

First record of *Andinia panica* (Orchidaceae) from Colombia

Marta Kolanowska^{1,2*}, Ramiro Medina Trejo³ & Dariusz L. Szlachetko⁴

¹Department of Geobotany and Plant Ecology, Faculty of Biology and Environmental Protection, University of Lodz, Banacha 12/16, 90-237 Łódź, Poland

²Global Change Research Centre AS CR, Belidla 986/4a, 60300, Brno, Czech Republic

³Sibundoy Valley, Alto Putumayo, Colombia

⁴Department of Plant Taxonomy and Nature Conservation, Faculty of Biology, University of Gdansk, Wita Stwosza 59, 80-308 Gdańsk, Poland

* corresponding author (e-mail: marta.a.kolanowska@gmail.com)

Abstract. *Andinia panica*, previously known exclusively from the type locality in Ecuador, is reported for the first time from Colombia. Characteristic of population found in Valle de Sibundoy is provided together with photographs of the specimen and information about its habitat. Moreover, the comparative morphology of species included in *Andinia* subgenus *Minuscula*, is presented together with the key to species identification.

Key words: biodiversity, Neotropics, Pleurothallidinae

1. Introduction

The taxonomy of the orchid genus *Andinia* (Luer) Luer was confusing for years and species recently embedded in this taxon (Wilson *et al.* 2017) were previously classified in, i.a., *Lepanthes* Sw., *Pleurothallis* R. Br., *Salpistele* Dressler, *Lueranthos* Szlach. & Marg., *Masdevalliantha* (Luer) Szlach. & Marg., *Xenosia* Luer, and *Neooreophilus* Archila. In the broad concept *Andinia* includes vegetatively variable species with caespitose or rhizomatous habit, usually producing successively-flowered inflorescences. Their leaves are herbaceous to thickly coriaceous. The flower morphology differs significantly between the species groups. The column foot is observed exclusively in *Andinia* subgen. *Masdevalliantha* (Luer) Karremans & Mark Wilson. *Andinia* subgen. *Brachycladium* (Luer) Karremans & S.Vieira-Urbe includes pendent plants with leaves appearing alternately and often overlapping. Three other subgenera, *Aenigma*, *Andinia* and *Minuscula*, are separable by the lip middle lobe form (sometimes transformed into an appendix or appendix-like structure) and the lip lateral lobes position (subtending the column vs frontal).

Among over 70 *Andinia* species, just three, *A. hystri-cosa* (Luer) Pridgeon & M. W. Chase, *A. panica* (Luer

& Dalström) Pridgeon & M. W. Chase, and *A. trimytera* (Luer & R. Escobar) Pridgeon & M.W.Chase, were assigned by Wilson *et al.* (2017) to the subgenus *Minuscula* Karremans & Mark Wilson. Plants included in this taxon are characterized by the repent-ascending habit, coriaceous leaves, loose inflorescence, spiculate ovary, 3-lobed lip with more or less triangular, conspicuous, lateral lobes and apical anther and stigma. Until now, two of these three Andean species, *A. hystri-cosa* and *A. trimytera*, were found in Colombia.

The recent studies conducted in Valle de Sibundoy revealed the presence of the third species of subgen. *Minuscula* in Colombia – *A. panica*.

2. Material and methods

Studies on the orchid flora of Sibundoy Valley have been conducted since 2012. Plant material found during field excursions and herbarium specimens deposited in COL and PSO were compared with type material and protologues. Both vegetative and generative characters of each plant were examined (leaves, inflorescence architecture, shape and size of the floral bracts, flower morphology and gynostemium structure). The comparative research was conducted in: AMES, B, BM, C, CHOCO, CUVC, E, F, FLAS, FMB, HUA, JAUM,

K, LLANOS, LPB, MA, MO, NHN, NY, P, PMA, R, RENZ, VALLE, and W (Thiers 2018).

