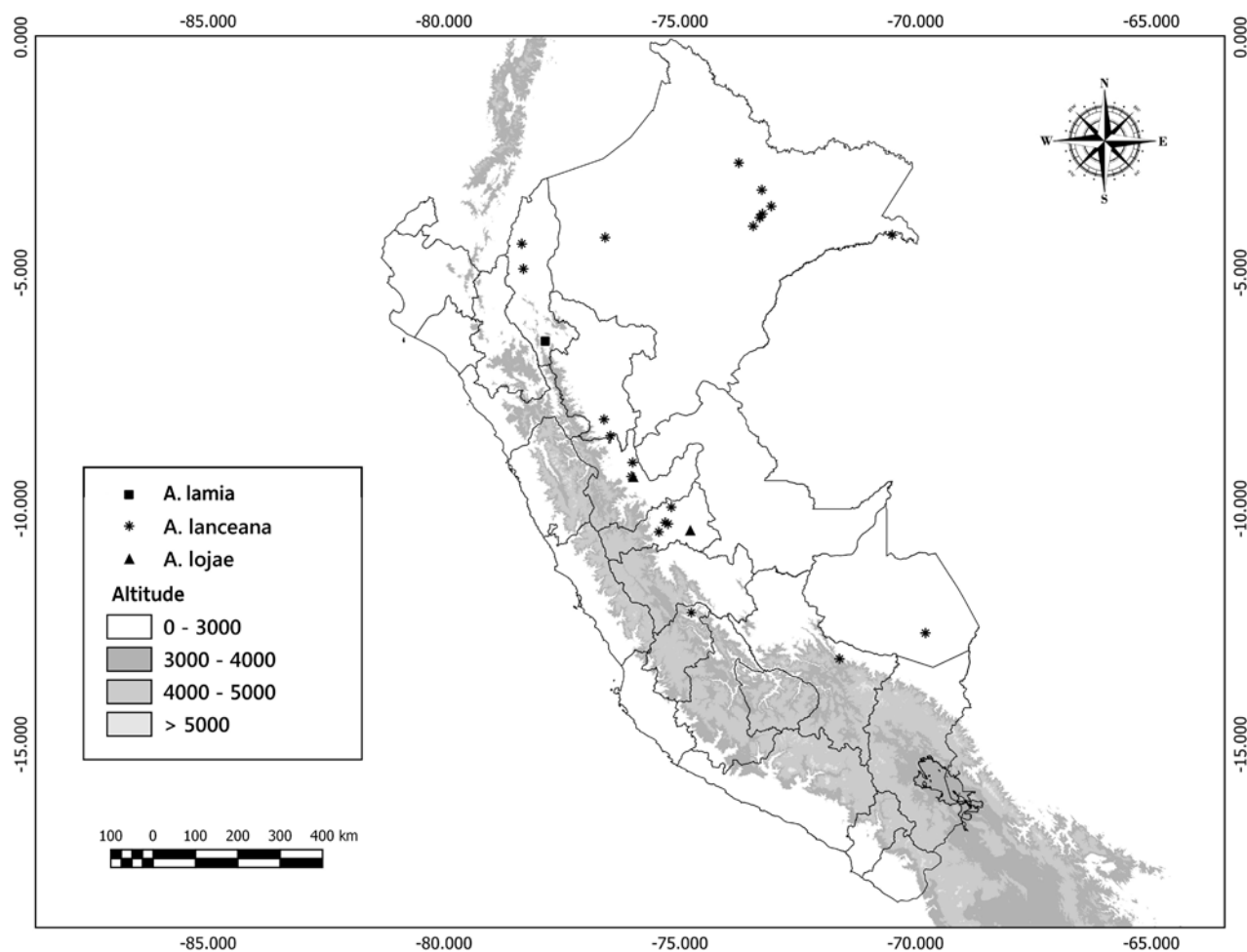


Fig. 8. Map showing the known Peruvian localities for *Acianthera lamia* (Luer) Pridgeon & M.W.Chase, *A. lanceana* (Lodd.) Pridgeon & M.W.Chase and *A. lojiae* (Schltr.) Luer.

MO); Mariscal Caceres, Dtto. Uchiza, Cachiyacu de Lepuna, *Schunke V. 7307* (MO).

18. *A. lojiae* (Schltr.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 254 (2004); *Pleurothallis lojiae* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 60–61 (1921). Type: Ecuador, Loja, on trees in dense forests of the eastern slopes of the eastern Andes of Loja, 1300–1600 m a.s.l., *Lehman 8202* (holo-: K!). Fig. 1k.

Pleurothallis brunnescens Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 183 (1923); *A. brunnescens* (Schltr.) Karremans, Harvard Pap. Bot. 21 (2): 171–187 (2016). Type: Costa Rica, Alajuela, San Pedro de San Ramón, 1100 m a.s.l., Jun. 1921, *Brenes 27* (holo-: B, destroyed). Costa Rica, Prov. Alajuela, San Isidro de San Ramón, 1075 m a.s.l., 12 Nov. 1923, *Brenes 824* (neo-: CR, designated by Barringer 1986).

Pleurothallis citrophila Luer, Selbyana 3: 266 (1977); *A. citrophila* (Luer) Pridgeon & M.W.Chase, Lindleyana 16: 243 (2001). Type: Panama, Coclé, above El Valle, 1000 m a.s.l., 2 Sep. 1976, *Luer and Butcher 1375* (holo-: SEL!).

Pleurothallis florosa Luer, Selbyana 3: 302 (1977); *A. florosa* (Luer) Pridgeon & M.W.Chase, Lindleyana 16: 243 (2001). Type: Ecuador, Manabí, s.loc., *Luer 1573* (holo-: SEL!).

Distribution.—Bolivia, Costa Rica, Ecuador, Panama and Peru (fig. 8).

Comments.—Karremans & al. (2016) proposed a new combination for *Pleurothallis brunnescens* (*A. brunnescens*) suggesting that it should be treated as an autonomous species. However, they based their decision on vegetative morphology and conjectures regarding the different flora between Ecuador and Costa Rica. After revising the holotypes of *Pleurothallis lojiae* and *Pleurothallis brunnescens*, it states clear that both species represent the same concept with slightly variations, *Pleurothallis brunnescens* present oblong leaves (vs. elliptical) and acute lip (vs. obtuse to oblong).

Studied specimens.—PERU. Huánuco: Tingo María, *Luer 2901* (SEL). Pasco: Oxapampa, 5 km SE of Oxapampa, *Smith 3639* (USM!, MO).

19. *A. marleniae* Damian, Chiron & Mitidieri, sp. nov. Type: Peru, Cajamarca, Chota, Querocoto, entrance road to «La Granja», 2600 m a.s.l., May 2014, *A. Damián* and *N. Mitidieri 03090* (holo-: UFV!). Figs. 1l, 9.

LSID: urn:lsid:ipni.org:names:77176588-1

Similar to Acianthera sicula (Luer & Vásquez) Luer but differs in having larger flowers, carinate sepals, fimbriate sub-auriculate petals, and obovoid lip with erose, broadly subquadrate lateral lobes.

Plant small, epiphytic, roots unknown. Ramicauls incomplete, erect, more than 15 cm long, gradually becoming sharply winged above, 0.8–1 cm wide at the junction with the leaf. Leaf erect, coriaceous, narrowly elliptical-ovate, obtuse, 7–9 cm long, 2–4 cm wide, sessile, cuneate, decurrent on the stem for 1–2 cm. Inflorescence in a crowded raceme, with 4–6 distichous flowers reclining on the blade of the leaf, 2.3 cm long, from a spathe 1 cm long at the apex of the secondary stem imbedded well above the base of the leaf; floral bracts 0.4–0.6 mm long; pedicel 3.5 mm long; ovary 3 mm long, densely pubescent; sepals dark purple, densely pubescent on abaxial surface, glabrous within but verrucose in the upper third, the dorsal sepal oblong-obovate, obtuse, 5–6 mm long, 3 mm wide,

connate to the lateral sepals for 0.75 mm, the lateral sepals connate to near the apex into a thick, oblong, concave synsepal, carinate, 6 mm long, 4 mm wide, with the apex shortly bifid; petals purple, oblong, obtuse, 4 mm long, 2 mm wide, with the margins sharply fimbriate above the upper third, 1-veined, the base sub-auriculate; lip dark brown, thick, fleshy, obovoid, 3-lobed, 4 mm long, 2.5 mm wide, the apex broadly rounded, densely verrucose with erose margins, the lateral lobes erect below the middle, low, erose, broadly sub-quadrate, 1 mm long, the disc with a thick pair of parallel, verrucose carinae from the base to near the middle, the base hinged to the column-foot between a pair of membranous auricles; column stout, semiterete, 3.5–4 mm long, with ventrally extended wings, clinandrium entirely covering the anther with lacerate margins, the foot thick, short, 1 mm long, stigma ventral, anther cap cucullate, obovate, capsule not seen.

Distribution.—Peru, in the mountains of Chota—Cajamarca— (fig. 10), where it grows as an epiphyte in montane forest at about 2600 m a.s.l.

Etymology.—In honor of the senior author's maternal family.

