

ICONES STELIDARUM (ORCHIDACEAE) COLOMBIAE V¹

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Abstract. Thirty-five species of the genus *Stelis* Sw. (Orchidaceae) from Colombia that have not had a complete illustration published are presented in the fifth of a series. Three are described as new.

Keywords: Colombia, Orchidaceae, Pleurothallidinae, *Stelis*

Two hundred collections of *Stelis* Sw. made in Colombia have been illustrated as new species in the first four parts of this series. Approximately three percent have proved to be synonyms. In the fifth part, 35 species not previously published with a complete illustration are presented. Illustrations of 24 species had never been published. Three appeared in part III (Luer, 2017a): *Stelis attenuata* as *Stelis dynamica*, *Stelis dispar* as *Stelis dendrophila*, and *Stelis sesquipedalis* as *Stelis ephippium*. The remainder have not been published with a complete illustration. The beautiful drawings by Elmer Smith, which appeared in Garay (1980), consist of only two-dimensional sepals and petals.

Stelis alba Kunth, Nov. Gen. Sp. 1: 363, 1816. TYPE: COLOMBIA. Cauca: Popayán, between Almaguer, 1400 hex., A. Bonpland 2073 (Holotype: P; Isotype: P). Fig. 1.

Plant medium in size, epiphytic, densely caespitose; roots slender. Ramicauls erect, stout, 3–5.5 cm long, enclosed by a tubular sheath from below the middle and another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical, obtuse to rounded at the tip, 5–7 cm long including a petiole ca. 1 cm long, the blade thick, 1.8–2.2 cm wide in the dry state, abruptly narrowed below into the petiole. *Inflorescence* single; 12–20 cm tall, the raceme erect, strict, subcongested, distichous, many-flowered; floral bracts oblique, acute, 1.5–2 mm long; pedicels 2 mm long; ovary 1.5 mm long; the peduncle ca. 5 cm long, with a spathe 1–1.5 cm long, from a node at the apex of the ramicaul; *sepals* light yellow-green, expanded, minutely pubescent, ovate, obtuse, connate below the middle, 3-veined, the dorsal sepal 4 mm long, 3 mm wide, the lateral sepals, 3 mm long, 3 mm wide; *petals* green, transversely ovate, concave, the apex broadly rounded with a thickened margin, 1.25 mm long, 2 mm wide, 3-veined, with a transverse carina; *lip* green, ovoid, 1.3 mm long, 2 mm wide, 1 mm deep, concave below a central, elevated, shallowly divided bar, the apex thin, broadly obtuse to rounded, the lateral margins thin, rounded, the dorsum microscopically pubescent at the base, truncate, hinged to the base of the column; *column* clavate, ca. 1.8 mm wide, 1.5 mm long, the anther and the stigmatic lobes apical.

Etymology: From the Latin *albus*, “dull white,” referring to the flowers.

Additional collection: COLOMBIA. Valle del Cauca: Farallones de Cali, collected September 1976, collector unknown, flowered in cultivation at Colomborquídeas, 20 November 1981, C. Luer 6727 (SEL).

Vegetatively, *Stelis alba* is distinctive. The leaves are elliptical, broad and obtuse to rounded at the apex, and are exceeded by a single inflorescence of relatively large flowers. The sepals are pubescent, ovate and three-veined, and the petals are also three-veined. The lip is a variation of type A with a high, rounded bar that is shallowly cleft to form a gaping glenion.

Lindley mistakenly identified an Ecuadorian collection by Jameson as *Stelis alba* Kunth. This collection was illustrated by Smith and used by Garay (1980, plate 81). Apparently, the true *Stelis alba* has not been identified again, but a collection made in 1976, and cultivated at Colomborquídeas, answers the published photographs and descriptions.

The author explicitly excludes the synonymy cited by Duque (2008: 40).

Stelis angustifolia Kunth, Nov. Gen. Sp. 1: 162, 1816. TYPE: COLOMBIA. Cauca: Timbio, near Popayán, A. Humboldt & A. Bonpland s.n. (Holotype: P). Fig. 2–4.

Synonyms: *Stelis lanata* Lindl., Folia Orch. *Stelis* 13, No. 100. 1859. TYPE: ECUADOR. Pichincha: west slope of the Andes of Quito, W. Jameson s.n. (Holotype: K). Etymology: From the Latin *lanatus*, “wooly,” referring to the densely pubescent sepals.

Stelis physoglossa Luer & F. Werner, Monogr. Syst. Bot., Missouri Bot. Gard. 115: 174, 2009. TYPE: ECUADOR. Zamora-Chinchipec: Estación Científica San Francisco, 1750 m, 14 January 2004, F. Werner 767 (Holotype: MO).

Etymology: From the Greek, *physoglossa*, “a blown up tongue,” referring to the deeply concave lip.

Plant medium in size, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 2–5 cm long, enclosed by a close, tubular sheath from below the middle and another

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¹ Part I, II, and III, and IV of this series were published in Luer (2016a–b, 2017a–b, respectively).

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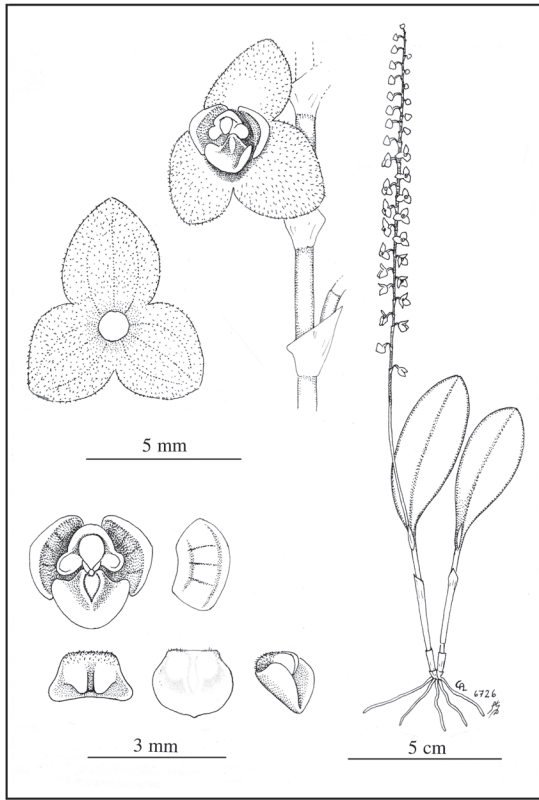


