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EPIDENDRUM EDQUENII (LAELIINAE), A NEW SPECIES FROM A MONTANE WET FOREST OF THE PRIVATE CONSERVATION AREA LA PAMPA DEL BURRO, AMAZONAS, PERU

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Abstract. A new species, *Epidendrum edquenii*, is described and illustrated from the Private Conservation Area La Pampa del Burro, department of Amazonas, northeastern Peru. It belongs to the informal Takulumena group, characterized by *Vanda*-like monopodial stems with basal or lateral, successive inflorescences. The new species is distinguished by its non-pubescent, red flowers with green dorsal surface, margins, and apices of the sepals and petals, yellow-green base of column and disc of lip, acuminate sepals 9.5–10.7 mm long, narrowly ovate petals with the margin densely and shortly ciliate, and widely triangular lip, 6.0 × 9.5 mm, with the margin scarcely papillose. A list and an identification key for the previously known species of the Takulumena group are provided. Furthermore, the new name *Epidendrum vulcanitungurahuae* is proposed to replace the illegitimate combination *Epidendrum tungurahuae*, predated by *E. tunguraguae*.

Resumen. Se describe e ilustra una nueva especie, *Epidendrum edquenii*, del Área de Conservación Privada La Pampa del Burro, departamento de Amazonas, noreste de Perú. Pertenece al grupo informal Takulumena, que se caracteriza por sus plantas monopodiales con tallos similares a *Vanda* e inflorescencias sucesivas, basales o laterales. La nueva especie se distingue por las flores rojas, no pubescentes, con superficie dorsal, márgenes y apices de sépalos y pétalos verdes, base de la columna y disco del labelo amarillo-verde, sépalos acuminados 9.5–10.7 mm de largo, pétalos angostamente ovados con el margen densa y cortamente ciliado y el labelo, ampliamente triangular, 6.0 × 9.5 mm, con el margen escasamente papiloso. Se presenta una lista y una clave para la identificación de las especies conocidas del grupo Takulumena. Se propone el nuevo nombre *Epidendrum vulcanitungurahuae* para reemplazar la combinación ilegítima *Epidendrum tungurahuae*, antecedida por *E. tunguraguae*.

Keywords / Palabras clave: Andes, clave de identificación, *Epidendrum vulcanitungurahuae*, grupo Takulumena, identification key, Takulumena group, taxonomía, taxonomy

Introduction. *Epidendrum* L. is one of the largest genera in the neotropical Orchidaceae. Hágsater *et al.* (2019) recognize approximately 1500 described species, but according to their calculations, the total number of species reaches about 2400. These calculations are based on herbarium specimens and images of live plants with flowers recorded in AMODATA, the database of the AMO Herbarium (Hágsater & Sánchez Saldaña 2016).

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Epidendrum is distributed from North Carolina in the southeastern United States to Misiones in northern Argentina, with the greatest species diversity in middle- to high altitudes in the Andean Cordillera. Ongoing molecular studies of approximately 500 species (Hágsater *et al.* unpubl. data), confirm the findings of Hágsater & Soto Arenas (2005), showing that the genus is monophyletic. Within the genus are identifiable clades or species groups based on vegetative and floral characteristics, although no formal taxonomic status has been proposed. Most species of the genus have cane-like stems, a sympodial growth mode, and apical inflorescences. However, some have thickened, pseudobulbous stems, or a monopodial growth mode, and basal or lateral inflorescences. The flowers generally have the lip united to the column throughout, though there are exceptions with the lip partially or totally free from the column. Likewise, most species have four pollinia, but a few have two or eight. The pollinarium lacks a viscidium but has a viscarium, i.e., a part of the rostellum that produces glue. This glue comes into contact with the pollinarium only through the intervention of the pollinator (Dressler 1993, Dressler & Salazar 1991). After the removal of the pollinarium/viscarium, the rostellum usually shows a distinct longitudinal slit.