Comments.—*Acianthera marleniae* sp. nov. is most similar to *A. sicula*. Vegetatively, the latter differs by having ramicauls half wider at the apex (5 mm) compared to *A. marleniae* sp. nov. —1 cm—. Moreover, *A. sicula* presents cuneate leaves which are decurrent on the stem for less than 1 cm vs. 2 cm in *A. marleniae* sp. nov. Flowers of *A. marleniae* sp. nov. are distinguished from those of *A. sicula* by their larger size, carinate sepals and dark purple-green color —vs. brown, yellow brown—. Petals are quite similar in shape but larger —4 × 2 mm—, sub-auriculate at the base and densely fimbriate in *A. marleniae* sp. nov. vs. shorter —2.5 × 1 mm—, not auriculate and shortly denticulate in *A. sicula*. Instead of ovoid, ovate-obtuse lip with lateral lobes rounded in *A. sicula*, the lip of *A. marleniae* sp. nov. is obovoid with lateral lobes low, erose and broadly sub-quadrate.

Another similar species is *A. wyvern* (Luer & R.Escobar) Pridgeon & M.W.Chase, which differs from *A. marleniae* sp. nov. on having longer flowers —sepals—, 10 × 3.5 mm —vs. 5 × 3 mm—, obovate petals —vs. oblong— and oblong-obovate lip with oblique, oblong, lateral lobes —vs. obovoid, subquadrate lateral lobes.

20. *A. mexiae* (Luer) Pridgeon & M.W.Chase, Lindleyana 16 (4): 244 (2001); *Pleurothallis mexiae* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 174 (1999); *Pleurothallis chamensis* var. *tenuis* C.Schweinf., Bot. Mus. Leafl. 10: 176 (1942). Type: Peru, Huánuco, Churubamba, Hda. Mercedes, Cotirarda, 1560 m a.s.l., *Mexia 8215^a* (holo-: AMES!).

Distribution.—Endemic to Peru, known only from the type collection (fig. 10).

21. *A. miqueliana* (H.Focke) Pridgeon & M.W.Chase, Lindleyana 16 (4): 244 (2001); *Specklinia miqueliana* H.Focke, Tijdschr. Wis-Natuurk. Wetensch. 2: 199–200 (1849); *Pleurothallis miqueliana* (H.Focke) Lindl., Fol. Orchid. 9: 17 (1859); *Stelis miqueliana* (H.Focke) Lindl., Fol. Orchid. 9: 17 (1859); *Humboltia miqueliana* (H.Focke) Kuntze, Revis. Gen. Pl. 2: 667 (1891). Type: Surinam, river of Para, on the trunks of *Crescentia cujete*, Apr. 1853, *Focke* s.n. (holo-: W; iso-: BR!). Fig. 2a.

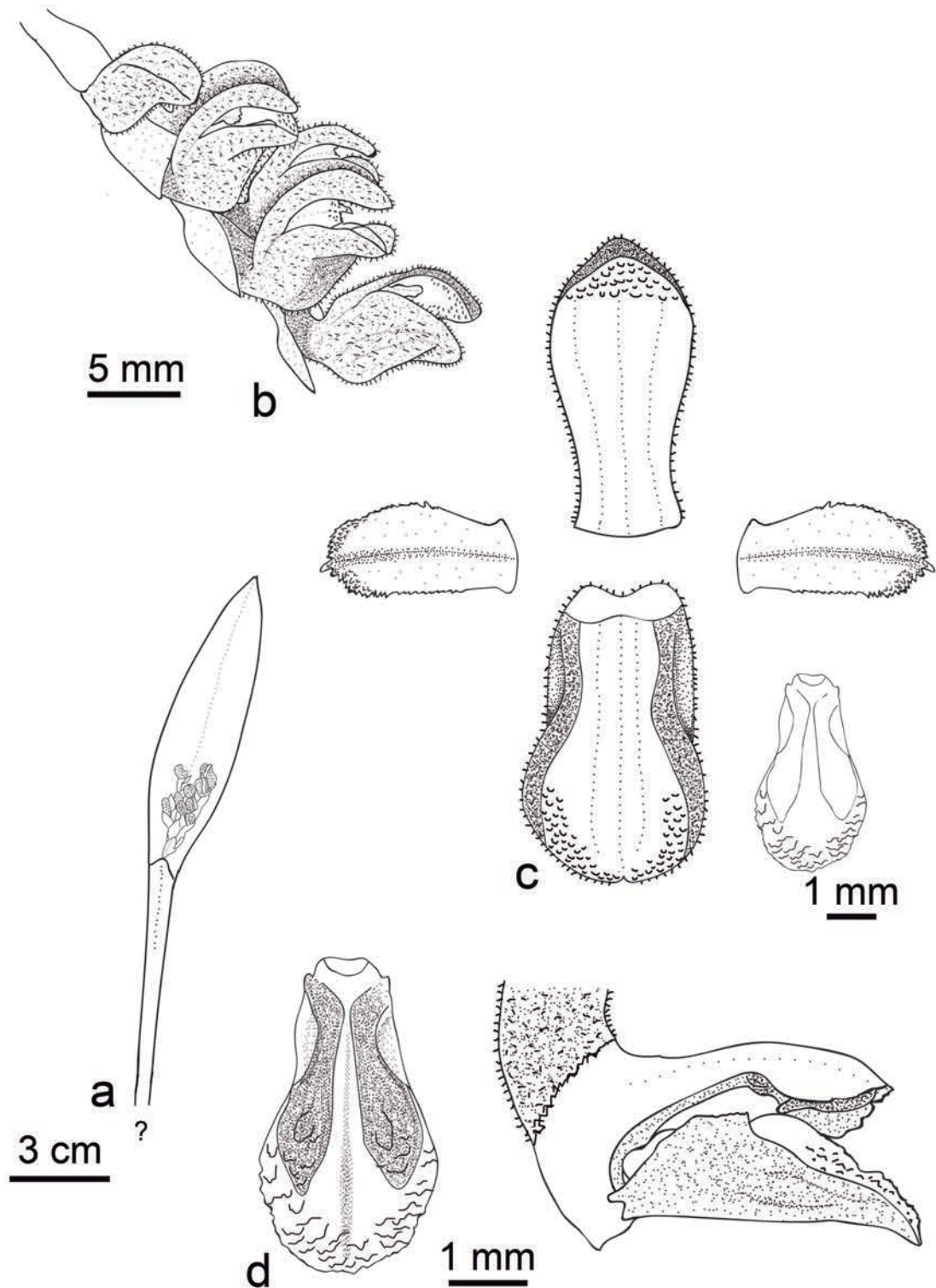


Fig. 9. *Acianthera marleniae* Damian, Chiron & Mitidieri, sp. nov.: **a**, habit; **b**, flower; **c**, dissected perianth; **d**, column and lip, lateral view, and lip in frontal view. [*A. Damián* 03090 (holo-: UFV!); drawn by A. Damián.]

Pleurothallis fimbriata Lindl., Fol. Orchid. 9: 17 (1859); *Humboltia fimbriata* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891). Type: Brazil, Panurê, Caatingas, *Spruce 2459* (holo-: K!; iso-: BR!, P!).

Pleurothallis longisepala Barb.Rodr., Vellozia ed. 2, 1: 115 (1891). Type: Brazil, Amazonas, near Uatukurá, rio Yauapery, *Barbosa* s.n. (holo-: probably lost; lecto-, designated here: Sprunger 1996: 182, tab. 126A).

Distribution.—Brazil, Ecuador, Guyana, Suriname, Peru (fig. 9) and Venezuela.

Studied specimens.—PERU. Loreto, vicinity of Iquitos, *Killip and Smith 26998* (AMES, US!); *ibid.*, *Klug 10126* (AMES); Gamitanaccha, Rio Mazan, on the bank above the trees, *Schunke 162* (AMES, K, US!, USM!).

22. *A. pantasmoides* (C.Schweinf.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 245 (2001); *Pleurothallis pantasmoides* C.Schweinf., Bot. Mus. Leaf. 15 (3): 98 (1951). Type: Peru, Cusco, Paucartambo, Yanamayo-Tambomayo, 1800 m a.s.l., 4 May 1947, *Vargas 6499* (holo-: AMES!). Fig. 2b.

Distribution.—Colombia, Ecuador and Peru (fig. 10).

Studied specimens.—PERU. Amazonas: Chachapoyas, Cerros Calla Calla, E Side, 5 km above Leimbembamba on the road to Balsas, at San Miguel, *Hutchison and Bennett 4566* (MO). Cajamarca: Cutervo, Distrito San Andres de Cutervo, Parque Nacional de Cutervo, *Diaz and Osorio 2601* (USM!, MO). Cusco: Prov. of Paucartambo, Yanamayo-Tambomayo, *Vargas 6499* (AMES!); Paucartambo, Atalaya, Junction of Rio Carbon, *Nuñez et al. 15545* (MO, CUZ!); Paucartambo, *Moscoco 843* (MO); *ibid.*, *Hutchison 6959* (USM!). Huancavelica: Ampurco, between Salcabamba and Surcubamba, *Tovar 3771* (USM!).