FIGURE 1. *Stelis alba* Kunth

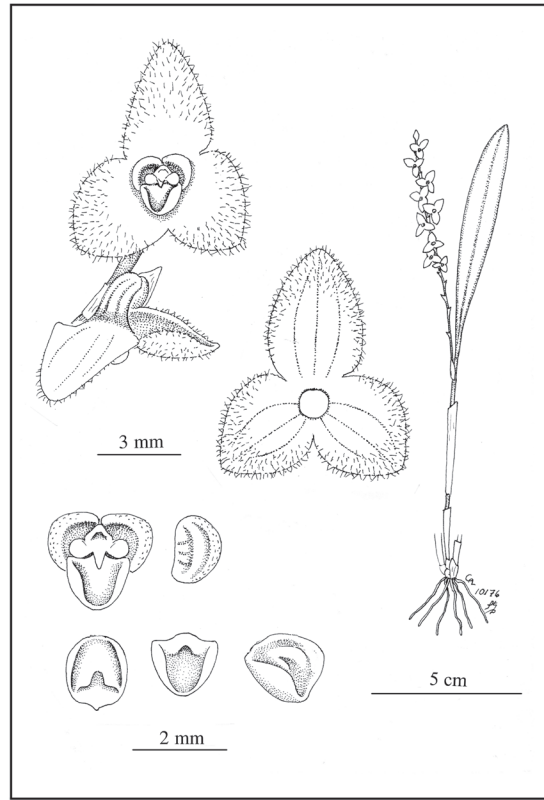


FIGURE 2. *Stelis angustifolia* Kunth

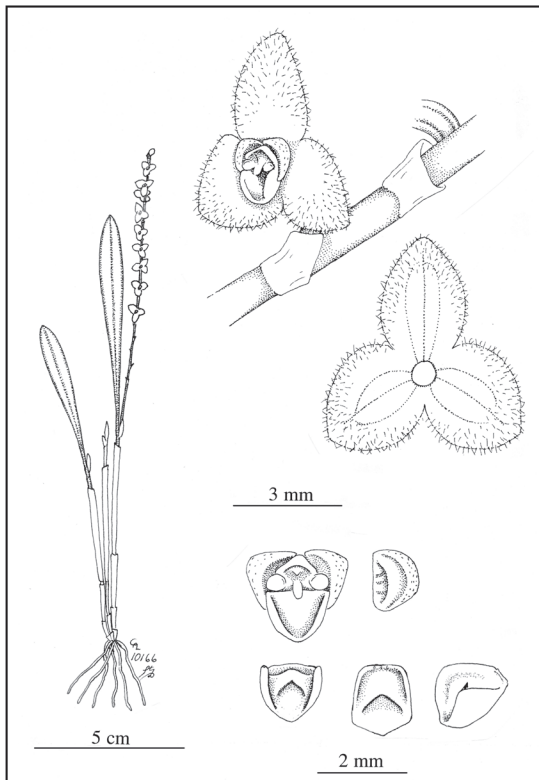


FIGURE 3. *Stelis angustifolia* Kunth

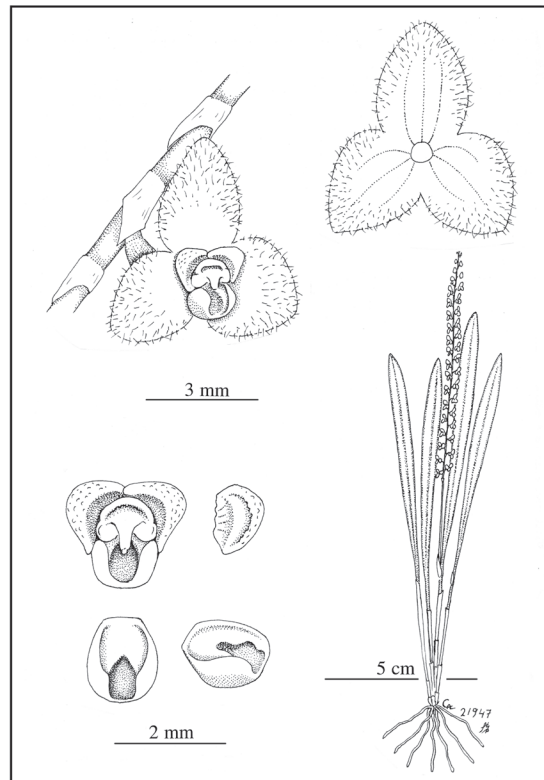


FIGURE 4. *Stelis angustifolia* Kunth

sheath at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 5–10 cm long, including a petiole 1–2 cm long, the blade thick, 0.6–1 cm wide in the dry state, narrowed below into the petiole. *Inflorescence* 1–3; 9–12 cm tall, the racemes erect, strict, congested, distichous, many-flowered, with most flowers open simultaneously; floral bracts oblique, acute, 2–3 mm long; pedicels 2 mm long; ovary 1.5–2 mm long; the peduncle 2–4 cm long, with a spathe less than 1 cm long, from a node at the apex of the ramicaul; flowers purple or yellow; *sepals* expanded, pubescent, ovate, subacute, connate above the base, 3-veined, the dorsal sepal 3–4 mm long, 2.5–3 mm wide, the lateral sepals oblique, 3 mm long, 3 mm wide; *petals* transversely ovate, concave, the apex broadly rounded with a thickened, subverrucose margin, 1 mm long, 1.3 mm wide, 3-veined, with a transverse carina; *lip* ovoid, 1.5 mm long, 1.2 mm wide, 1 mm deep, concave below a widely bifid bar, the apex and lateral margins thin, obtuse, the dorsum smooth, truncate, hinged to the base of the column; *column* clavate, ca. 1 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *angustifolius*, “narrow-leaved,” referring to the foliage.

Additional collections: COLOMBIA. Antioquia: Medellín, Altos de Barbacoa W of Velez, 3150 m, 15 September 1984, *C. Dodson & R. Escobar 15299* (SEL), *C. Luer* illustr. 21947. Boyacá: between Arcabuco and Moniquirá, 2500 m, 25 April 1982, *C. Luer, J. Luer & R. Escobar 7551, 7555* (SEL). Santander: Bucaramanga, between Bucaramanga and Berlin, 3200 m, 27 April 1982, *C. Luer, J. Luer, R. Escobar 7602* (SEL); E of Bucaramanga toward Berlin, 2950 m, 7 May 1984, *C. Luer, J. Luer & R. Escobar 10166, 10176, 10199* (MO). Norte de Santander, Páramo de Jurisdicciones, 2800 m, 30 April 1982, *C. Luer, J. Luer & R. Escobar 7629* (SEL).

Although *Stelis angustifolia* has been previously illustrated as the synonym *Stelis lanata* Lindl., the closed flower is inadequate for identification.

Stelis angustifolia is characterized by one to three densely many-flowered racemes that are about as long as, or shortly longer than narrow, elliptical leaves; variously pubescent, three-veined sepals; and three-veined petals. Most distinctive is the lip with a deeply hollowed out cavity beneath a widely cleft bar.

Stelis colombiana Ames from the southern part of the Western Cordillera, is similar to *Stelis angustifolia*. With similar, pubescent, three-veined sepals it is distinguished from the later by broader leaves up to two centimeters wide, slightly smaller flowers, and a lip with a simple, cleft bar and cavity.

Stelis antioquiënsis Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 83, 1921. TYPE: COLOMBIA. Antioquia: above Aguada, 2300 m, 17 September 1883, *F. C. Lehmann 3175* (Holotype: K; Isotypes: AMES, BM, BR, US), Fig. 5.

Usage synonym: *Stelis campanulifera* Kraenzl., Bot. Jahrb. Syst. 26: 449, 1899, *non auct.* 1858.

Etymology: From the Latin for “bell-bearing,” without obvious reference.