Historically, the circumscription of the genus *Epidendrum* has been complicated by authors who attempted to segregate subgenera or even genera (e.g., *Amblostoma* Scheidw., *Epidanthus* L.O.Williams, *Lanium* (Lindl.) Lindl. ex Benth., *Neolehmannia* Kraenzl., and *Stenoglossum* Kunth) based on vegetative characteristics like presence of pseudobulbs, or floral similarities such as large, white, star-shaped flowers, or the number of pollinia (Barringer 1991). However, molecular phylogenetic studies have shown that features such as the presence of pseudobulbs have independently evolved multiple times within the genus. Additionally, floral similarities observed among morphologically distinct species often represent convergent pollination syndromes, indicating ecological guilds rather than close phylogenetic relationships. For instance, the large, star-shaped flowers with a nocturnal fragrance of the pseudobulbous *E. ciliare* L. are nearly indistinguishable from those of the cane-like-stemmed *E. nocturnum* Jacq. and the pendulous *E. parkinsonianum* Hook., despite their belonging to distant clades (Hágsater & Soto Arenas 2005: Fig. 301–303). The common factor among these species is that they are pollinated by sphingid moths (Ackerman & Montalvo 1990, Hágsater & Soto Arenas 2005 and references therein, Moosburg *et al.* 2014). However, such noticeable morphological features easily misled taxonomists who base their decisions on superficial comparisons of a few characters arbitrarily deemed as "more important."

The Takulumena group of *Epidendrum* (Hágsater & Santiago 2008) was proposed as a new genus by Szlachetko and collaborators (Szlachetko & Kolanowska 2014, Szlachetko *et al.* 2006, 2011). This proposal was based on the small, monopodial, *Vanda* R.Br.-like plants with imbricating, distichous leaves and a usually complicated basal inflorescence, producing new single-flowered units over several years from the base of the stem or, with age, from the lower internodes of the stem (Fig. 1–2). The species included in this group occur in Andean Venezuela, Colombia, Ecuador, and Peru. However, molecular phylogenetic studies (Granados Mendoza *et al.* 2020, Hágsater *et al.* unpubl. data) have demonstrated that this group of species, including *E. sophronitoides* F.Lehm. & Kraenzl. (type species of *Takulumena* Szlach.), is deeply nested in *Epidendrum*. Therefore, its segregation at the generic level is not justified. Here, in addition to proposing a new species, we provide a list of all the 14 species we recognize as belonging to the Takulumena group. We also include a key for their identification and color photographs when available.

Material and methods

Study area.— The Área de Conservación Privada La Pampa del Burro (ACPPB), established in 2013, covers an area of 2776.96 ha on the eastern Andean Cordillera. It belongs to Perla del Imaza, Comunidad Campesina of Yambrasbamba, province of Bongará, department of Amazonas, ca. 5° 36' 13.7" S, 77° 59' 26.7" W, in an elevational interval of 1750 to 1900 m. The vegetation includes wet montane cloud forests and low forests on white sand. The available information on the floristic diversity of the area, in particular the Orchidaceae, is very limited, with only 12 species of the family recorded so far (Shanee *et al.* 2012). However, as the area is being explored, a high diversity of plants is being recorded, especially of the genus *Epidendrum* (Arista *et al.* 2023, Damián *et al.* 2022), indicating that this genus is much more diverse than previously estimated.

Botanical material.— The material on which the new species is based was collected during a field trip to the ACPPB in July 2022. Digital photographs were taken in the field with a digital camera (Nikon D850, Nikon Corporation, Tokyo, Japan) equipped with a Nikkor 60 m, 2.8 lens, and a Nikon Speedlight SB–70. A Lankester Composite Dissection Plate (LCDP; Karremans 2020) was prepared with Adobe Photoshop v. 24.1.0. A specimen was pressed and deposited in the herbarium of the Universidad Nacional Toribio Rodríguez de Mendoza, Chachapoyas, Peru (KUELAP) to serve as the holotype. For taxonomic identification, the specimen was first assigned to the corresponding informal group within the genus *Epidendrum*, corresponding to the Takulumena group (Hágsater & Santiago 2008) because of its *Vanda*-like monopodial stems with basal or lateral, successive inflorescences. Then we compared it with the types, records of types, protologues, and additional publications and illustrations of all the species assignable to the Takulumena group, as well as the records available in the extensive database of Herbario AMO (AMODATA; Hágsater & Sánchez Saldaña 2016). The herbaria consulted include AAU, AMES, AMO, ANDES, B (photographs taken before its destruction), BM, BR, BRIT, C, CAS, CHAX, CM, COAH, COL, CPUN, CTES, CUVC, CUZ, E, ENCB, F, FI, FMB, G, GH, GOET, HAO, HB, HBG, HCEN, HNOP, HOXA, HURP, HUSA, HUT, INPA, ITA, JAUM, K, KUELAP, L, LE, LL, LOJA, M, MA, MEXU, MICH, MO, MOL, NY, OXF, P, PR, PRC, PRG, Q, QAP, QCA, QCNE, QPLS, R, RENZ, S, SEL, TEX, TNS, U, UC, UFV, US, USF, USM, VEN, W, WIS and WRSL. The description is based on the type, complemented with additional material found in Ecuador and Peru and cited below.