23. *A. polystachya* (Ruiz & Pav.) Pupulin, Anales Jard. Bot. Madrid 69: 27 (2012); *Humboltia polystachya* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil.: 234 (1798); *Stelis polystachya* (Ruiz & Pav.) Willd., Sp. Pl. 4: 139 (1805). Type: Peru, «hábitat in montibus Chinchao supra arbores», *Ruiz and Pavón* s.n. (holo-: MA). Fig. 2c.

Pleurothallis casapensis Lindl., Edwards's Bot. Reg. 28 (Misc.): 76 (1842); *Humboltia casapensis* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891); *A. casapensis* (Lindl.) Pridgeon & M.W.Chase, Lindleyana 16: 242 (2001). Type: Peru, Huánuco, Cassapi, *Mathews 1830* (holo-: K).

Pleurothallis chamensis Lindl., Orchid. Linden.: 2 (1846); *Humboltia chamensis* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 667 (1891); *A. chamensis*

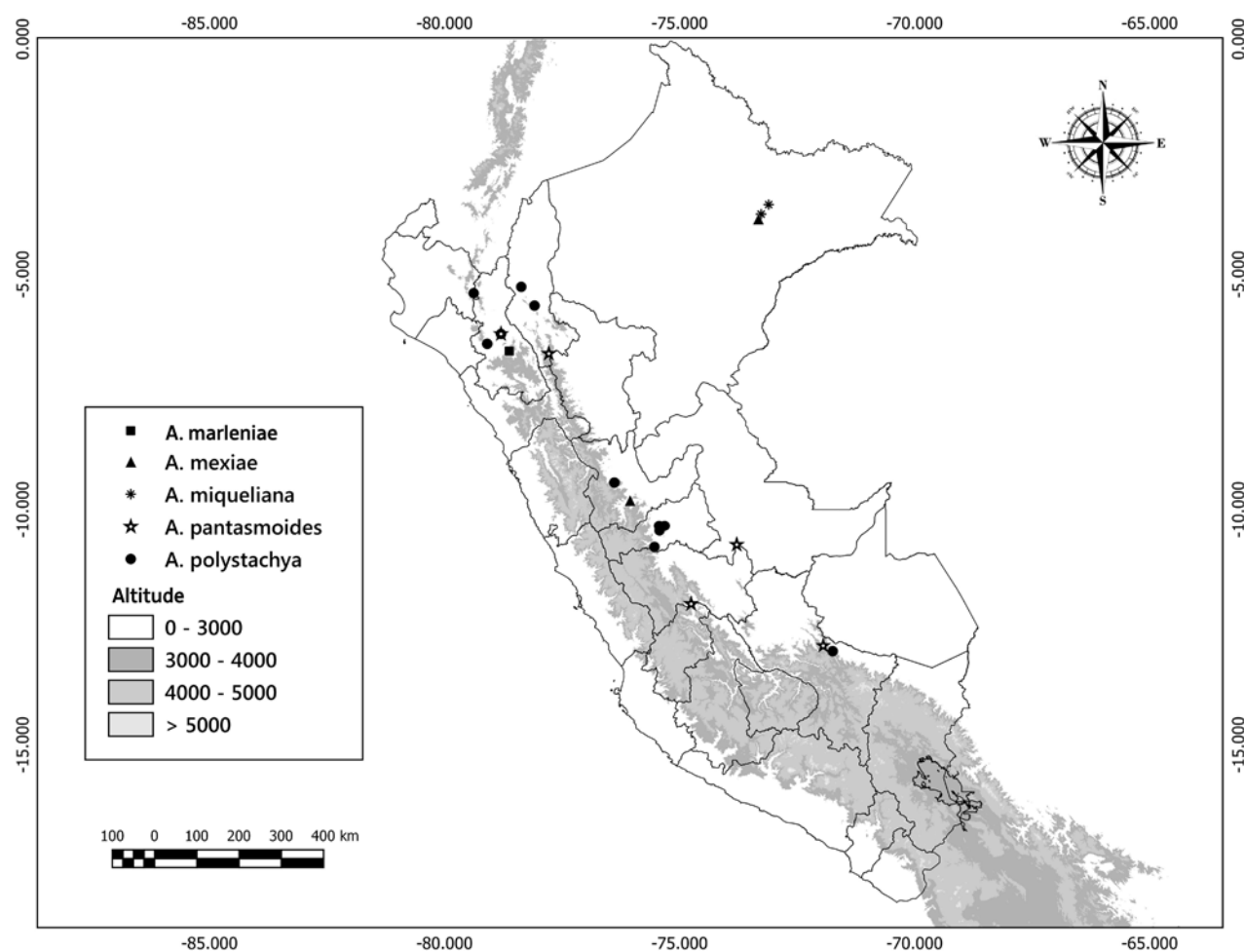


Fig. 10. Map showing the known Peruvian localities for *Acianthera marleniae* Damian & al., sp. nov., *A. mexiae* (Luer) Pridgeon & M.W.Chase, *A. miqueliana* (H.Focke) Pridgeon & M.W.Chase, *A. pantasmoides* (C.Schweinf.) Pridgeon & M.W.Chase and *A. polystachya* (Ruiz & Pav.) Pupulin.

(Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16: 242 (2001). Type: Venezuela, Mérida, along Rio Chamá, 5000 ft a.s.l., May 1842, *Linden 639* (holo-: K!; iso-: P!).

Pleurothallis triangularis Klotzsch & H.Karst., *Allg. Gartenzeitung* 15: 329 (1847). Type: Venezuela, Caracas, 6000 ft a.s.l., *Otto 911* (holo-: K; iso-: W).

Pleurothallis triquetra Klotzsch ex Lindl., *Fol. Orchid.* 9: 13 (1859). Type: Venezuela, Dist. Fed., *Karsten* s.n. (holo-: K).

Pleurothallis phyllostachys Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 9: 76 (1921); *A. phyllostachys* (Schltr.) Pridgeon & M.W.Chase, *Lindleyana* 16: 245 (2001), syn. nov. Type: Peru, Huacabamba, 2500 m a.s.l., Apr. 1912, *Weberbauer 6313* (holo-: B, probably destroyed; lecto-, designated by Luer (2004): AMES!).

Pleurothallis wolfiana Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 8: 64 (1921). Type: Ecuador, Chimboirazo, near Puente de Chimbo, *Sodiro* s.n. (holo-: B, unknown).

Pleurothallis coffeicola Schltr., *Repert. Spec. Nov. Regni Veg.* 27: 50 (1929); *A. coffeicola* (Schltr.) Pridgeon & M.W.Chase, *Lindleyana* 16: 243 (2001). Type: Bolivia, La Paz, Larecacha, between Sorata and Tipuani, 1400 m a.s.l., Dec. 1922, *Buchtien 7214* (holo-: B, probably destroyed; lecto-, designated by Luer (2004): US!).

Distribution.—Peru (fig. 10), Venezuela, Colombia, Ecuador and Bolivia. WCSP (2016) gives also Brazil, however according to Barros & al. (2016) this species does not exist in Brazil.

Comments.—After the clarification of several taxa originally described on the Peruvian expedition of Ruiz & Pavón (Pupulin 2012), it states clear that *Hulboldtia polystachya* Ruiz & Pav. —*A. polystachya* (Ruiz & Pav.) Pupulin— represents the first reference to *A. cassapensis* and should be considered the first available name for the species. In the present work, we follow that conclusion and added a new synonym, *A. phyllostachys*, treated as different species by Luer on his monograph of the genus and cited by WCSP (2016) as a synonym of *A. polystachya* without any proper reference. Both, *A. cassapensis* and *A. phyllostachys* share several vegetative features, including shortly repent habit, compressed above the middle ramicauls and elliptical decurrent leaves. Moreover, the only significant difference in what concern floral morphology between these two species are the longer floral segments of *A. phyllostachys* —i.e., sepals 13 × 3 mm vs. 10 × 3 mm, petals 5 × 2 mm vs. 3 × 1.5 mm, lip 6 × 3 mm vs. 4 × 2 mm.

According to WCSP (2016), *A. harpophylla* (Rchb. f.) Luer is listed as a synonym of *A. polystachya*, however this is not fully accurate. *Acianthera harpophylla* is easily distinguished from *A. polystachya* by its dorsal sepal, longer than the synsepal —vs. equal length— and its conspicuous intramural calli of the lip with a longitudinal callus from the base to near the apex —vs. low parallel subverrucose calli without a longitudinal callus.

Studied specimens.—PERU. Huánuco: Cassapi (Casapi), *Mathews 1830* (K). Amazonas: Bongara, Sipabamba, Quebrada Fortuna, *Young and Eisenberg 317* (MO); Chiriaco, *van der Werff et al. 24616* (MO). Cajamarca: Chota, Llama-Huambos, forest above Huarimarca, *Sagastegui and Leiva 15990* (HAO, MO). Junín: Yaupe, *Woytkowski 6402* (MO). Cusco: Calca, quebrada de Cochoc, *Vargas 16811* (CUZ!); Calca, proximidades de Hierbabuenayoc, *Tupayachi H. 1560* (CUZ!). Pasco: Oxapampa, Dist. Huancabamba, Parque Nacional Yanachaga-Chemillen, Sector Quebrada Yanachaga, *Vásquez et al. 30504* (USM!); *ibid.*, *Vásquez et al. 29525* (HOXA!); *ibid.*, *Vásquez et al. 29236* (HOXA!); Dto Chontabamba, Cerro Mirador, 2520 m a.s.l., *Valenzuela and Mateo 13128* (HOXA!). Piura: Huancabamba, east of Huancabamba, *Weberbauer 6313* (AMES). Amazonas: Bongara, Sipabamba, Quebrada Fortuna, *Young and Eisenberg 317* (MO). Cajamarca: Chota, Llama-Huambos, *Sagastegui and Leiva 15990* (F, HAO, MO). Junín: Yaupe, *Woytkowski 6402* (MO). Without locality: *Bennet 573* (UC).