Plant large, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 13–17 cm long, enclosed by a tubular sheath from below the middle and another 2–3 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical-ovate, slightly acuminate, acute, the blade 8–11 cm long, the petiole 2.5–3 cm long, the blade 1.7–2 cm wide, narrowed below into the petiole. *Inflorescence* 2–4; 15–20 cm tall, the racemes erect, strict, distichous, loosely many-flowered; floral bracts oblique, acute, 2 mm long; pedicels 2 mm long; ovary 1.5 mm long; the peduncle 2–4 cm long, with a spathe at least 1 cm long, from a node at the apex of the ramicaul; *sepals* expanded, apparently pubescent, ovate, connate below the middle, the dorsal sepal acute, 3.5–4 mm long, 2.75 mm wide, 5- or 7-veined, the lateral sepals oblique, obtuse, 3 mm long, 2.75 mm wide, 4-veined; *petals* transversely semicircular, 1 mm long, 1.3 mm wide, 3-veined, concave below the broadly rounded apex, with a broad, thick margin with multiple, microscopic crystals and a transverse carina, *lip* ovoid, 0.75 mm long, 1 mm wide, 0.75 mm deep, narrowly concave below an intact bar, the apex broadly rounded with a broad, thick margin with multiple, microscopic crystals, the dorsum featureless, the base truncate, hinged to the base of the column; *column* clavate, ca. 1.8 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: Named for Antioquia, the department in which the collection was made.

This species was apparently abundant locally where collected, no subsequent collection is known. The description of the plant offered herein was made from Schlechter’s description and photos of the type. The flower was drawn from two pickled flowers from the type at K.

Stelis antioquiënsis is large and slender with acute, slightly acuminate, narrow, petiolate leaves surpassed by two to four loose, racemes of relatively large flowers with microscopically pubescent sepals. The dorsal sepal has five veins with an occasional additional, incomplete pair. The rounded, apical margin of both the three-veined petals and the type A lip is broad and thick with scattered, microscopic particles.

Stelis asseris O.Duque, Orquideología 20(3): 329, 1997. TYPE: COLOMBIA. Antioquia: Sonsón, near Sonsón, 2300 m, coll. by Nicolas Peláez, fl. in cult. 27 December 1991, *O. Duque 1400* (Holotype: JAUM). Fig. 6–7.

Synonym: *Stelis patella* O.Duque, Orquideología 27(3): 134, 2011. TYPE: COLOMBIA. Antioquia: between Santuario and Corconó, 1900–2200 m, 3 December 1991, *O. Duque 196* (Holotype: JAUM).

Etymology: From the Latin *patella*, “a small pan,” referring to the shallow synsepal.

Plant small to medium, epiphytic, caespitose; roots slender. Ramicauls erect, 2.5–7 cm long, enclosed by a tubular sheath from below the middle, and another 2 sheaths below the middle and at the base. *Leaf* erect, coriaceous, elliptical, acute to subacute, 5–10 cm long including a petiole 1–2.5 long, the blade 0.7–1.3 cm wide, cuneate

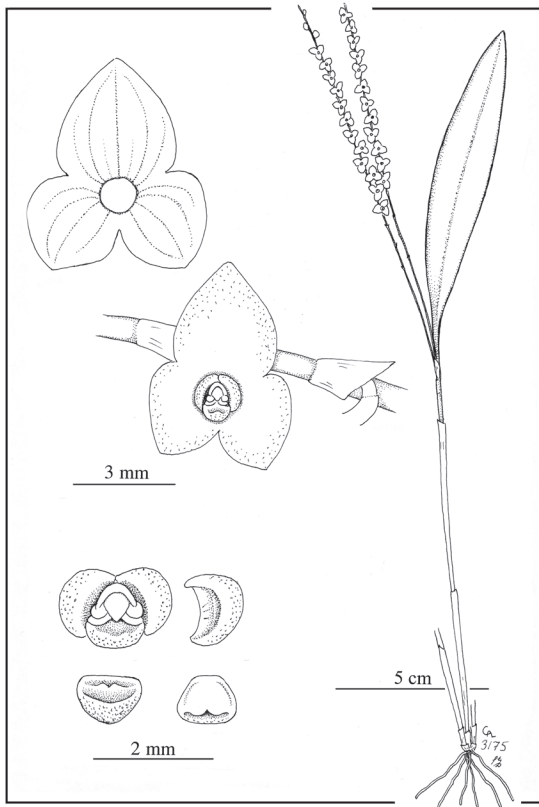


FIGURE 5. *Stelis antioquiensis* Schltr.