Taxonomic treatment

Epidendrum edquenii Hágsater, E.Santiago & J.P.Arista, ***sp. nov.*** (Fig. 1, 2B).

TYPE: PERU. Amazonas: Province of Bongará, District of Yambrasbamba, a 20 m de la carretera a Perla del Imaza, en un lote de pasto de ganado (Santa Rosa), 2079 m, 15 Aug. 2022, *J. P. Arista et al. 276* (holotype: KUELAP!).

Diagnosis: Similar to *Epidendrum rhodovandoides* Hágsater but sepals 9.7–10.7 mm long (*vs*. 4–5.5 mm long), petals narrowly ovate with the margin densely and short ciliate (*vs*. petals narrowly lanceolate with the margin scarcely long-ciliate), lip widely triangular with the margin scarcely papillose (*vs*. lip sub-cordiform with the margin ciliate).

Epiphytic, monopodial, *Vanda*-like, erect *herb* 3–6 cm tall. *Roots* 1–2 mm in diameter, basal, fleshy. *Stem* 1.5–3.0 × 0.5–0.8 cm, simple, erect, laterally compressed, entirely covered by foliar sheaths, occasionally producing new stems from the base of the lower internode of the primary stem in older plants. *Leaves* 5–11, distributed throughout stem, distichous in a single plane, spreading, canaliculate, arching, articulate, coriaceous, rugose, medium green, margin reddish; sheaths 7.5–12.0 mm long, minutely striated, rugose, green, turning ochre-green with age; blade 1.4–4.8 × 0.7–1.0 cm, linear-oblong, apex rounded, minutely apiculate; margin minutely papillose towards apex. *Spathe* lacking. *Inflorescence* 2.5 cm long, produced from the base of the stem, flowering over several years from short successive segments, entirely covered by leafless imbricating bracts, base tubular, apex acuminate, striated, scarious. *Floral bracts* 10 × 6–8 mm, longer than ovary, tubular in the natural position, widely ovate when spread-out, apex acuminate, similar to those of scape. *Flowers* solitary, a single flower produced from each segment of inflorescence, non-resupinate, red with green dorsal surface, margins, and apices of the sepals and petals, base of the column and disc of lip yellow-green. *Ovary* 6 mm long, terete, thick, not inflated, furrowed. *Sepals* fleshy, glabrous, ovate, short acuminate, apiculate, 5-veined, margin entire; dorsal sepal 9.5 × 5.0 mm, free, spreading; lateral sepals 10.7 × 5.3 mm, obliquely united to about 3/4 of underside of the column, partly spreading, apex aristate. *Petals* 8.0 × 3.0 mm, spreading, free, fleshy, glabrous, narrowly ovate, shortly acuminate, slightly oblique, 3-veined, margin shortly and densely ciliate, spreading. *Lip* 6.0 × 9.5 mm, united to the column, widely triangular, base truncate, apex truncate, apiculate, margin minutely and scarcely papillose, spreading; disc concave; ecallose, with a prominent, fleshy mid-rib low at the base becoming higher and more prominent towards apical 2/3 of the lip, ending at apex of the lip. *Column* 4 mm