24. *A. pubescens* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16 (4): 245–246 (2001); *Pleurothallis pubescens* Lindl., *Compan. Bot. Mag.* 2: 355 (1836); *Humboltia pubescens* (Lindl.) Kuntze, *Revis. Gen. Pl.* 2: 668 (1891). Type: Mexico, s.loc., *Barker* s.n. (holo-: K, not located, drawing at AMES 74658!).

Pleurothallis vittata Lindl., *Edwards's Bot. Reg.* 24 (Misc.): 73 (1838); *Humboltia vittata* (Lindl.) Kuntze, *Revis. Gen. Pl.* 2: 668 (1891). Type: Mexico, s.loc., *Loddiges* s.n. (holo-: K).

Pleurothallis smithiana Lindl., *Edwards's Bot. Reg.* 29 (Misc.): 57 (1843); *Humboltia smithiana* (Lindl.) Kuntze, *Revis. Gen. Pl.* 2: 668 (1891). Type: Brazil, Rio de Janeiro, Dec. 1841, *Smith* s.n. (holo-: K!).

Pleurothallis polystachya A.Rich. & Galeotti, *Ann. Sci. Nat., Bot., sér. 3*, 3: 16 (1845); *Humboltia polystachya* (A.Rich. & Galeotti) Kuntze, *Revis. Gen. Pl.* 2: 668 (1891), nom. illegit., non Ruiz & Pav., *Syst. Veg. Fl. Peruv. Chil.*: 234 (1798). Type: Mexico, Veracruz, 1840, *Galeotti 5135* (holo-: W; iso-: G!).

Pleurothallis bufonis Klotzsch, *Allg. Gartenzeitung* 22: 225 (1854); *Humboltia bufonis* (Klotzsch) Kuntze, *Revis. Gen. Pl.* 2: 667 (1891). Type: Venezuela, Trujillo, *Wagner* s.n. (holo-: W, not located).

Pleurothallis truxillensis Rchb. f., *Bonplandia* (Hannover) 2: 25 (1854); *Humboltia truxillensis* (Rchb. f.) Kuntze, *Revis. Gen. Pl.* 2: 668 (1891). Type: Venezuela, Trujillo, 6000 ft a.s.l., Dec. 1850, *Wagner 31* (holo-: W, not located).

Pleurothallis janeirensis Barb.Rodr., *Gen. Spec. Orchid.* 2: 29 (1881). Type: Brazil, Rio de Janeiro, Rodeio, *Barbosa* s.n. (holo-: RB, lost; lecto-, here designated: Sprunger 1996: 227 tab. 169B).

Pleurothallis rio-grandensis Barb.Rodr., *Gen. Spec. Orchid.* 2: 28 (1881). Type: Brazil, Rio Grande do Sul, *Barbosa* s.n. (holo-: RB, lost; lecto-, here designated: Sprunger 1996: 227 tab. 169A).

Pleurothallis janeirensis var. *viridicata* Barb.Rodr., *Gen. Spec. Orchid.* 2: 30 (1881); *Pleurothallis smithiana* var. *viridicata* Cogn. in *Mart., Fl. Bras.* 3 (4): 533 (1896). Type: Brazil, Rio de Janeiro, Oriente, *Barbosa* s.n. (holo-: RB, lost).

Pleurothallis coriacea Bello, *Anales Soc. Esp. Hist. Nat.* 12: 116 (1883). Type: Puerto Rico, *Bello* s.n. (holo-: B, destroyed). Puerto Rico, near Adjuntas in monte Bello, 9 Apr. 1886, *Sintenis 4251* (neo-, designated by Luer (2004): AMES!).

Pleurothallis rio-grandensis var. *longicaulis* Cogn. in *Mart., Fl. Bras.* 3 (4): 542 (1896). Type: Brazil, Rio de Janeiro, Rodeio, *Barbosa* s.n. (holo-: RB, lost).

Pleurothallis mandibularis Kraenzl., *Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn* 71: 169 (1920). Type: Mexico, Veracruz, *Liebmann* s.n. (holo-: C, drawing at AMES 74462!).

Pleurothallis bourgeaui Kraenzl., *Ark. Bot.* 16 (8): 15 (1921). Type: Mexico, Veracruz, Orizaba, 17 May 1869, *Bourgeau 2469* (holo-: P!; iso-: MPU!, G!).

Pleurothallis porphyrantha Kraenzl., *Ark. Bot.* 16 (8): 10 (1921). Type: Brazil, Paraná, Itarare, *Dusen 11573* (holo-: HBG!; iso-: AMES!).

Distribution.—Bolivia, Brazil, Caribbean, Colombia, Costa Rica, Ecuador, French Guiana, Guatemala, Honduras, Mexico, Uruguay, Nicaragua, Panama, Peru (fig. 11), Suriname and Venezuela.

Comments.—*Acianthera pubescens* is a widely distributed species ranging from Mexico to Central America —Honduras, Costa Rica and Panama—, all through the Andes —Peru, Colombia and Bolivia— and into southern Brazil and Argentina. Some differences have been suggested for populations of Central America and Mexico leading to the segregation of species traditionally considered as synonyms and the recognition of very similar species as distinct —e.g., *A. breedlovei* and *A. majoluckae*— (Solano 2015; Soto & al. 2002). We believe those differences fit on the broad concept of *A. pubescens* as Luer (2004) proposed. Solano (2015) justified its segregation based mainly on vegetative features such as leaves and

stem length, while other taxonomically relevant attributes such as petals and lip shape remain constant. Further studies are required to attend if variation among geographically separate populations of *A. pubescens* could justify its partition into an intra-specific level as subspecies as we suspect.

Peruvian specimens of *A. pubescens* have narrower leaves —10–12 × 1–3 cm—, long inflorescences —5–7 cm— and flowers dimension about the average —sepals 5–7 × 2–5 mm; petals 2–3 × 1–2 mm; long lip 3 mm—. In addition, these specimens grow as epiphytes in cloud forests between 800–2500 m a.s.l., something atypical for the species, since most of the material proceed from drier areas.

Studied specimens.—PERU. San Martín: San Roque, *Williams 7259* (AMES, F); Lamas, Alfonso de Alvarado, road to Moyobamba, *Schunke 6031* (AMES, NY). Pasco: Oxapampa, *Bennett 1510* (AMES, UC). Huancavelica: Tajacaya, Huachocolpa, *Leon et al. 2981* (MOL!).

25. *A. rodolfo-vasquezii* Damian, *Brittonia* (2018). Type: Peru, Oxapampa, Estación Biológica Jardín Botánico de Missouri, Orquidiario, área de cultivo en JBM, 2000 m a.s.l., *Vásquez et al. 36591* (holo-: USM!; iso-: HOXA!). Fig. 2d.

Distribution.—Endemic to Peru (fig. 11).

Studied specimens.—PERU. Amazonas: Utcubamba, Dtto. Bagua Grande, Caserio Berlin, Bosque Berlin, 5° 53' 53.47" S, 78° 25' 31.10" W, 1900 m a.s.l., *Damián and Rimarachin 01165* (UFV!). Huánuco: Chinchao, San Pedro de Carpish, cerca al río Lan manio, que divide al distrito de Churubamba de Carpish, a la localidad de Carpish, *Salinas and Chocce 510* (USM!). Pasco: Dtto Huancabamba, Parque Nacional Yanachaga-Chemillen, bosque remante parcialmente intervenido, 2265 m a.s.l., *Vásquez et al. 30502* (USM!); Oxapampa, Dtto Chorobamba, 1700 m a.s.l., *Smith and Brak 7631* (USM!).

26. *A. rubroviridis* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16 (4): 246 (2001); *Pleurothallis rubroviridis* Lindl., *Ann. Mag. Nat. Hist. ser. 3, 1*: 327 (1858); *Humboltia rubroviridis* (Lindl.) Kuntze, *Revis. Gen. Pl. 2*: 668 (1891). Type: Cuba, Orientali, 1856–1857, *Wright* s.n. (holo-: K!). Fig. 2e.