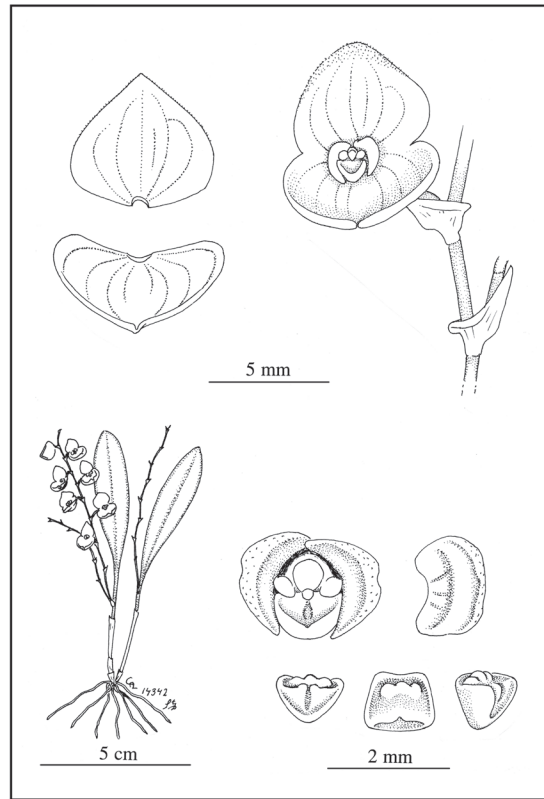


FIGURE 6. *Stelis asseris* O.Duque

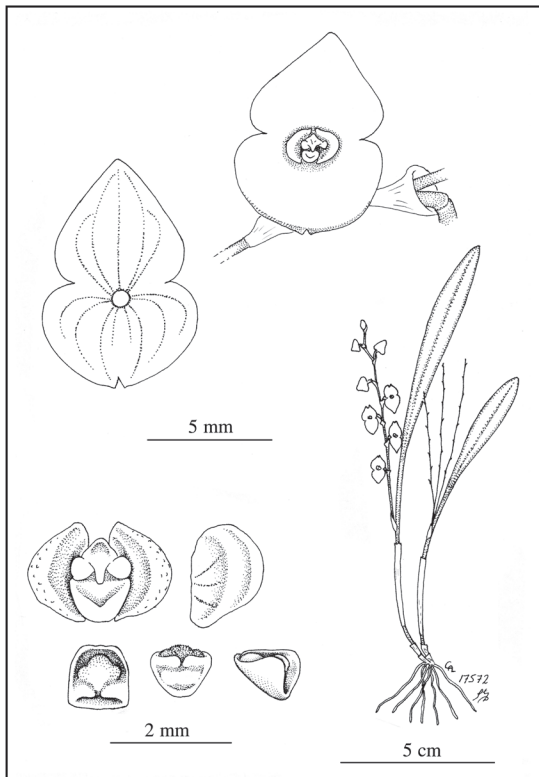


FIGURE 7. *Stelis asseris* O.Duque

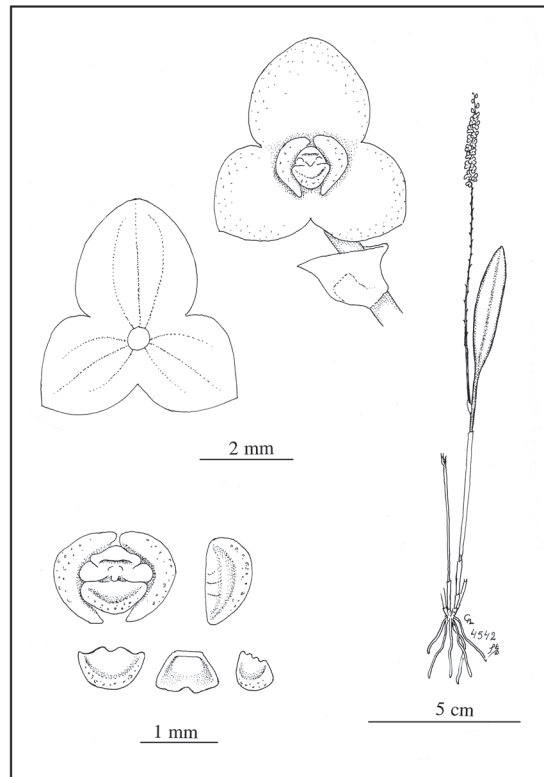


FIGURE 8. *Stelis bigibba* Schltr.

below into the petiole. *Inflorescence* 1–3; 5–10 cm tall, the raceme erect, loosely 8- to 10-flowered, floral bracts oblique, acute, 3 mm long; pedicels 2 mm long; ovary 2 mm long; the peduncle ca. 2 cm long, subtended by a spathe 0.7–1 cm long, from a node near the tip of the ramicaul; flowers purple; *sepals* glabrous, but sometimes minutely ciliate, the dorsal sepal erect, transversely ovate, subacute, 5–6 mm long, 6–6.5 mm wide, 5-veined, connate ca. 2 mm, the lateral sepals connate into a transversely cordate, shallowly concave synsepal, 3.5–4 mm long, 6–7.5 mm wide, 8-veined; *petals* transversely oblong, concave, 0.8–1 mm long, 1.25–1.75 mm wide, 3-veined, the apex broadly rounded with an uneven, thickened margin, with a transverse callus; *lip* subquadrate, 0.5–0.75 mm long, 0.8–1 mm wide, 0.7–1 mm deep, shallowly concave below the bar with a narrow glenion, the apex obtuse, the dorsum with the three veins thickened and confluent into a rounded or transverse callus above the base, the base truncate, hinged to the base of the column; *column* semiterete, 0.8–1 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Latin *asser*, “a stake, a pole,” apparently referring to the bar of the lip.

Additional collections: COLOMBIA. Antioquia: Sonsón, Altos de Buenos Aires, 2400 m, coll. by E. Valencia, fl. in cult. at Colomborquídeas, 12 December 1992, *R. Escobar 5021* (MO), *C. Luer* illustr. 17572; near Río Piedras, coll. by Eric Hagsater et al., 2500 m, 23 April 1983, *C. Luer 8776* (SEL); El Retiro, above Colomborquídeas, 2400 m, coll. by Walter Teague, 17 April 1988, *C. Luer 13222* (MO); Medellín, between San Pedro and Don Matius, 2200–2700 m, 15 September 1984, *C. Dodson & R. Escobar 15301* (MO); Altos de Fitzebad, coll. by Pacho López, fl. in cult. at Colomborquídeas, 23 May 1995, *C. Luer 17582* (MO); El Camnen, San Lorenzo, 2500 m, 21 March 1989, *C. Luer, J. Luer & W. Teague 14342* (MO); east of Santo Domingo, toward the TV antenna, 2170 m, 12 May 1985, *C. Luer 11351* (MO); near Guarne, fl. in cult. at Colomborquídeas, 23 May 1995, *C. Luer 17586*; between Concordia and Betulia, 2100 m, 29 May 1995, *C. Luer, J. Luer & R. Escobar 17629* (MO). Cauca: Valle de Popayán, 1750 m, fl. in cult. by Amalia Lehmann de Sarria in Popayán, 16 Nov. 1982, *C. Luer 8446* (SEL).

This small to medium-sized, caespitose species with narrow leaves bears relatively large, purple, widely expanded flowers in a loose raceme that equals or barely surpasses the leaf. The sepals are broad and multiveined, with the synsepal transverse and shallowly concave; the petals are three-veined. The lip is type A with an obtuse apex, a narrow glenion, and a transverse confluence above the base of the calli of the three veins.

Stelis bigibba Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 84, 1928. TYPE: COLOMBIA. Cauca: Andes west of Cali, 1600–2000 m, October, *F. C. Lehmann 6834* (Holotype destroyed at B); Lectotype, here designated, fragment of *F. C. Lehmann 6834* (AMES). Fig. 8.

Plant small to medium in size, epiphytic, densely caespitose; roots slender. Ramicauls fascicled, erect,

slender, 2–6 cm long, enclosed by a close, tubular sheath from below the middle and another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 3–6 cm long including an ill-defined petiole ca. 1 cm long, 0.4–0.6 cm wide, narrowly cuneate below into the petiole. *Inflorescence* one or two, erect, 8–11 cm long, racemes congested, distichous, simultaneously many-flowered, the peduncle ca. 3 cm long, from a spathe 5–6 mm long at a node below the apex of the ramicaul; floral bracts oblique, acute, 1.5 mm long; pedicels 0.5–1 mm long; ovary 1 mm long; *sepals* expanded, yellow or green, glabrous, but cellular, broadly ovate, obtuse, connate basally, the dorsal sepal 1.5–2 mm long, 1.5–2 mm wide, 3-veined, the lateral sepals 1.5–2 mm long and wide, 3-veined; *petals* yellow, transversely semilunate, with the apex thickened and broadly rounded, with a transverse carina, 0.5 mm long, 1 mm wide, 3-veined; *lip* yellow, obliquely ovoid, 0.6 mm long, 0.75 mm wide, 0.4 mm deep, shallowly concave below a bigibbous bar, the apical margin thick and broadly rounded, the dorsum acutely deflexed, the base truncate, firmly attached to the base of the column; *column* stout, ca. 0.75 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Latin *bigibbus*, “with two humps,” referring to the margin of the bar of the lip.

Additional collections: COLOMBIA. Nariño: forest around La Planada above Ricaurte. 1950 m, 2 November 1979, *C. Luer, J. Luer & A. Hirtz 4541, 4543, 4554* (SEL).

Vegetatively, this small species resembles other species, such as *Stelis braccata* Rchb.f. & Warsz. From these it is easily distinguished by three-veined petals and the distinctive lip. The lip is triangular in lateral view, with a two-humped bar uppermost, the dorsum being acutely deflexed from the anterior surface.

Stelis chamaestelis (Rchb.f.) Garay & Dunst., Venez. Orch. Illustr. 4: 292, 1966. Basionym: *Pleurothallis chamaestelis* Rchb.f., Linnaea 22: 825, May 1860. TYPE: VENEZUELA: Mérida, 6,500 ft., September 1846, *L. J. Schlim 1195* (Holotype: G; Isotypes: LE. MPU, P). Fig. 9.

Synonyms: *Apatostelis chamaestelis* (Rchb.f.) Garay & Dunst., Bot. Mus. Leaf. 27: 189, 1979.

Stelis florea Lindl., Folia Orch. *Stelis* 5, No. 27. 1859, *nom. nov.* for *Pleurothallis chamaestelis* Rchb.f.