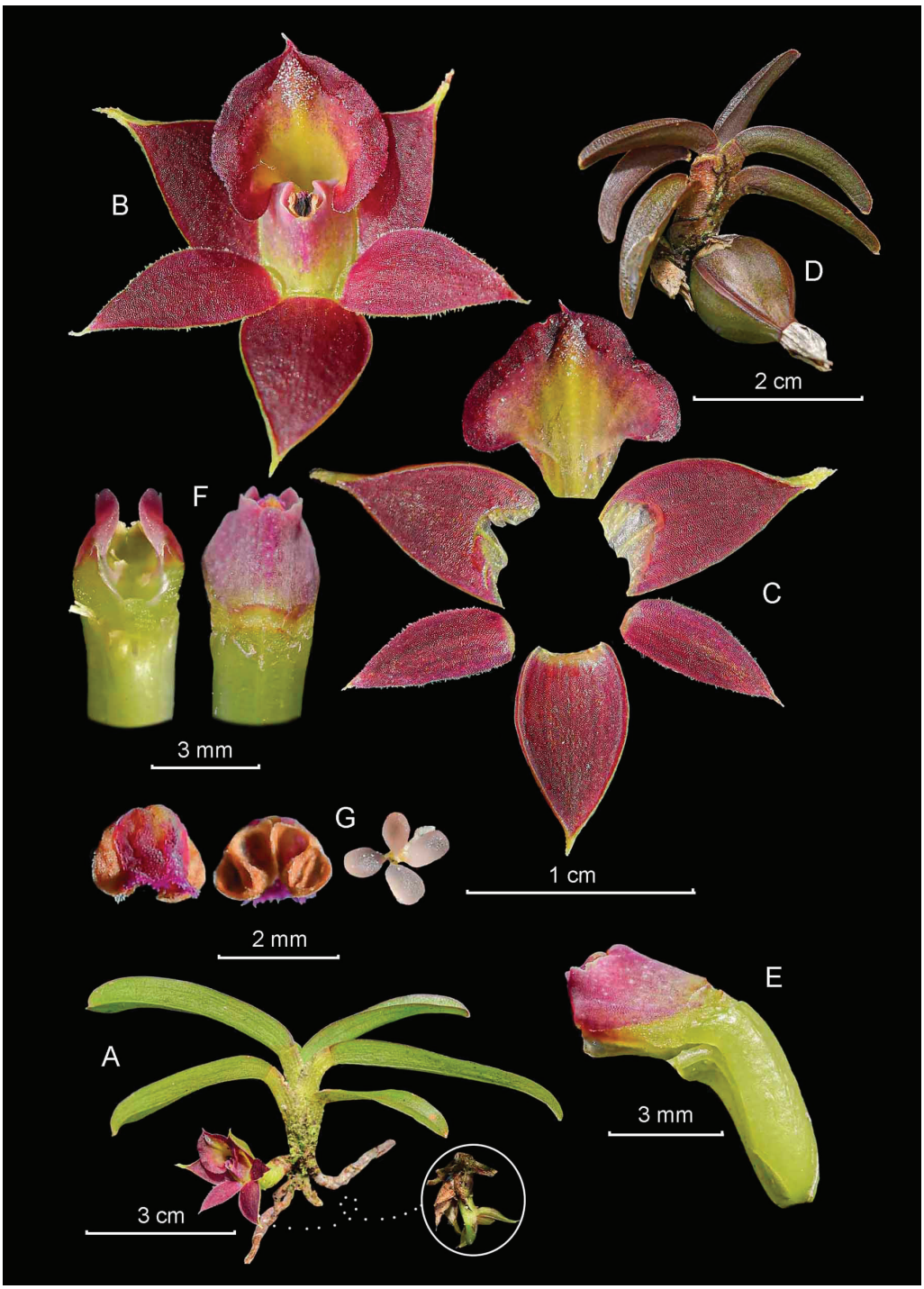

FIGURE 1. *Epidendrum edquenii*. **A**. Flowering plant (the inset shows the inflorescence from below). **B**. Flower from the front. **C**. Perianth segments. **D**. Plant with developing capsule. **E**. Ovary and column from the side. **F**. Column from below (left) and above (right). **G**. Column from above (left) and from below (right). **H**. Pollinarium. Based on *Arista et al. 276*. Photographs by J. D. Edquén Oblitas; LCDP prepared by X. Alcántara.