Pleurothallis cubensis Lindl., *Ann. Mag. Nat. Hist. ser. 3, 1*: 328 (1858); *Humboltia cubensis* (Lindl.) Kuntze, *Revis. Gen. Pl. 2*: 667 (1891); *Acianthera cubensis* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16:

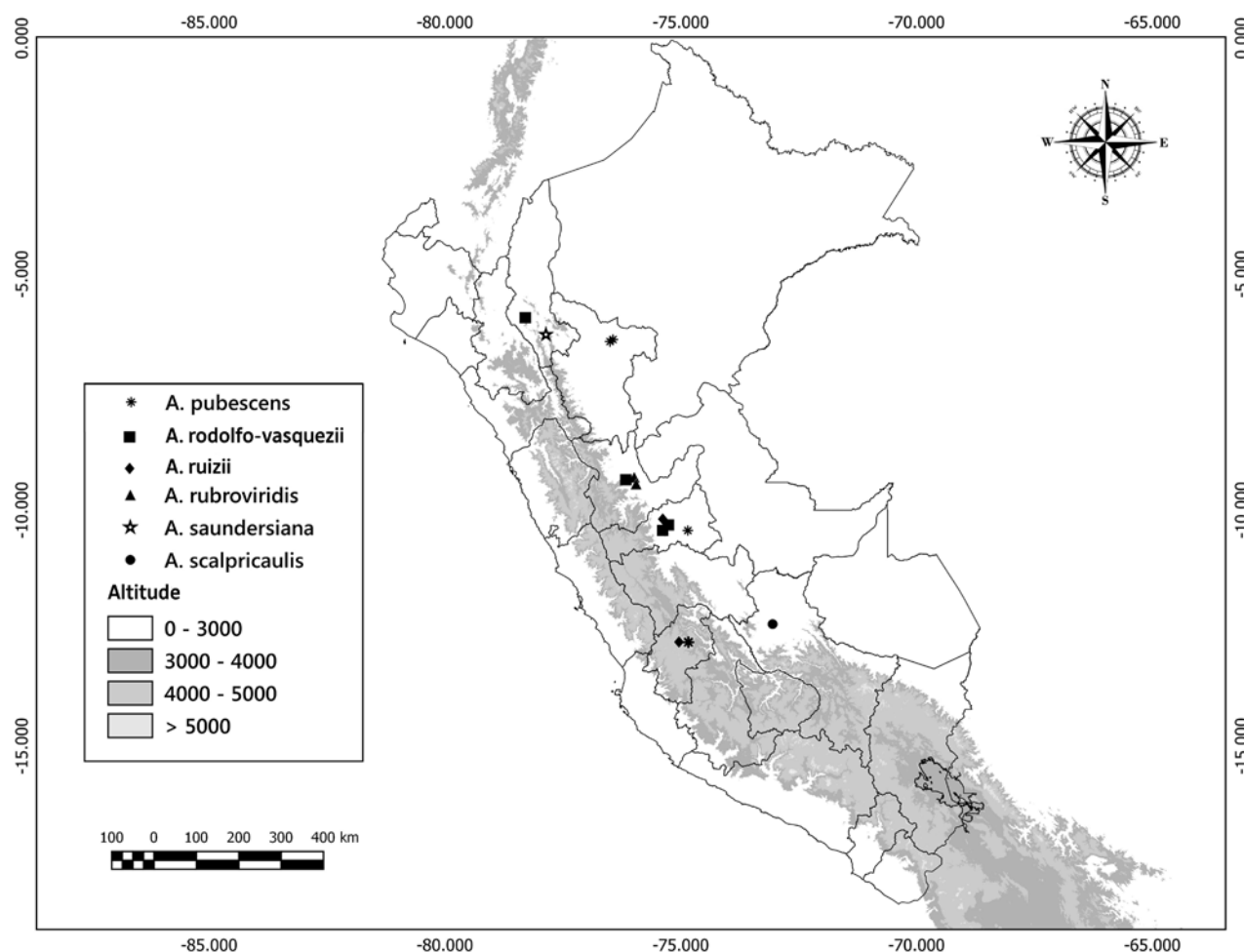


Fig. 11. Map showing the known Peruvian localities for *Acianthera pubescens* (Lindl.) Pridgeon & M.W.Chase, *A. rodolfo-vasquezii* Damian, *A. ruizii* Damian, *A. rubroviridis* (Lindl.) Pridgeon & M.W.Chase, *A. saundersiana* (Rchb. f.) Pridgeon & M.W.Chase and *A. scalpricaulis* (Luer) Pridgeon & M.W.Chase.

243 (2001). Type: Cuba, Monte Verde, 1 Jun. 1859, *Wright 653* (holo-: K!; iso-: AMES!, LE!, P!).

Pleurothallis verruculosa Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 177 (1905). Type: Peru, Cajamarca, Chota, west of Huambos, 3100 m a.s.l., *Weberbauer 4180* (holo-: B, lost; lecto-, designated here: AMES!, 38671-barcode).

Distribution.—Caribbean, Ecuador, Peru (fig. 11) and Venezuela.

Studied specimens.—PERU. Huánuco: Tingo Maria, *E. Asplund 12165* (AMES, S); South of Tingo Maria, Río Huallaga, *Luer et al. 5341* (SEL).

27. *A. ruizii* Damian, Brittonia (2018). Type: Peru, Oxapampa, Parque Nacional Yanachaga Chemillen, 2024 m a.s.l., *Perea et al. 4127* (holo-: USM!, iso-: HOXA!).

Distribution.—Endemic to Peru (fig. 11).

Studied specimens.—PERU. Huancavelica: Tajacaya, Dtto. Huachocolpa, Capcasorco, *Leon 2962* (MOL!).

28. *A. saundersiana* (Rchb. f.) Pridgeon & M.W.Chase. Lindleyana 16 (4): 246 (2001); *Pleurothallis saundersiana*

Rchb. f., Gard. Chron. 1866: 74 (1866); *Specklinia saundersiana* (Rchb. f.) F.Barros, Hoehnea 10: 110 (1984). Type: Brazil, s.loc. *Saunders* s.n [cult. at Hillfield House, near Reigate] (lecto-, designated by Toscano & Luer (2015): W!).

Pleurothallis felis-lingua Barb.Rodr., Gen. Spec. Orchid. 2: 18 (1881). Type: Brazil, Rio de Janeiro, Rodeio, *Barbosa* s.n. (holo-: RB, lost; lecto-, designated by Chiron & Bolsanello (2010): tab. 158A).

Pleurothallis josephensis Barb.Rodr., Vellozia ed. 2, 1: 117 (1891). Type: Brazil, Minas Gerais, Serra de São José d'El Rey, *Barbosa* s.n. (holo-: RB, lost; lecto-, designated by Chiron & Bolsanello (2010): tab. 160E).

Pleurothallis repens Rolfe, Bull. Misc. Inform. Kew 1912: 131 (1912), nom. illegit., non Ames, Orchidaceae 2: 271–272 (1908); *Pleurothallis ascendens* Garay, Arch. Jard. Bot. Rio de Janeiro 12: 171 (1953). Type: Brazil, Bahia, s.loc., *Wigan* s.n. (holo-: K).

Pleurothallis juergensii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 35: 54 (1925). Type: Brazil, Rio Grande do Sul, Rio Pardo, fazenda Boa Esperanza, 70 m a.s.l., Mar. 1921, *Jürgens 20* (holo-: B, destroyed).

Pleurothallis auriculigera Hoehne & Schltr., Arch. Bot. São Paulo 1: 207 (1926), nom. illegit., non (Rchb. f.) Rchb. f., Gard. Chron. 1871: 1579 (1871). Type: Brazil, São Paulo, Pirajussára, 14 Jun. 1921, *Gehrt 5713* (holo-: HB!; iso-: AMES!, SP!).