Etymology: A derivation (“floreus”) from the Latin *flora*, possibly referring to the numerous flowers.

Plant medium to large, epiphytic, ascending-caespitose, rhizome thick, 1–5 mm long between ramicauls; roots slender. Ramicauls erect, slender, 5–11 cm long, with a tubular sheath above the middle and another tubular sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute to subacute, 5–14 cm long including a petiole 1–2 cm long, the blade 0.8–1.5 cm wide in dry state, cuneate below into the petiole. *Inflorescence* 1–3 erect, congested, distichous, many-flowered racemes 10–20 cm long including the peduncle 2–3 cm long, with many flowers open simultaneously, with a spathe 6–12 cm long, from a node below the apex of the ramicaul; floral bracts

oblique, acute, 2 mm long; pedicels 1 mm long; ovary 1–1.5 mm long; flowers yellowish white to white; *sepals* glabrous, ovate, subacute, connate basally, 3-veined, the dorsal sepal 2 mm long, 1.2–1.5 mm wide, the lateral sepals oblique, more or less antrorse, 1.5–2 mm long, 1–1.25 mm wide; *petals* thin, subcircular, concave below the slightly thickened apex, 0.6 mm long, 0.6 mm wide, 1-veined; *lip* yellow, subquadrate-oblong, 0.6 mm long, 0.5 mm wide, 0.3 mm deep, narrowed and concave below the bar to the rounded tip with thickened margins, thick below the bar, microscopically pubescent above the base, the base truncate, hinged to the base of the column; *column* stout, 0.6 mm long and wide, with the anther and the bilobed stigma apical.

Etymology: From the Greek *chamae*-, “low, creeping,” and the genus *Stelis* Sw., referring to the repent habit.

Additional collections: COLOMBIA. Norte de Santander: Alto de Santa Inés, 2250 m, 13 May 1984, C. Luer, J. Luer & R. Escobar 10336 (MO). Santander: Bucaramanga, terrestrial on the road embankment E of Bucaramanga, 2400 m, 3 November 1981, C. Luer & R. Escobar 6555, 6556, 6561 (SEL); terrestrial on the road embankment between Bucaramanga and Berlin, 2800 m, 27 April 1982, C. Luer, J. Luer & R. Escobar 7594 (SEL); Bucaramanga, E of Bucaramanga toward Berlin, 2950 m, 7 May 1984, C. Luer, J. Luer & R. Escobar 10166, 10169 (MO).

Lindley transferred Reichenbach’s *Pleurothallis chamaestilis* to *Stelis* with another name (*floreana*), because he believed that the plant was “neither dwarf, nor a *Pleurothallis*.” Actually, *Pleurothallis* might have been inadvertently printed instead of *Stelis*. The habit is densely ascending or repent with caespitose components along a thick rhizome with erect, slender ramicauls with narrowly elliptical leaves that are far exceeded by two to eight erect, slender racemes of tiny flowers with three-veined sepals and single-veined petals. The minute lip is rounded and concave below a broad, thick bar.

The author explicitly excludes the synonymy proposed by Duque (2008: 84).

Stelis chocoënsis O. Duque, *Orquideología* 27(1): 16, 2010. TYPE; COLOMBIA. Chocó: San José del Palmar, 1300 m, collected by L. Serna, 1993, *O. Duque* 2192 (Holotype: JAUM). Fig. 10.

Plant medium in size, epiphytic, densely caespitose, roots slender. Ramicauls erect, slender, 8–13 cm long, with a close, tubular sheath near the middle and another below and at the base. *Leaf* erect, coriaceous, elliptical, subacute, 5–9 cm long including a petiole 1.5–2 cm long, the blade 1.4–2 cm wide in dry state, cuneate below into the petiole. *Inflorescence* 2–5 simultaneous; 5–7 cm long, the racemes erect, strict, congested, distichous, many-flowered with most flowers open simultaneously, floral bracts tubular, acute, 1.5–2 mm long; pedicels 1–1.5 mm long; ovary 1.5–2 mm long; the peduncle ca. 1 cm long, flowering from near the base with a spathe ca. 1 cm long, from a node below the apex of the ramicaul; flowers various shades of purple; *sepals* pubescent to glabrous, ovate, obtuse, the dorsal sepal 2–2.5 mm long, 2 mm wide, the lateral; sepals

1.75–2 mm long, 2 mm wide, 3-veined, the dorsal sepal rarely incompletely 5-veined, connate below the middle; *petals* yellow or purple, transversely obovate, concave, broadly rounded at the apex, with the margin thickened, a transverse carina not always obvious, 0.9 mm long, 1.2 mm wide, 3-veined; *lip* yellow or purple, subquadrate, 0.8–1 mm long, 0.8–1 mm wide, 0.5 mm deep, concave below a cleft bar, the apex obtuse with a small, indistinct apiculum, the dorsum slightly convex; the base truncate, hinged to the base of the column; *column* clavate, ca. 1 mm wide and long, anther and bilobed stigma apical.

Etymology: Named for Chocó, the Department where the species was collected.

Additional collections: COLOMBIA. Páramo de Guanacas, between Totoro and Inza, 2850 m. 15 November 1982, C. Luer & R. Escobar 8409 (SEL). Tolima: S slope of Mt. Tolima, 2930 m, C. Luer, J. Luer & R. Escobar 7509 (SEL).

This species is characterized by an obtuse, elliptical leaf about as long as the ramicaul, an inflorescence of several racemes about half as long as the leaf, and small, crowded, purple flowers. The sepals are glabrous to short-pubescent. The petals are three-veined and the lip is type A with a cleft bar, and the dorsum is without callus.

Stelis colombiana Ames, *Sched. Orchid.* 1: 4, 1922. COLOMBIA. Cauca: Headwaters of Río López, Río Palo basin, Tierra Adentro, 2500–300 m, January 1906, H. Pittier 1093 (Holotype: AMES). Fig. 11.

Synonym: *Stelis navicularis* Garay, *Canad. J. Bot.* 34: 353, 1956. COLOMBIA. Caldas: Cerro Churumbelo, 2835 m, 3 December 1944, H. St. John 20,875 (AMES, Isotype: US), C. Luer illustr. 21892.

Etymology: From the Latin *navicularis*, “like a boat,” referring to the concave lip.

Plant large, epiphytic, densely caespitose; roots slender. Ramicauls erect, stout, 8–12 cm long, with a tubular sheath from near the middle and 2 tubular sheaths below and at the base. *Leaf* erect, coriaceous, elliptical-ovate, acute to narrowly obtuse, 8–12 cm long including a petiole 1–1.5 cm long, the blade 2–2.5 cm wide, cuneate below into the petiole. *Inflorescence* 1–3 erect, subcongested, many-flowered racemes 12–15 cm long including the peduncle 1–4 cm long, with many flowers open simultaneously, with a spathe 1–1.5 cm long, from a node below the apex of the ramicaul; floral bracts oblique, acute, 2–3 mm long; pedicels 2 mm long; ovary 1.5 mm long; color of flowers unknown; *sepals* glabrous externally, densely pubescent within, broadly-ovate, obtuse, 3-veined, connate basally, the dorsal sepal 2.5–3 mm long, 2.3–2.5 mm wide, the lateral sepals 2.3–2.5 mm long and wide; *petals* transversely elliptical, concave, the apex broadly rounded, narrowly thickened, 1 mm long, 1.5 mm wide, 3-veined; *lip* obovoid, 1 mm long, 1 mm wide, 0.75 mm deep, concave below a thick, notched bar, the tip obtuse with the margin thin with a small apiculum, the dorsum densely cellular toward the base, the base truncate, firmly attached to an obsolescent column-foot; *column* stout, 1.5 mm long and wide, with the anther and the bilobed stigma apical.