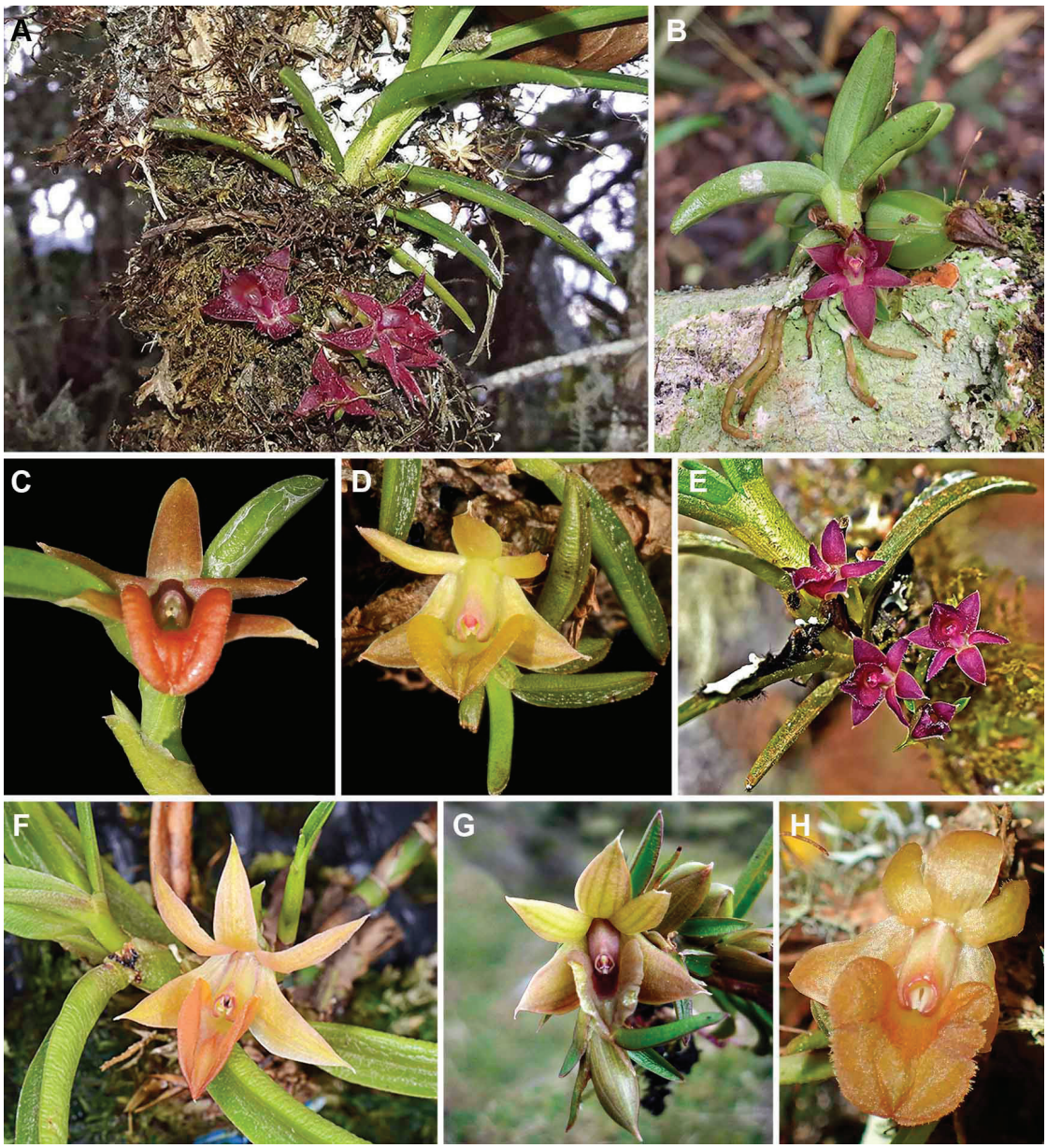

Figure 2. Selected species of the Takulumena group of *Epidendrum*. **A**. *E. boyacaense*. **B**. *E. edquenii*. **C**. *E. florezianum*. **D**. *E. kapuleri*. **E**. *E. rhodovandoides*. **F**. *E. sophronitoides*. **G**. *E. uribeianum*. **H**. *E. vulcanitungurahuae*. Photographs by F. O. Espinosa (A), Círculo de Investigación en Taxonomía, Florística y Ecología Vegetal, Universidad Nacional Agraria La Molina (B), G. Reina-Rodríguez (C), E. Hágsater (D), A. Hirtz (E), R. Jiménez-Machorro (F), J. S. García Revelo (G), and R. Gelis (H). All reproduced with permission.

long, thick, straight. *Clinandrium-hood* reduced, margin entire. *Rostellum* sub-apical, slit; viscarium semi-liquid. *Lateral lobes of the stigma* small, occupying less than half of the stigmatic cavity. *Anther* reniform, truncate, papillose at apex, 4-celled. *Pollinia* 4, obovoid, light pink, caudicles soft, and granulose. *Capsule* 21 × 12 mm; sessile; body 14 × 12 mm, globose; apical neck 7 mm long.

Eponymy. The specific epithet honors José Dilmer Edquén Oblitas (1991–), who graduated as an Environmental Engineer at the Universidad Nacional de San Martín, Peru, and who has devoted seven years to researching orchid diversity of the Bosque de Protección Alto Mayo in the northern edge of the department of San Martín. He made significant contributions to the orchid inventory of the ACCPB.