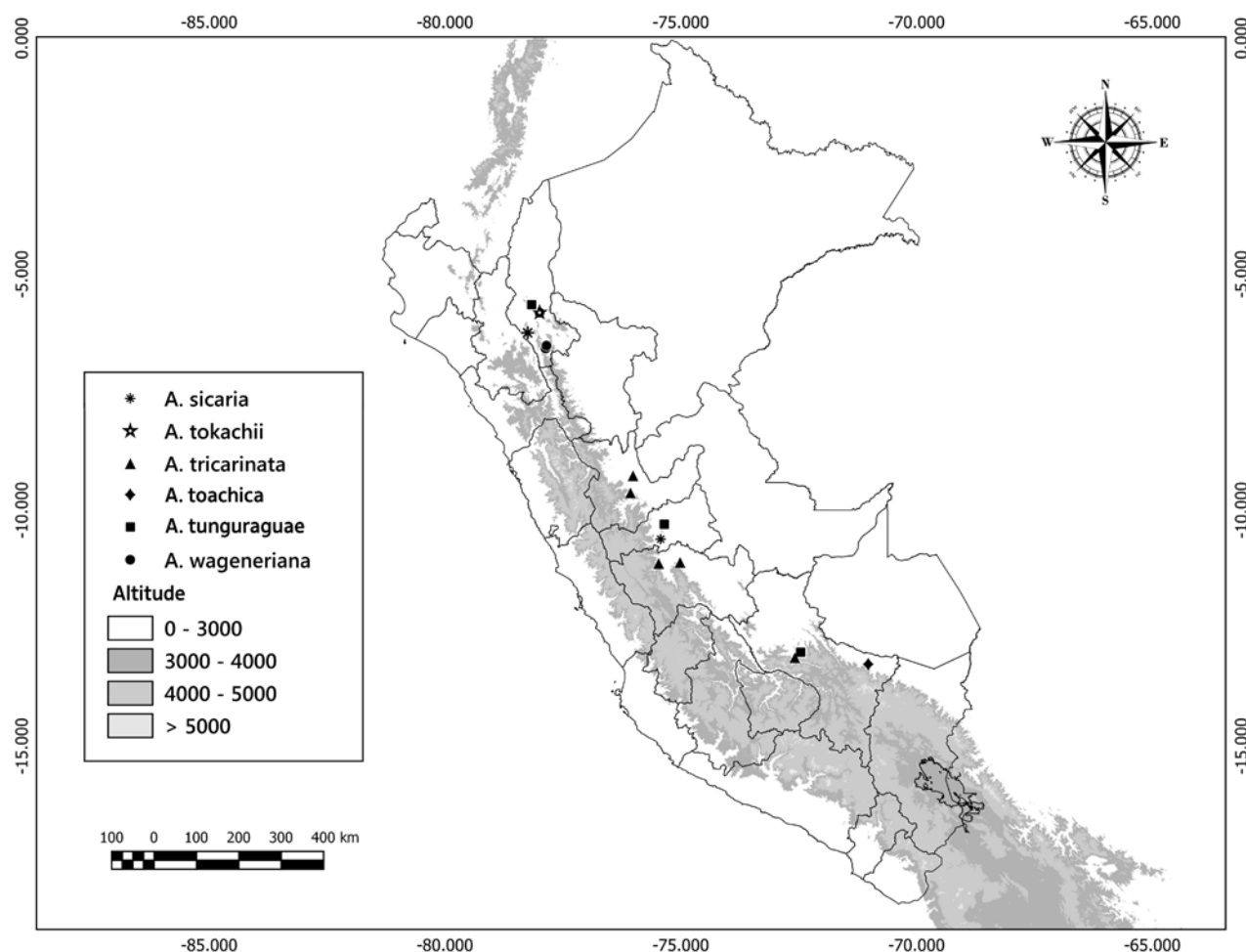


Fig. 12. Map showing the known Peruvian localities for *Acianthera sicaria* (Lindl.) Pridgeon & M.W.Chase, *A. tokachii* (Luer) Luer, *A. tricarinata* (Poepp. & Endl.) Pridgeon & M.W.Chase, *A. toachica* (Luer & Dodson) Luer, *A. tunguraguae* (F.Lehm. & Kraenzl.) A.Doucette and *A. wagneriana* (Klotzsch) Pridgeon & M.W.Chase.

Pleurothallis butantanensis Hoehne & Schltr., Arch. Bot. São Paulo 1: 209 (1926). Type: Brazil, São Paulo, Butantan, 20 Jun. 1921, *Hoehne* s.n. (holo-: B, destroyed; lecto-, designated by Luer (2004): SP 5718!; isolecto-: HB!).

Pleurothallis insularis Hoehne & Schltr., Arch. Bot. São Paulo 1: 217 (1926); *A. insularis* (Hoehne & Schltr.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 112: 118 (2007). Type: Brazil, São Paulo, Ilha da Queimada, *Gehrt 5452* (holo-: B, destroyed; lecto-, designated by Barros (2004): SP!).

Distribution.—Bolivia, Colombia, Peru (fig. 11) and Brazil.

Comments.—For a detailed revision of this species refer to Chiron & Bolsanello (2010) and Toscano & Luer (2015).

Studied specimens.—PERU. Amazonas: near Chachapoyas, *Tokach 17* (MO).

29. *A. scalpricaulis* (Luer) Pridgeon & M.W.Chase, Lindleyana 16 (4): 246 (2001); *Pleurothallis scalpricaulis* Luer., Selbyana 1 (4): 424, fig. 103 (1976). Type: Ecuador, Morona-Santiago, about 30 km south of Gualaquiza, 500 m a.s.l., 6 Aug. 1975, *Luer et al. 619* (holo-: SEL). Fig. 2f.

Distribution.—Bolivia, Ecuador and Peru (fig. 11).

Comments.—Also reported for Huánuco by Blas (2015: 45) as *Acianthera* sp.

Studied specimens.—PERU. Cusco: La Convención, about 5 km from Ivochote valley, *Damián* and *Huaycho 1086* (UFV!).

30. *A. sicaria* (Lindl.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 246 (2001); *Pleurothallis sicaria* Lindl., Edwards's Bot. Reg. 27 (Misc.): 91 (1841); *Humboltia sicaria* (Lindl.) Kuntze, Revis. Gen. Pl. 2: 668 (1891). Type: Trinidad and Tobago, s.loc., *Loddiges* s.n. (holo-: K!). Fig. 2g.

Pleurothallis tripteris Rchb. f., Linnaea 22: 829 (1850). Type: Venezuela, Distrito Federal, Caracas, 4000 ft a.s.l., Jan. 1846, *Schlim 127* (holo-: W; iso-: P!).

Pleurothallis trigonopoda Klotzsch, Allg. Gartenzeitung 21: 361 (1853). Type: Venezuela, Aragua, s.loc., *Wagner* s.n. (holo-: unknown).

Pleurothallis alpina Ames, Schedul. Orchid. 5: 14 (1923); *A. alpina* (Ames) Pridgeon & M.W.Chase, Lindleyana 16: 242 (2001). Type: Panama, Chiriquí, «Caramilla», 1500 m a.s.l., Mar. 1923, *Powell 282* (holo-: AMES!; iso-: MO!).

Distribution.—Bolivia, Caribbean, Colombia, Costa Rica, Ecuador, French Guiana, Guyana, Panama, Peru (fig. 12), Suriname, Trinidad and Venezuela.

Studied specimens.—PERU. Amazonas: Luya, Ocalli, anexo Ouise, *Díaz et al. 4400* (USM!, MO). Pasco: Oxapampa, Dist. Huancabamba, Sector Tunqui, camino a Barro Blanco, *Cardenas et al. 0968* (USM!, HOXA!).

31. *A. toachica* (Luer & Dodson) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 254 (2004); *Pleurothallis toachica* Luer & Dodson, Lindleyana 11: 188 (1996). Type: Ecuador, Pichincha, between Chiriboga and Santo Domingo, Apr. 1986, *Dodson* and *D'Alessandro 16374^a* (holo-: MO!). Fig. 2h.

Distribution.—Ecuador and Peru (fig. 12).

Studied specimens.—PERU. Cusco: Quispicanchis, Camanti, Nov. 2009, *Ballon et al. 62* (BRIT!).

32. *A. tokachii* (Luer) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 254 (2004); *Pleurothallis tokachii* Luer, Lindleyana 12 (1): 55, fig. 14 (1997). Type: Peru, Amazonas, near Pomacochas, Feb. 1993, *Tokach p-16* (holo-: MO!). Fig. 2i.

Distribution.—Endemic to Peru, known only from the type locality (fig. 12).

33. *A. tricarinata* (Poepp. & Endl.) Pridgeon & M.W.Chase, Lindleyana 16 (4): 246 (2001); *Pleurothallis tricarinata* Poepp. & Endl., Nov. Gen. Sp. Pl. 1: 49–50, pl. 87 (1836); *Humboltia tricarinata* (Poepp. & Endl.) Kuntze, Revis. Gen. Pl. 2: 668 (1891). Type: Peru, Huánuco, Cuchero, Feb. 1830, *Poeppig 1733 t.87* (holo-: W!). Fig. 2j.

Pleurothallis acutangula H.Wendl. & Kraenzl. in Rchb. f., Xenia Orchid. 3: tab. 298 (1900). Type: Brazil, Minas Gerais, s.loc., *Wendland* s.n. [cult.] (holo-: B, destroyed).

Pleurothallis trialata Rolfe, Bull. New York Bot. Gard. 4: 449 (1907), nom. illegit., non Cogn. in Mart., Fl. Bras. 3 (4): 500–501, tab. 100, fig. 2 (1896); *Pleurothallis triptera* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 68 (1922). Type: Bolivia, s.loc., *Bang 1816a* (holo-: NY).

Distribution.—Bolivia, Ecuador and Peru (fig. 12).

Studied specimens.—PERU. Huánuco: above Tingo Maria, *Jara B-4214* (MO). Cusco: Urubamba, *Vargas 3403* (AMES, CUZ). Junín: Shunke Hacienda, above San Ramón, *Schunke A. 56* (F); *ibid.*, *Schunke 1091, 1185* (F!).

34. *A. tunguraguae* (F.Lehm. & Kraenzl.) A.Doucette, Phytotaxa 275 (3): 263–276 (2016); *Otopetalum tunguraguae* F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 457 (1899); *Kraenzlinella tunguraguae* (F.Lehm. & Kraenzl.) Kuntze ex Engl. & Prantl in Engl. & Prantl (eds.), Nat. Pflanzenfam. 3: 86 (1906); *Pleurothallis otopetalum* Schltr., Repert. Spec. Nov. Regni Veg. 10: 292 (1912); *Kraenzlinella otopetalum* (Schltr.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 258 (2004), nom. superfl. Type: Ecuador, Tungurahua, Volcan Tungurahua near Baños, *Lehmann 8088* (holo-: K!; iso-: AMES!). Fig. 2k.

Distribution.—Ecuador, Colombia and Peru (fig. 11).