3. Results

3.1. Species characteristic

Andinia panica (Luer & Dalström) Pridgeon & M. W. Chase, *Lindleyana* 16(4): 251. 2001. \equiv *Pleurothallis panica* Luer & Dalström, *Monogr. Syst. Bot. Missouri Bot. Gard.* 61(3): 6. 1996. Type: Ecuador. Sucumbios: epiphytic in forest between La Bonita and Rosa Florida, alt. 1600-2000 m, 14 Mar 1996. *S. Dalström, S. Ingram & K. Ferrell-Ingram 2123* (Holotype: MO).

Plant small, caespitose. Ramicauls slender, erect, 1-1.5 mm long, enclathed by 2 thin sheaths. Leaf erect, coriaceous, up to 7 mm long, 2 mm wide, elliptic, apex dentate, base cuneate. Inflorescence 2-flowered raceme, flowers produced successively; peduncle 5 mm long, slender. Floral bract 1 mm long, obliquely ovate, acute. Pedicel 2 mm long, ovary 0.8 mm long, spiculate. Flower greenish-yellow with yellow-red lip, sepals carinate-spiculate externally. Dorsal sepal 3.1 mm long, 1.5 mm wide, ovate, obtuse, 3-veined. Lateral sepals 3.5 mm long, 1.2 mm wide, connate in the

basal 1.8 mm, oblong, rounded at the apices, 2-veined, pubescent. Petals 1.5 mm long, 0.5 mm wide, oblong-ovate, obtuse, 1-veined. Lip hinged to the column foot base, 3-lobed, 1 mm long, 2.5 mm wide, middle lobe triangular, lateral lobes obliquely ovate, acute, lip margins crenate-denticulate, papillose-verrucose; disc with a shallow, central callus. Gynostemium ca. 1.2 mm long, stout, anther and rostellum apical.

Representative specimen: Colombia. Dept. Putumayo. Valle de Sibundoy. „La Palma”. Alt. ca. 2550 m. 2 August 2018. *R. Medina T. 1124* (JAUM!) (Fig. 1).

Distribution, habitat and ecology: Colombian and Ecuadorian populations of *A. panica* are located about 100 km apart from each other (Fig. 2). This species grows epiphytically in the Colombian north-Andean montane forest at the altitude higher of about 500 m than it was initially found in Ecuador. The type specimen of *A. panica* was found in flower in March 1996 (Luer 1996), the Colombian population flowers in August.

3.2. Taxonomic notes

The three species included in *Andinia* subgenus *Minuscula* differ in vegetative and floral characters (Table 1). Both in *A. hystricosa* and *A. trimytera*, the leaf apex is apiculate, while in *Andinia panica* it is