Distribution and habitat. Currently known from northern Peru and southern Ecuador. In Peru, from the departments of Amazonas (outskirts of the ACPPB) and Cajamarca (Jaén and Chota). Epiphytic in wet montane forest at 1750–3000 m elevation. The type was part of a colony on an isolated tree of *Cedrelinga* sp. (Fabaceae) in a pasture, among remnants of wet montane forest on the road to Perla del Imaza, at 2079 m elevation.

Conservation status. Data Deficient (DD). Presently known from five localities in Peru and Ecuador, at 1750–3000 m elevation. The distance between the farthest of them is 285 km.

Additional specimens examined. Ecuador. Zamora-Chinchipe: Area of Estación Científica San Francisco, road Loja-Zamora, ca. 35 km from Loja, 2150 m, 11 Oct. 2008, *Werner 2658* (AMO!); Palanda: Beyond the pass, Yangana to Valladolid, 2500–3000 m, April 1985, *Dalessandro 397* (MO!).

Other records. Peru. Amazonas, Rodríguez de Mendoza, 1750 m, *Arbildo s.n.* (digital image AMO!); Cajamarca, Jaén, al norte [de] San José de la Alianza, 2160 m, 9 Feb. 2022, *Círculo de Investigación en Taxonomía, Florística y Ecología Vegetal, Universidad Nacional Agraria La Molina s.n.* (digital image at http://www.inaturalist.org/observations/106480085, accessed 24 January 2023); Chota, Yaquil, 2793 m, 10 Sept. 2020, *Tafur 151* (digital images AMO!).

Phenology. Flowering and fruiting from August to February.

Discussion. *Epidendrum edquenii* is similar to *E. rhodovandoides* Hágsater (2008), which differs in its tiny plants to 2 cm tall (vs. 3–6 cm tall), glabrous, cardinal-red to reddish magenta flowers, sepals 4.0–5.5 mm long, and sub-cordiform, acuminate lip 3 × 4 mm. *Epidendrum dasyanthum* Hágsater is also similar, but differs from both the above species in its salmon-pink to reddish, concolorous flowers, strongly papillose floral segments, acute sepals 9–13 mm long, and cordiform to sub-triangular lip. *Epidendrum hernandoi* (Szlach. & Kolan) J.M.H.Shaw, only registered from the Cordillera Oriental of Colombia until now, has red-purple flowers with tepals and lip pubescent, the lip triangular-ovate with the apex acuminate.

Key to the species of the Takulumena group of *Epidendrum*

1. Sepals and petals with surface glabrous (sometimes only margins ciliate or rarely with a few short trichomes on the ventral surface) 2
2. Flowers red-purple 3
3. Sepals 4.0–5.5 × 1.8–3.0 mm; lip sub-cordiform with the margin ciliate ..... ***E. rhodovandoides***
3a. Sepals 8.5–10.7 × 4.0–5.3 mm; lip widely triangular, 6 × 9.5 mm; flowers with abaxial surface of sepals and petals green ..... ***E. edquenii***
2a. Flowers ochre-yellow, orange-brown, or salmon-pink 4
4. Petals strongly reflexed; margins of floral segments entire ..... ***E. vulcanitungurahuae***
4a. Petals spreading or slightly reflexed; margins of petals and/or lip ciliate or papillose 5
5. Lip with base deeply cordate, flowers yellow-brown with lips bright orange ..... ***E. floreziarum***
5a. Lip with base truncate or slightly cordate; flowers yellow to ochre, slightly tinged pink 6
6. Lateral sepals 9–10 mm long, lip widely triangular ..... ***E. kapuleri***
6a. Lateral sepals 12–16 mm long, lip ovate-cordiform, base slightly cordate 7
7. Lateral sepals and petals falcate, apex acuminate, margin of lip ciliate ..... ***E. sophronitoides***
7a. Lateral sepals and petals oblique, but not falcate, apex obtuse, margin of lip entire ..... ***E. uribeianum***