Studied specimens.—PERU. Amazonas: Bongara, near Shilla, *K. Young* and *Eisenberg 420* (MO); Bagua, Bosque Berlin, *Damián* and *Rimarachin 01124* (UFV!). Pasco: south of Oxapampa, *C. Luer* and *J. Luer 3841* (SEL). Cusco: Urubamba, Aguas Calientes, *Núñez 7543* (MO).

35. *A. wagneriana* (Klotzsch) Pridgeon & M.W.Chase, Lindleyana 16 (4): 246 (2001); *Pleurothallis wagneriana* Klotzsch, Allg. Gartenzeitung 20: 274 (1852). Type: Venezuela, Caracas, *Wagner 344* (holo-: W). Fig. 2l.

Pleurothallis convexifolia Barb.Rodr., Gen. Spec. Orchid. 1: 17 (1877). Type: Brazil, Minas Gerais, Caldas, *Barbosa* s.n. (holo-: RB, lost; lecto-, here designated: Sprunger 1996: 228 tab. 170).

Pleurothallis xylobiochila Kraenzl., Ark. Bot. 16 (8): 9 (1921). Type: Brazil, Paraná, near Jaguarihyva, 12 Mar. 1911, *Dusen 11583* (holo-: S!; iso-: AMES!).

Pleurothallis dasychila Luer, Selbyana 3: 286 (1977); *A. dasychila* (Luer) Carnevali & G.A.Romero in O.Hokche & al., Nuevo Cat. Fl. Vasc.

Venezuela: 753 (2008). Type: Ecuador, Loja, road north of Loja, 2000 m a.s.l., 5 Mar. 1977, Luer et al. 1545 (holo-: SEL!).

Distribution.—Colombia and Peru (fig. 12).

Studied specimens.—PERU. Amazonas: Prov. of Bongara, vicinity of Campamento Ingenio, *Hutchison and Wright 3832* (USM!, AMES, UC); between Pomacocha and Campamento Ingenio, *Hutchison and Wright 4020* (USM!); between Río Utcubamba and lake Pomacochas on the Rioja road, *Hutchison and Wright 6840* (MO); Bagua, Bosque Berlín, 1900 m a.s.l., *Rimarachin 508* (HUT!).

Excluded species

A. sicariopsis (Luer) Pridgeon & M.W.Chase, *Lindleyana* 16 (4): 246 (2001); *Pleurothallis sicariopsis* Luer, *Phytologia* 49 (3): 217 (1981). Type: Ecuador, Cotopaxi, west of El Corazón, 1200 m a.s.l., 18 Feb. 1979, Luer et al. 4025 (holo-: SEL!).

Distribution.—Ecuador and Bolivia.

Comments.—This taxon is cited for Peruvian flora by Bracko & Zarucchi (1993) without any voucher information. According to Luer (2004) this species is endemic to Ecuador. Although WCSP (2016) gave a distribution for this species from Ecuador to Bolivia through Peru, there is no evidence for the presence of the species in Peru.

ACKNOWLEDGMENTS

The authors would like to thank the staff and curators from USM, MOL and HOXA for allowing access to their collections; Ruben Sierra for assisting with literature; Erica Morón Abad, Luis Filipe Varela, Luis Egoavil, Jose Edquen, Luis Ocupa, Sofia Arevalo, John Janovec, Sergio Olortegui, Luis Torres and K. Yupanqui for sharing their photos of *Acianthera*; Walter Espindola for elaborating the distribution maps; Leyda Rimarachin and her family for field work support during our visit to Berlin-Amazonas; and the reviewers for their valuable recommendations on the manuscript, specially to Rodolfo Solano who provided critical additional comments and corrections.

REFERENCES

Barringer K.A. 1986. *Typification of Schlechter's Costa Rican Orchidaceae. I, Types collected by A. Brenes*. Chicago Natural History Museum, Chicago. <https://doi.org/10.5962/bhl.title.2664>

Barros F. 2002. Notas nomenclaturais em *Pleurothallidinae* (Orchidaceae), principalmente brasileiras. *Bradea* 8: 293–297.

Barros F. & Guimarães L.R.S. 2010. New combinations and a new name in Brazilian *Orchidaceae*. *Neodiversity* 5: 26–33. <https://doi.org/10.13102/neod.51.7>

Barros V.F., Rodrigues V.T., Barberena F.F.V.A., Fraga C.N., Pessoa E.M., Forster W., Menini Neto L., Furtado S.G., Nardy C. & Azevedo C.O., Guimarães L.R.S. 2016. *Orchidaceae* in Lista de Espécies da Flora do Brasil. Website: <http://floradobrasil.jbrj.gov.br/jabot/floradobrasil/FB10986> [accessed: 18 Feb. 2016].

Bennett D.E.J. & Christenson E.A. 1993–2001. *Icones Orchidacearum Peruvianum* [plates 1–600]. David Bennett, Lima.

Blas J. 2015. *Diversidad, Rescate y Conservación de Orquídeas, en el proyecto Central Hidroeléctrica Chaglla*. Centro de Producción Fondo Editorial Universidad Nacional Mayor de San Marcos, Lima.

Brako L. & Zarucchi J. 1993. Catalogue of the Flowering Plants and Gymnosperms of Peru. *Monographs in Systematic Botany of the Missouri Botanical Garden* 45: 414–425.

Chase M.W., Cameron K.M., Freudenstein J.V., Pridgeon A.M., Salazar G., van den Berg C. & Schuiteman A. 2015. An updated classification of *Orchidaceae*. *Botanical Journal of the Linnean Society* 177: 151–174. <https://doi.org/10.1111/boj.12234>

Chiron G.R., Guiard J. & van den Berg C. 2012. Phylogenetic relationships in Brazilian *Pleurothallis* sensu lato (*Pleurothallidinae*, *Orchidaceae*): evidence from nuclear ITS rDNA sequences. *Phytotaxa* 46: 34–58. <https://doi.org/10.11646/phytotaxa.46.1.5>

Chiron G.R. & van den Berg C. 2012. Révision taxonomique du genre *Acianthera* (Orchidaceae, *Pleurothallidinae*). *Richardiana* 12: 59–77.

Chiron G.R. & Bolsanello R.X. 2010. Quatre taxons nouveaux pour l'Espírito Santo (Brésil) dans le morphogroupe *Acianthera saundersiana* (Orchidaceae). *Richardiana* 10 (4): 198–220.

Damián A. 2018. *Acianthera rodolfo-vasquezii* and *A. ruizii*, spp. nov. (Orchidaceae: *Pleurothallidinae*) from the montane cloud forest of the central Andes, Peru. *Brittonia* 2018: 1–6. <https://doi.org/10.1007/s12228-017-9508-y>

Karremans A., Bogarin D., Diaz-Morales M., Fernandez M., Oses L. & Pupulin F. 2016. Phylogenetic Reassessment of *Acianthera* (Orchidaceae: *Pleurothallidinae*). *Harvard Papers in Botany* 21 (2): 171–187. <https://doi.org/10.3100/hpib.v21iss2.2016.n4>

León B., Roque J. & Ulloa Ulloa C. 2006. Libro Rojo de las Plantas endémicas del Perú. *Revista Peruana de Biología, Número Especial* 13 (2): 1–971.

Lindley J. 1859. *Pleurothallis. Folia Orchidacea: an enumeration of the known species of Orchids*. J. Mathews, London.

Luer C.A. 1986. *Icones Pleurothallidarum 3: Systematics of Pleurothallis*. *Monographs in Systematic Botany of the Missouri Botanical Garden* 20: 1–120.

Luer C.A. 2002. A Systematic method of Classification of the *Pleurothallidinae* Versus a Strictly Phylogenetic Method. *Selbyana* 23 (1): 57–110.

Luer C.A. 2004. *Icones Pleurothallidarum 26: Pleurothallis subgenus Acianthera and three allied subgenera. A second century of new species of Stelis of Ecuador, Epibator, Ophidion, Zootrophion*. *Monographs in Systematic Botany of the Missouri Botanical Garden* 95: 1–265.

Luer C.A. 2006. *Icones Pleurothallidarum 28: A reconsideration of Masdevallia, Systematics of Specklinia and vegetatively similar taxa (Orchidaceae)*. *Monographs in Systematic Botany of the Missouri Botanical Garden* 105: 1–274.

Luer C.A. 2009. *Icones Pleurothallidarum 30: Lepanthes of Jamaica. Systematics of Stelis of Ecuador, Part Four*. *Monographs in Systematic Botany of the Missouri Botanical Garden* 115: 1–264.

Luer C.A. 2011. Miscellaneous New Species in the *Pleurothallidinae* (Orchidaceae) Excluding Species from Brazil. *Harvard Papers in Botany* 16 (2): 311–360. <https://doi.org/10.3100/0.25.016.0206>

Luer C.A. & Thoerle L. 2012. Miscellaneous new species in the *Pleurothallidinae* (Orchidaceae). *Harvard Papers in Botany* 17: 333–368. <https://doi.org/10.3100/025.017.0214>

McNeill J., Barrie F.R., Buck W.R., Demoulin V., Greuter W., Hawksworth D.L., Herendeen P.S., Knapp S., Marhold K., Prado J., Prud'homme van Reine W.F., Smith G.F., Wiersema J.H. & Turland N.J. 2012. International Code of Nomenclature for Algae, Fungi, and Plants (Melbourne Code). Koeltz, Königstein.