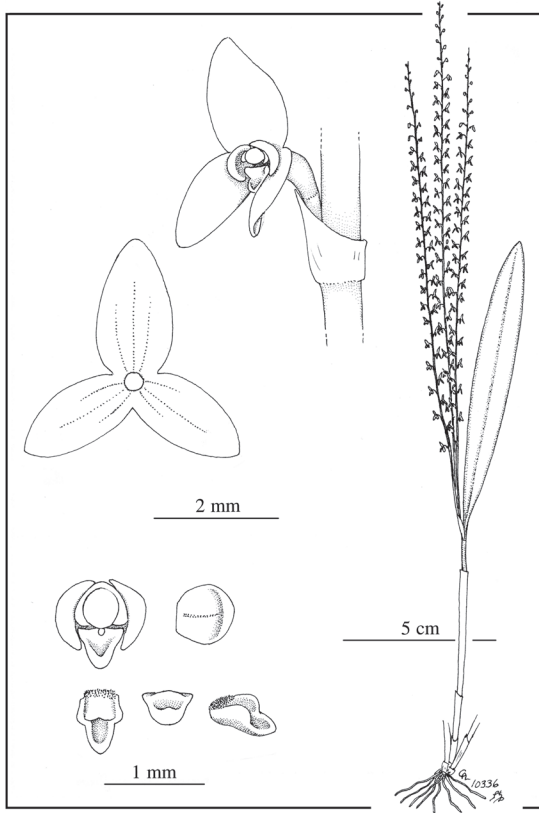


FIGURE 9. *Stelis chamaestelis* Dunst. & Garay

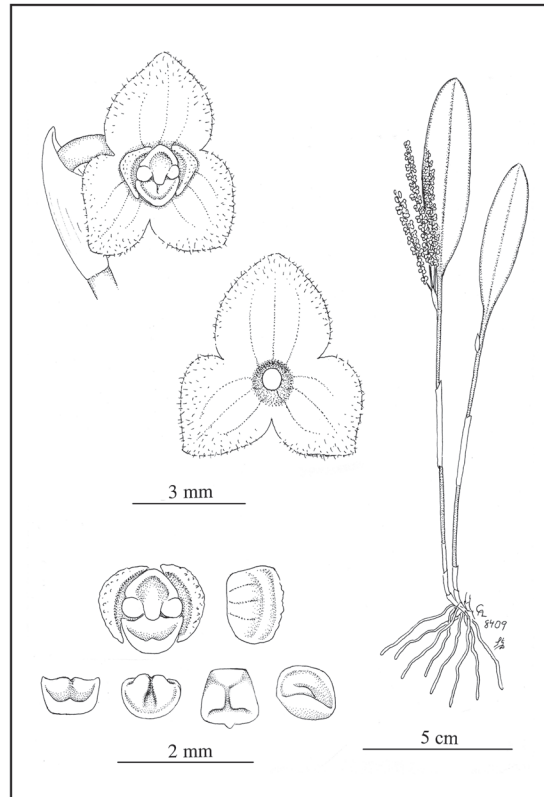


FIGURE 10. *Stelis chocoënsis* O.Duque

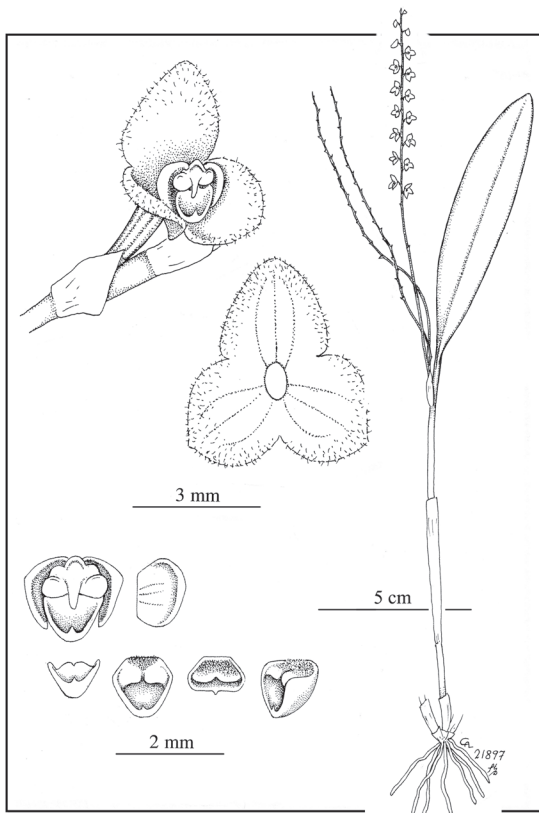


FIGURE 11. *Stelis colombiana* Ames

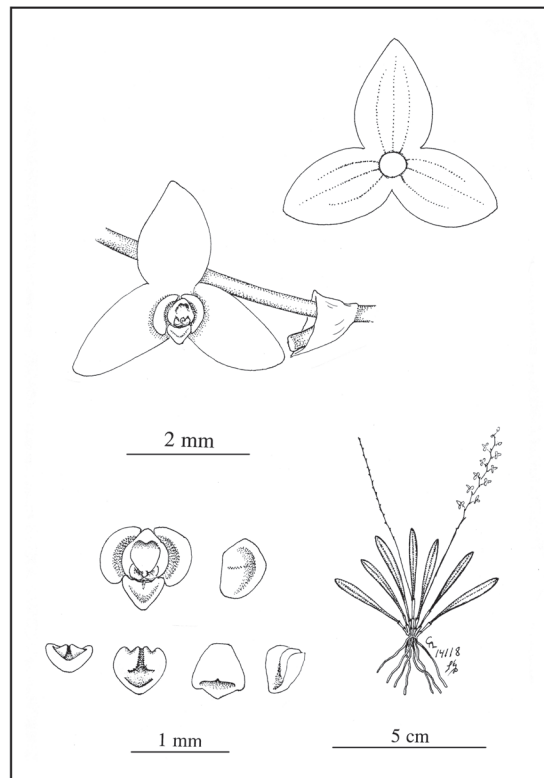


FIGURE 12. *Stelis comica* O.Duque

Etymology: Named for Colombia, the country of origin.

Additional collection: COLOMBIA. Risaralda: forest remnant near San Clemente, 2100 m, 20 April 1982, C. Luer, J. Luer & R. Escobar 7456 (SEL).

Vegetatively, this large species resembles many others with two or more racemes more or less equaling the leaf, but it is distinguished from them by small, obtuse, three-veined, pubescent sepals; thin, three-veined petals; and a lip concave below a thick, grooved bar, and a rounded, minutely apiculate apex.

The author explicitly excludes *Stelis corae* Foldats from the synonymy of *Stelis colombiana* (Duque, 2008: 265, albeit indirectly).