1a. Sepals and/or petals with ventral surface pubescent 8
8. Sepals glabrous, petals pubescent, lip proportionately wider than long ..... ***E. psilosepalum***
8a. Sepals and petals pubescent, lip proportionately longer than wide 9
9. Lip surface glabrous, only margin ciliate 10
10. Flowers salmon-pink, lip triangular-ovate in outline when spread, distinctly squeezed near the middle in natural position ..... ***E. kuelapense***
10a. Flowers purple-reddish, lip orbicular-cordiform ..... ***E. glabrilabium***
9a. Lip surface pubescent 11
11. Leaves up to 3 cm long, apex of tepals long acuminate ..... ***E. wieslawii***
11a. Leaves up to 9 cm long, apex of tepals acute or acuminate 12
12. Lip elliptic ..... ***E. dasyanthum***
12a. Lip ovate-cordiform 13
13. Leaves 9.0 × 0.7 cm, apical margin denticulate; sepals 9.5–10.5 mm long ..... ***E. boyacaense***
13a. Leaves 6.5 × 0.4 cm, apical margin entire; sepals 8.5 mm long ..... ***E. hernandoi***

List of the species belonging to the Takulumena group of *Epidendrum*

Epidendrum boyacaense (Szlach. & Kolan.) J.M.H.Shaw, Orchid Rev. Suppl., 124(1314): 36 (2016). (Fig. 2A). Basionym: *Takulumena boyacaensis* Szlach. & Kolan. Wulfenia 21: 68 (2014). Type. Colombia, Boyacá, Aquitania-Toquilla, Río Cusiana, páramo, en bosque primario entresacado, 2800 m, 8 March 1980, *H. Bernal M. & G. Chavarro 304*. (holotype: COL!).

Epidendrum dasyanthum Hágsater, Icon. Orchid. 11: t. 1116 (2008). *Takulumena vazquezii* Szlach., Mytnik, Romowicz & Marg. Orchidee (Hamburg) 57(3): 327. (2006), non *Epidendrum vazquezii* Hágsater & L.Sánchez (2006). Type. Ecuador, circum Lojam, in silva montana humile, epiphytus in ramis muscosis, November 2005, *D. Szlachetko et al. s.n.* (holotype: UGDA).

Epidendrum edquenii Hágsater, E.Santiago & J.P.Arista (see earlier). Type: PERU: Amazonas: Prov. Bongará, Distr. Yambrasbamba, a 20 m de la carretera a Perla del Imaza, en un lote de pasto de ganado (Santa Rosa), 2079 m, 15 August 2022, *J. P. Arista et al. 276.* (holotype: KUELAP!). (Fig. 1, 2B).

Epidendrum floreziarum Hágsater, E.Santiago & Reina-Rodr., Icon. Orchid. 19(2): t. 1953. (2022). Type: COLOMBIA: Nariño: Vereda Olaya, 5 km noroeste de Túquerres, 3178 m, 22 May 2022, *G. Reina-Rodríguez, M. Tobar F. & M. Flórez 3701.* (holotype: CUVC, flower in spirit!). (Fig. 2C).

Epidendrum glabrilabium (Szlach. & Kolan.) J.M.H.Shaw, Orchid Rev. Suppl., 124(1314): 36 (2016). Basionym: *Takulumena glabrilabia* Szlach. & Kolan., Wulfenia 21: 75 (2014). Type. Colombia, Cundinamarca, Chocontá. El Sisga, parte alta de La Represa, 2700–2900 m, 14 Jan. 1962, *H. García-Barriga 17385*. (holotype: COL!; isotypes: AMES! NY!).

Note: *Epidendrum glabrilabium* differs from *E. edquenii* in its purple flowers with clearly pubescent dorsal sepal and petals and orbicular-cordiform, apiculate lip with ciliate margins. The last feature, not indicated in the original description of *Takulumena glabrilabia* nor shown in the line drawing accompanying it (Szlachetko & Kolanowska 2014: Fig. 9), is nevertheless evident in the floral analysis made from, and attached to, the isotype at AMES (see https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.ames01985967?page=2). Whether the original collection may have included a mixture of more than one species or the differences between the protologue and the isotype at AMES derive from inaccuracies in the original illustration and description is beyond the focus of the present work. Still, caution is advised in comparing the species based solely on published drawings and descriptions.

Epidendrum hernandoi (Szlach. & Kolan.) J.M.H.Shaw Orchid Rev. Suppl., 124(1314): 36 (2016). Basionym: *Takulumena hernandoii* Szlach.

& Kolan. Type. Colombia, Cundinamarca, El Sisga, carretera a Chocontá. A 2 km al N del Puente, 2800 m, 12 Oct. 1972, *H. García-Barriga 20354* (holotype: COL!).

Epidendrum kapuleri (Szlach. & Kolan.) J.M.H.Shaw, Orchid Rev. Suppl., 124(1314): 36 (2016). (Fig. 2D). Basionym: *Takulumena kapuleri* Szlach. & Kolan., Wulfenia 21: 78 (2014). Type: Colombia, Cauca, To Paletará in direction of hacienda Valencia, August 1964, *A. Kapuler & V. Hascall 208* (holotype: COL!).