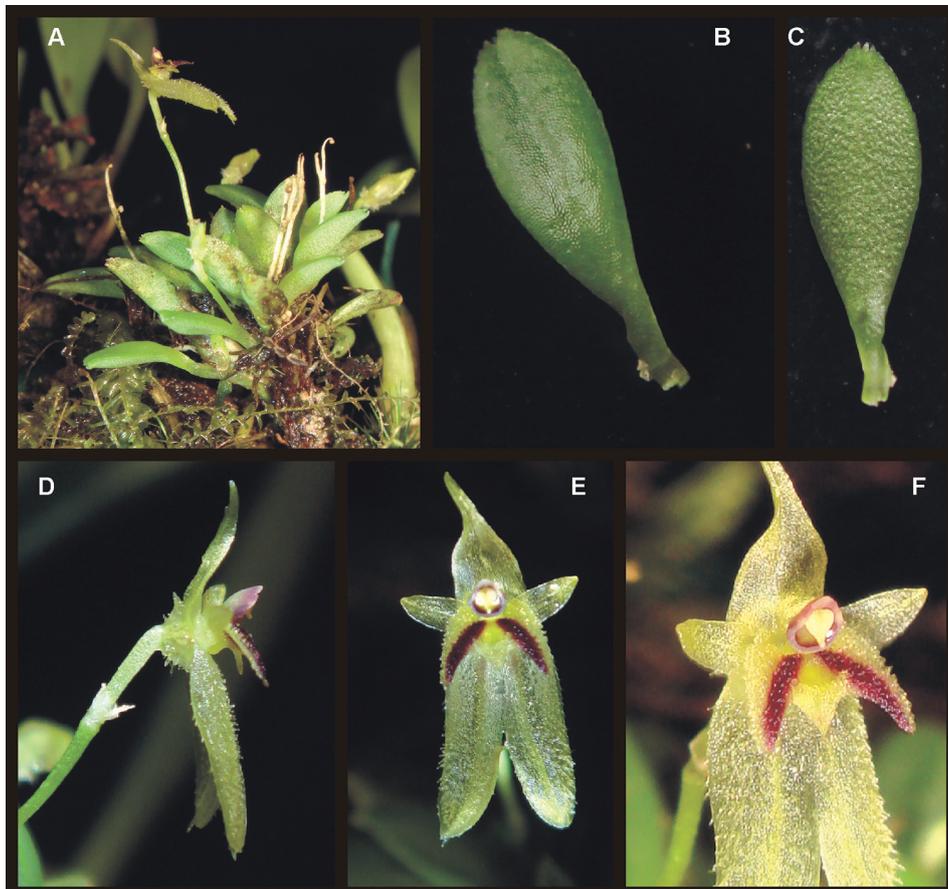


Fig. 1. Colombian specimen of *Andinia panica*

Explanations: A – habit, B-C – leaf, D – flower, side view, E – flower, front view, F – petals, lip and gynostemium closeup

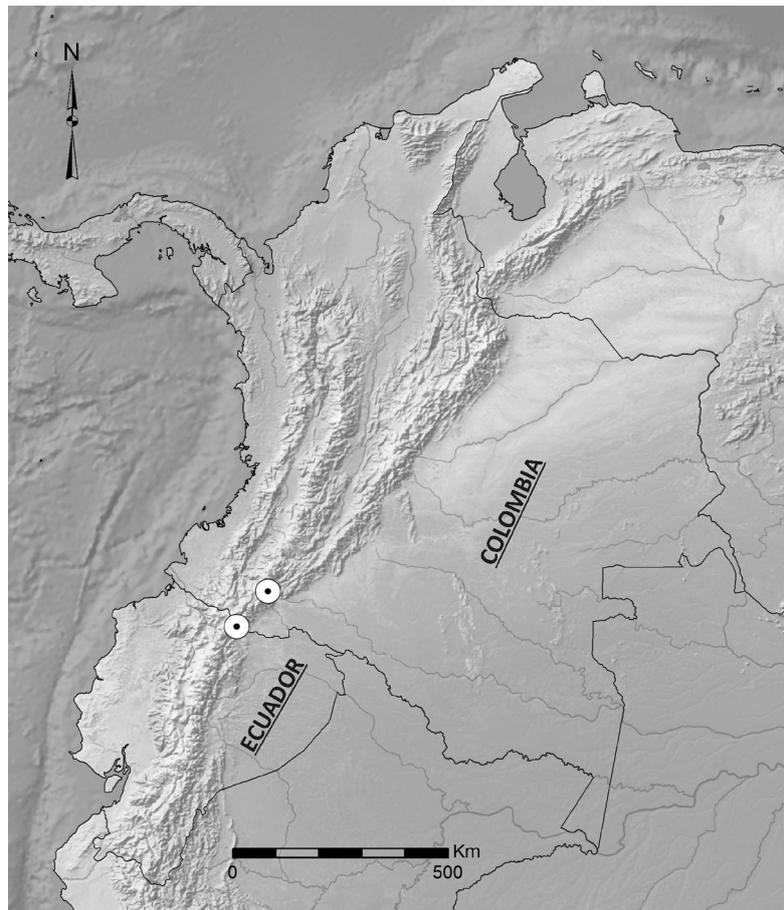


Fig. 2. Distribution of *Andinia panica*

dentate. Flowers of *A. trimytera* are generally smaller than in other two species (sepals 2.1-2.7 mm vs 3.0-4.5 mm) and its petals are microscopic, only about 0.1 mm long. *Andinia hystricosa* and *A. panica* can be

easily distinguished based on petal form (oblong-ovate, subacute to obtuse in *A. panica* vs narrowly ovate, acute, long-acuminate in *A. hystricosa*). Moreover, unlike in *A. panica*, the lip lateral lobes of *A. hystricosa* are curved