Stelis comica O.Duque, Orquideología 20(3): 338, 1997. TYPE: COLOMBIA. Antioquia: Sonsón, between Santuario and Cocorná, 2100 m, January 1990, O. Duque 1232 (Holotype: JAUM). Fig. 12.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 6–8 mm long, enclosed by a tubular sheath and another at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 2.5–3 cm long including an ill-defined petiole, 2–3 mm wide in dry state, gradually narrowed below to the base. *Inflorescence* single; 4–6 cm long, the raceme erect, subax, many-flowered, with several flowers open simultaneously; floral bracts oblique, acute, 1 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; the peduncle ca. 2 cm long, from a node below the apex of the ramicaul; flowers yellow; *sepals* expanded, similar, glabrous, ovate, acute to subacute, connate basally, 2 mm long, 1.3 mm wide, 3-veined; *petals* transversely ovate, 0.4 mm long, 0.6 mm wide, 1-veined, the apex rounded, thickened, without a transverse carina; *lip* obovoid, 0.5 mm long, 0.5 mm wide, 0.3 mm deep, concave below a cleft bar with a large glenion, the apex obtuse, not thickened, the dorsum slightly convex, the base truncate, hinged to the base of the column; *column* stout, 0.5 mm long and wide, the anther apical, the stigmatic lobes adjacent beneath the rostellum.

Etymology: From the Latin *comicus*, “comical,” Duque’s impression of a strange view of the flower.

Additional collection: COLOMBIA. Without collection data, purchased from an orchid vendor at the Medellín orchid show, 19 March 1989, C. A. Luer 14118 (MO).

This very small, densely caespitose species is distinguished by a laxly multiflowered raceme that surpasses a narrow leaf; ovate, widely spread, three-veined sepals; single-veined petals with thickened margin; and a type A lip with the apex obtuse, and a cleft bar with a glenion. The stigmatic lobes are within the clinandrium and are adjacent, perhaps even confluent, beneath the rostellum.

Duque found *Stelis comica* to be “common” in that part of the Central Cordillera, but it has not yet been identified elsewhere. His name *comica* refers to what he sees in a “buffoon-like appearance of the flower when seen from the side,” something I have not been able to visualize.

Stelis dressleri Luer, Phytologia 49(3): 227, 1981. TYPE: PANAMA. Veraguas: above Santa Fe, ca. 700 m, 5 September 1976, C. Luer & R. Dressler 1146 (Holotype: SEL). Fig. 13.

Synonym: *Stelis gustavii* O.Duque, Orquideología 20(3): 348, 1997. TYPE: COLOMBIA. Antioquia: Paraje Musinga, ca. 2500 m, collected by Aguirre, 8 June 1995, O. Duque 1835 (Holotype: JAUM).

Etymology: Named for Gustavo Aguirre, collector of this species.

Plant small to medium in size, epiphytic, ascending, the rhizome erect, 0.5–2 cm long between ramicauls, concealed by loose sheaths and parallel ramicauls; roots slender. Ramicauls erect, densely fasciculate, relatively stout, 2–2.5 cm long, enclosed by 1–2 loose, tubular sheaths. *Leaf* erect, coriaceous, elliptical, subacute, 2–4 cm long including the petiole 5–7 mm long, the blade 1–2 cm wide, cuneate below into the petiole. *Inflorescence* 1–3; 25–37 mm long, erect, congested, distichous, many-flowered raceme, successively flowered, with a few flowers open simultaneously, flowering from near the base, borne behind the leaf, from a node below the apex of the ramicaul; floral bracts oblique, acute, 1–1.5 mm long; pedicels 0.75 mm long; ovary 0.75 mm long; *sepals* light yellow, glabrous, connate below the middle, transversely ovate, obtuse, 1 mm long, 1.5 mm wide, 3-veined; *petals* purple, transversely ovate, minutely pubescent, shallowly concave, 0.4 mm long, 0.8 mm wide, 3-veined, the apex broadly obtuse, the margin slightly thickened; *lip* purple, subtriangular, 0.4 mm long, 0.5 mm wide, 0.3 mm deep, concave within the obtuse apex with a minute, obtuse apiculum, the bar thick, convex, shallowly channeled centrally, the dorsum with a low, rounded callus, the base truncate, hinged to the base of the column; *column* stout, 0.5 mm long and wide, the anther and the bilobed stigma apical.

Etymology: Named for Dr. Robert L. Dressler, collector of this species.

Additional collection: COLOMBIA. Valle del Cauca: old road between Cali and Buenaventura, 200 m, Nov. 1981, collected by Janet Kuhn, fl. in cult. 23 November 1981, C. Luer 6760 (MO).

This species is an uncommon, low-land species known from Central America and low-land, western Colombia. The collection described as *Stelis gustavii* O.Duque was obtained from a local orchid enthusiast, and I have no doubt that the locality at 2500 meters altitude is erroneous.

The habit of this species is distinctive and very similar to that of the larger *Stelis morgani* Dodson & Garay, which is relatively frequent in Ecuador. The densely fasciculate, erect ramicauls bear overlapping, elliptical leaves, behind which a few, simultaneous racemes are borne. The sepals are glabrous, while those of *S. morgani* are long-pubescent.

Stelis ecmeles Luer, *sp. nov.* TYPE: COLOMBIA. Chocó: San José del Palmar, Cerro Torrá, above heliport, 1920–1950 m, 11 August 1988, P.A. Silverstone-Sopkin 4310 (Holotype: MO; Isotype: CUVC), C. Luer illustr. 21994. Fig. 14.