Epidendrum kuelapense (Szlach. & Mytnik) J.M.H.Shaw, Orchid Rev. Suppl., 122(1306): 38 (2014). (Fig. 2E). Basionym: *Takulumena kuelapense* Szlach. & Mytnik, Willdenowia 41(2): 296–297; fig. 1, (2011). Type: Peru, Prov. Amazonas, a few km from Kuelap castle; epiphyte in secondary high forest, alt. 3000 m, Aug. 2007, *D. L. Szlachetko et al. s.n.* (holotype: UGDA-DLSz, spirit).

Epidendrum psilosepalum Hágsater & E. Santiago, Icon. Orchid. 11: t. 1167 (2008). Type: Colombia: Cauca: Caldera China, Tierradentro, 2000 m, 27 Feb. 1883, *F. C. Lehmann 2721* (holotype: G!).

Epidendrum rhodovandoides Hágsater, Icon. Orchid. 11: t. 1172 (2008). Type: Colombia: Antioquia: 1 km antes del puerto del Boquerón del Cerro del Padre Amaya, 2380 m, 21 April 1983, *E. Hágsater, R. Escobar, C.A. & J. Luer, A. Pridgeon & M. Webb 7246* (holotype: AMO!). (Fig. 2E).

Epidendrum sophronitoides F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26(5): 464 (1899). (Fig. 2F). Basionym: *Takulumena sophronitoides* (F.Lehm. & Kraenzl.) Szlach., Orchidee (Hamburg) 57(3): 326 (2006). Colombia, Cauca, Forest above Inzá, 3000–3200 m, *F. C. Lehmann 6245*. (lectotype [designated by Hágsater & E.Santiago, 2008]: K! (mixed sheet); isolectotypes: K! (mounted singly) LE!).

Epidendrum uribeianum J.M.H.Shaw, Orchid Rev. Suppl., 124(1314): 36 (2016). (Fig. 2G). Replaced synonym: *Takulumena uribei* Szlach. & Kolan., Wulfenia 21: 73 (2014). Type: Colombia, Cauca, Bosque de la Ceja, entre Coconuco y Paletará, 3200 m, 25 august. 1961, *L. Uribe Uribe 3837* (holotype: COL!).

Epidendrum vulcanitungurahuae Hágsater & E.Santiago, ***nom. nov.*** (Fig. 2.H). Replaced synonym: *Epidendrum tungurahuae* (Szlach. & Mytnik) J.M.H.Shaw, Orchid Rev. Suppl., 122(1306): 38 (2014). Non *Epidendrum tunguraguae* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 87 (1921). Basionym: *Takulumena tungurahuae* Szlach. & Mytnik, Willdenowia 41(2): 297–298; figs. 3–4 (2011). Type: Ecuador, Prov. Tungurahua, Vulcan Tungurahua; secondary forest along creek, Aug. 2007, *Mendoza Cabrera s.n.* (holotype: UGDA-DLSz-spirit).

Epidendrum wieslawii (Szlach. & Mytnik) J.M.H.Shaw, Orchid Rev. Suppl., 122(1306): 39 (2014). Basionym: *Takulumena wieslawii* Szlach. & Mytnik, Willdenowia 41(2): 298, fig. 5 (2011). Type: Ecuador, Prov. Loja, bei San Lucas, Loja, 2700 m, 22 Aug. 1878, *Lehmann s.n.* (holotype: W!)

Conclusions. The variability in vegetative and floral traits within *Epidendrum* has caused difficulties in circumscribing the genus. Multiple attempts have been made to separate groups of *Epidendrum* species into distinct genera based on particular features. For the Takulumena group, the proposal to establish a separate genus *Takulumena*, was prompted by the prevalence of monopodial growth mode and the basal inflorescences among most species, even though these features are not exclusive to this group. Unfortunately, the descriptions of various species included in this group are vague and confusing, accompanied by floral sketches that do not show accurate diagnostic details of the surface of sepals, petals, and lip. The presence or lack of ornamentation in the floral segments is an essential feature for the recognition of the different species of the group. For the correct determination of the species of the Takulumena group, it is recommended to rehydrate flowers when studying herbarium material, especially when quality color photographs are unavailable. Additionally, it is important to be cautious when comparing the species based solely on published drawings and descriptions.

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