Table 1. Comparative morphology of *Andinia hystricosa*, *A. panica*, and *A. trimytera*

	<i>A. hystricosa</i>	<i>A. panica</i>	<i>A. trimytera</i>
Leaves	8-18 × 2-4.5 mm, elliptic-obovate, apex apiculate	5-7 × 2-3 mm, elliptic, obtuse, apex dentate	4-6 × 2.5-3.5 mm, broadly elliptic, apex apiculate
Dorsal sepal	3.5 × 1.25 mm, ovate, acute, carinate-spiculate	3 × 1.5-2 mm, ovate to ovate-triangular, acute, carinate-spiculate	2.1 × 1.2 mm, ovate, more or less compressed at the acute, recurved apex, subcarinate
Lateral sepals	4 × 1.25 mm, ovate, oblique, acute, connate for 1.5 mm, carinate-spiculate	3.5-4.5 × 1.2-1.5 mm, oblong-ovate, obtuse, connate for ca. 1.5-1.8 mm, carinate-spiculate, pubescent	2.7 mm × 1 mm, ovate, oblique, acute, connate for 1 mm, carinate-spiculate
Petals	2.75 × 0.5 mm, narrowly ovate, acute, long-acuminate	1.5-1.75 × 0.5-0.75 mm, oblong-ovate, subacute to obtuse	microscopic, ca. 0.1 mm long, oblong, obtuse
Lip	transversely 3-lobed, 1 × 1.75 mm, margin crenulate-denticulate, subverrucose; middle lobe narrowly triangular, lateral lobes obliquely ovate, uncinata, curved forward, acute; disc with a concave callus in the centre	transversely 3-lobed, 1 × 2.5-2.75 mm, margin crenulate-denticulate, papillose-verrucose, middle lobe triangular, lateral lobes obliquely ovate, uncinata; disc with flat, shallow callus in the centre	transversely 3-lobed, 1.5 × 1.5 mm, margin crenulate-denticulate, papillose-verrucose, middle lobe triangular, lateral lobes obliquely triangular; disc with a shallow callus in the centre

forward. The difference is observed also in the number of lateral sepal veins (2 in *A. panica*, 3 in *A. hystricosa*). The key to identification of *Andinia* subgenus *Minuscula* species is provided.

3.3. Key to *Andinia* subgen. *Minuscula*

1. Petals microscopic, less than 0.2 mm long
 *A. trimytera*
 1* Petals not microscopic, at least 1.5 mm long 2

2. Petals 1.5-1.75 mm long, oblong-ovate, subacute to obtuse *A. panica*
 2* Petals ca. 2.75 mm long, narrowly ovate, acute, long-acuminate *A. hystricosa*

Acknowledgments. The curators and staff of the cited herbaria are thanked for their kind hospitality and assistance during visits. This research was supported by the grant No. 14-36098G of the Grantová Agentura České Republiky.

References

- LUER C. A. 1996. Icones Pleurothallidarum XIV. Systematics of *Draconanthes*, *Lepanthes* subgenus *Marsipanthes* and subgenus *Lepanthes* of Ecuador; Addenda to *Brachionidium*, *Lepanthes* subgen. *Brachycladium*, *Platystele*, *Pleurothallis* subgen. *Aenigma* and subgen. *Ancipitia*. Monogr. Syst. Bot. Missouri Bot. Gard. 61: 1-286.
- THIERS B. 2018. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/science/ih/>.
- WILSON M., FRANK G. S., JOST L., PRIDGEON A. M., VIEIRA-URIBE S. & KARREMANS A. P. 2017. Phylogenetic analysis of *Andinia* (Pleurothallidinae; Orchidaceae) and a systematic re-circumscription of the genus. *Phytotaxa* 295(2): 101-131.