Pridgeon A.M., Solano R. & Chase M.W. 2001. Phylogenetic relationships in *Pleurothallidinae* (Orchidaceae): combined evidence from nuclear and plastid DNA sequences. *American Journal of Botany* 88: 2286–2308. <https://doi.org/10.2307/3558390>

- Pridgeon A.M. & Chase M.W. 2001. A phylogenetic reclassification of the *Pleurothallidinae* (Orchidaceae). *Lindleyana* 16: 235–271.
- Pridgeon A.M. 2005. Subtribe *Pleurothallidinae*. In Prigeon A.M., Cribb P.J., Chase M.W. & Rasmussen F.M. (eds.), *Genera Orchidacearum. Epidendroideae* (Part One) 4: 319–422. Oxford University, Oxford.
- Pupulin F. 2012. The *Orchidaceae* of Ruiz & Pavón's "Flora Peruviana et Chilensis". A taxonomic study. II. *Anales del Jardín Botánico de Madrid* 69: 143–186. <https://doi.org/10.3989/ajbm.2336>
- Schweinfurth C. 1958–1959. Orchids of Peru. *Fieldiana. Botany* 30: 1–531.
- Solano R. 2015. A taxonomic synopsis of the Mexican species of *Acianthera* (Orchidaceae: *Pleurothallidinae*) including a new species. *Phytotaxa* 218 (1): 39–60. <https://doi.org/10.11646/phytotaxa.218.1.3>
- Soto M., Solano R. & Salazar G. 2002. *Acianthera breedlovei*. In Hagsater E. & Gerardo A. (eds.), *Icones Orchidacearum. Orchids of Mexico* 5–6: tab. 502.
- Sprunger S. 1996. *João Barbosa Rodrigues – Iconographies des orchidées du Brésil, v1. The Illustrations*. Friedrich Reinhardt Verlag, Basle.
- Toscano de Brito A. & Luer C. 2015. New species and nomenclatural notes in *Acianthera* from Brazil. *Lankesteriana* 15 (1): 77–92. <https://doi.org/10.15517/lank.v15i1.18526>
- Thiers B. 2017. Index herbariorum: a global directory of public herbaria and associated staff. New York Botanical Garden's virtual herbarium. Website: <http://sweetgum.nybg.org/science/ih/> [accessed: Feb. 2017].
- Ulloa Ulloa C., Zarucchi J.L. & León B. 2004. Diez años de adiciones a la Flora del Perú: 1993–2003. *Arnaldoa* (Edic. Esp. Nov. 2004): 1–242.
- WCSP. 2016. World Checklist of Selected Plant Families. The Royal Botanic Gardens, Kew. Website: <http://apps.kew.org/wcsp/> [accessed: Feb. 2016].
- APPENDIX**
- Alphabetical list of collectors included: *Andre* 4632 (7); *Asplund* 12165 (26); *Becerra et al.* 1393 (17); *Brenes* 27 (16); *Berlin* 1605 (11); *Barker* s.n. (21); *Bateman* s.n. (2); *E. Bello* s.n. (21); *Bennet* 573 (23), 1510 (23), 3436 (13); *Bourgeau* 2469 (21); *Barbosa* s.n. (28), s.n. (18); s.n. (21), s.n. (23); s.n. (2); *Ballou et al.* 62 (31); *Bang* 1816a (27); *Buchtien* 7214 (20); *S. B-3856* (2); *Calatayud et al.* 534, 535 (13); *Calatayud* and *R. Vásquez* 520 (13); *Calatayud* and *Vargas* 6856^a, 6848 (13); *Cardenas et al.* 0968 (30), 0968 (25); *Celedonia* 258 (8); *Chambi et al.* 666 (8); *Croat* 17792, 19221, 20402 (17), 18537 (14); *Damián* 8031 (13); *Damián* and *Mitidieri* 03090 (19); *Damián* and *Rimarachin* 01166 (3), 1165 (25), 1168 (8), 1124 (34); *Damián* and *Huaycho* 1086 (29); *Diaz* and *Osores* 2601 (22); *Diaz* 7655 (17); *Diaz et al.* 1319 (17), 4400 (30); *D'Alessandro* 163 (4); *Dodson* and *Thien* 889 (8); *Dusen* 11573 (21), 11583 (28); *Focke* s.n. (18); *Ferreyra* 14425 (13); *Fernandez* and *Ruiz* 3513 (12); *Foster et al.* 6731A (7); *Foster* 4436 (8); *Focke* s.n. (15); *Gehrt* 5452 (23), 5713 (23); *Gentry* and *Revilla* 20861 (17); *Gentry et al.* 76893 (8), 61306 (13), 36521 (8); *Galeotti* 5135 (21); *Hajek* 99, 80 (7), 331 (11), 2196 (13); *Hoehne* s.n. (23); *Hübner* 173 (15); *Hashimoto* and *Wada* s.n. (12); *Hutchison* and *Kenneth Wright* 6841 (7), 3832 (35), 6856A, 3840, 6848 (13), 4020 (35), 6840 (35), 3970 (7); *Hutchison* and *Bennett* 4566 (22); *Hutchison* 6959 (22); *Henchman* s.n. (15); *Householder et al.* 769 (17); *Herzog* 1627; *Jara* s.n. (17); *Jürgens* 20 (23); *Jara B-4214* (27), s.n. (15); *Kujikat* 94 (8); *Kiilip* and *Smith* 26998 (21), 24221 (7); *Klug* 10013 (15), 10013 (15), 10050 (17), 10126 (21); *Karsten* s.n. (20); *Leon et al.* 2992 (17), 2981 (24), 2962 (27); *Lopez et al.* 4282 (7); *Luer et al.* 619 (24), 11766 (10), 13927 (7), 5341 (26), 1545 (28); *Luer* and *Butcher* 1375 (16); *Luer* 1573 (16), 249S (1), 5892 (1), 2901 (18); *Luer* and *Luer* 3841 (34); *Lankester* 454 (13); *Liebmann* s.n. (21); *Lehman* 8202 (16), 8167 (15); *Lance* s.n. (15); *Loddiges* 13 (15), s.n. (21), s.n. (25); *Linden* 639 (20); *Monteagudo et al.* 10168 (17), 11522 (17); *Z. Moscoso* 843 (22); *Mandon* 1132 (1); *Mexia* 8215 (20); *Macbride* 3837 (2), 4252 (7), 40555 (7); *Mathews* 1830 (23); *Miers* s.n. (4); *Moore* 10050 (1); *Maas et al.* 6154 (17); *McDaniel* and *Rimachi* 27836 (8), 26585 (17); *Moron de Abad* 3 (10), 4 (4); *Nakata* 626 (1); *Núñez* 7543 (34); *Núñez et al.* 15545 (22); *Occupia* s.n. (7); *Olortegui* 1 (6); *Otto* 911 (20); *Perea et al.* 4127 (27); *Poeppig* 1733 (33), 1604 (6); *Powell* 282 (25); *Ruiz* and *Pavón* s.n. (20); *Revilla* 3590 (17), 4310 (8); *Rimarachin* 508 (35); *Rimachi* 3700, 7457 (8); *Sagastegui* and *Leiva* 15990 (23); *Salas* s.n. (7), 128 (16); *Salinas* and *Choce* 510 (25); *Sodiro* s.n. (20); *Smith* 363 (16), 4010 (17), 3639 (18); *Smith* and *Brak* 7631 (25); *Solomon* 3540 (8); *Schunke* 1091, 1185 (27), 162 (21), 6031 (23), 56 (27), 1063 (17), 6891 (8), 7307 (17), 7781 (17), 127 (25); *W.W. Saunders* s.n. (23); *Sieber* 206 (4); *Spruce* 2459 (18), 2724, 2725 (15); *Tupayachi* 1560 (23); *Tokach p-16* (32), 17 (28), *P-64* (13); *O. Tovar* 3771 (22); *Ureta et al.* 52 (11); *Valenzuela* and *Heredia* 12216 (17); *Valenzuela* and *Mateo* 13128 (23); *Vargas* 16811 (23), 18425 (14), 18426 (12), 3403 (27), 3757 (5), 6499 (22), 8977 (5); *Vásquez et al.* 19020, 36508, 34764 (17), 5305 (8), 30504, 29525, 29236 (23), 36591 (25), 30502 (25), 36659, 29638 (11); *Vásquez* and *D. Criollo* 5773 (8); *Vásquez* and *Jaramillo* 16628, 4890 (8), 8702 (13); *Weberbauer* 6313 (23); *Wright* 653 (22), s.n. (22); *Wigan* s.n. (23); *Woytkowski* 6402 (23); *van der Werff et al.* 9920 (17), 24616 (23); *Wagner* 31 (21), 344 (28), 549 (20), 562 (15), s.n. (21), s.n. (25); *Wendland* s.n. (27); *Williams* 7259 (23); *Weng* 48 (17); *Young* and *M. Eisenberg* 317 (23), 420 (34).