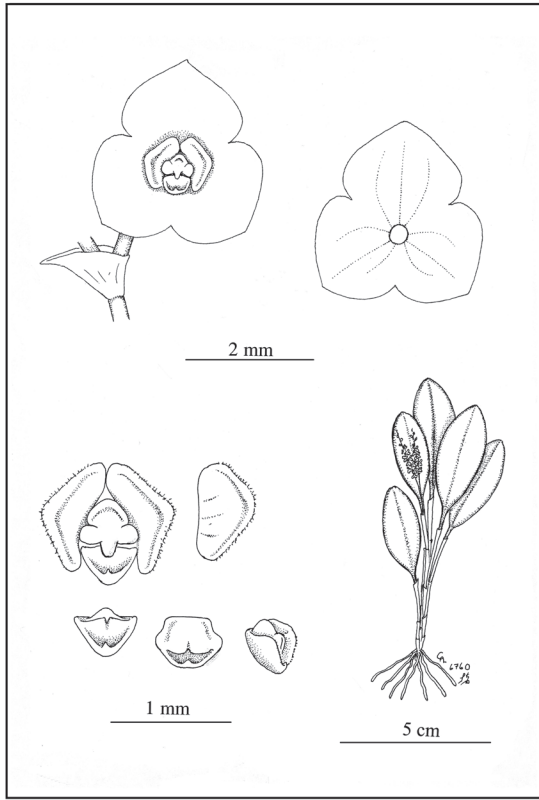


FIGURE 13. *Stelis dressleri* Luer

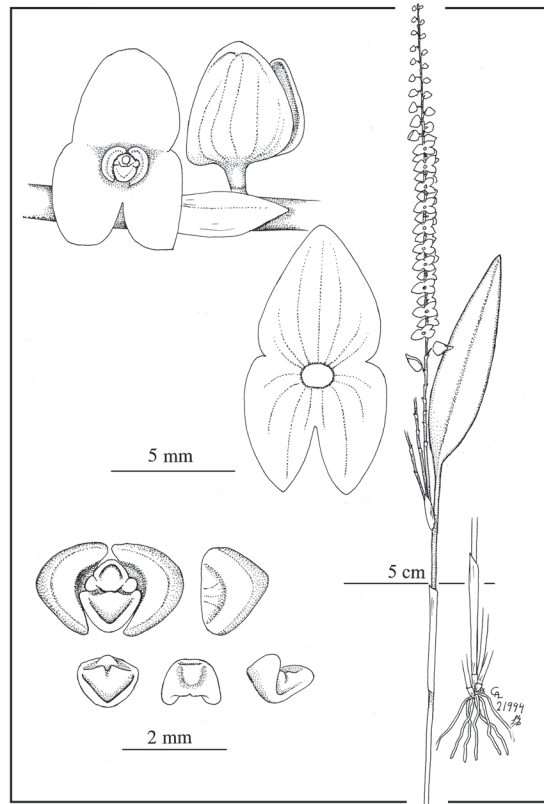


FIGURE 14. *Stelis ecomeles* Luer, *sp. nov.*

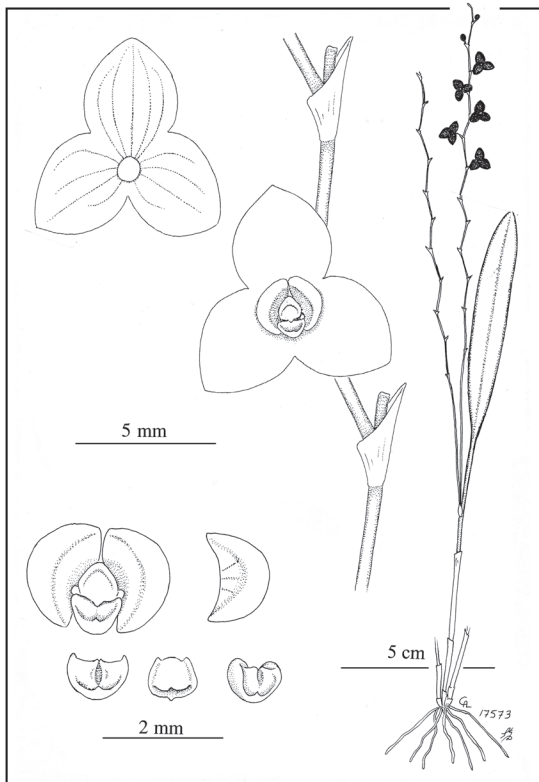


FIGURE 15. *Stelis felix* Luer & R. Escobar

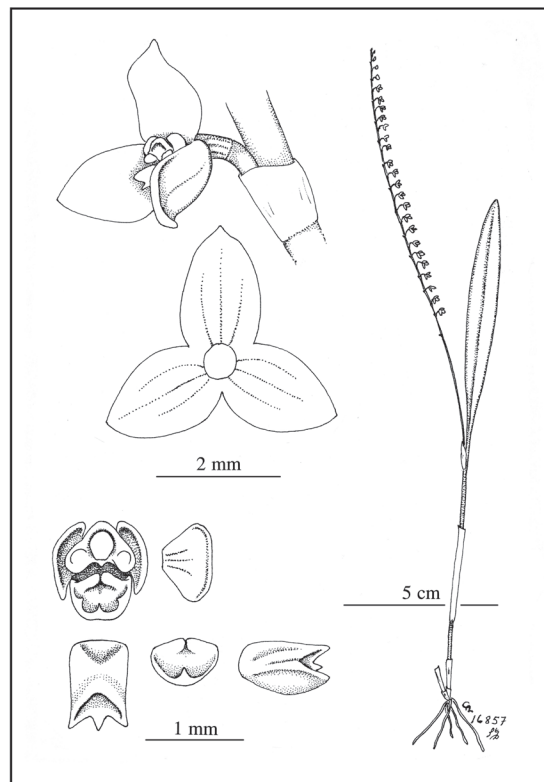


FIGURE 16. *Stelis foetida* O. Duque

This large, caespitose species is characterized by acute, ovate leaves exceeded by congested racemes; an ovate dorsal sepal that is either five- or seven-veined in the same raceme, and lateral sepals connate below the middle, to the tips into a shallowly concave synsepal; thick, three-veined petals; and a subquadrate lip.

Plant large, epiphytic, densely caespitose; roots slender. Ramicauls slender, 4–16 cm long, enclosed by a tubular sheath from near the middle and another sheath below and at the base. *Leaf* erect, coriaceous, ovate, acute, petiolate, 4–10 cm long, 2–2.3 cm wide in dry state, contracted below into a slender petiole 2–2.5 cm long. *Inflorescence* 1–6, 8–18 cm long, the raceme erect, congested, strict, distichous; floral bracts erect against the rachis, acute, 3–6 mm long; pedicels 2–5 mm long; ovary 1.5 mm long; peduncle 2–4 cm long, subtended by a spathe 1–1.5 cm long, from a node below the apex of the ramicaul; flowers dark red-violet; *sepals* glabrous, dorsal sepal ovate, acute, 5.25 mm long, 5 mm wide, 5- to 7-veined, connate in lower quarter, lateral sepals connate from near the apex to below the middle, 5 mm long, each 3 mm wide to 5–6 mm wide together; *petals* semilunate, thick, 1 mm long, 1.2 mm wide, 3-veined below a transverse carina, the apex broadly truncate with a thickened margin, shallowly concave; *lip* subquadrate, 0.5 mm long, 0.75 mm wide, 0.5 mm deep, concave below a shallowly retuse bar, the apex obtuse without thickened margins, the base convex, truncate, hinged to the base of the column; *column* clavate, ca. 1 mm wide and long, the anther and bilobed stigma apical.

Etymology: From the Greek *ekmeles*, “dissonant,” referring to differences in the sepals among two collections.

Additional collections: COLOMBIA. Chocó: San José del Palmar, Cerro Torrá, below the summit, 1940–2450 m, 30 August 1988, *P.A. Silverstone-Sopkin 4922* (MO, CUVC), C. Luer illustr. 21992.

This large, caespitose species is characterized by acute, ovate leaves exceeded by congested racemes with rather large flowers. The dorsal sepal is ovate, subacute and usually five-veined, but some dorsal sepals in the same raceme are also seven-veined. The lateral sepals are variously connate below the middle, or connate to the tips into a shallowly concave synsepal. The petals are thick and three-veined, and the lip is type A with a smooth, rounded callus on the dorsum.

Stelis felix Luer & R. Escobar, *sp. nov.* TYPE: COLOMBIA. without collection data, fl. in cult. by Colomborquídeas, 23 May 1995, *R. Escobar 5014* (Holotype: MO), C. Luer illustr. 17573. Fig. 15.

This large, caespitose species is characterized by two or three loose, subflexuous racemes of dark purple, glabrous flowers that exceed elliptical leaves; five-veined, obtuse sepals; thick, three-veined petals; and a minutely apiculate lip.

Plant large, epiphytic, densely caespitose; roots slender. Ramicauls slender, 5–7 cm long, enclosed by a tubular sheath from below the middle and another sheath below and at the base. *Leaf* erect, coriaceous, elliptical, acute, petiolate,

8–10 cm long, 1–1.3 cm wide in dry state, contracted below into a slender petiole 2 cm long. *Inflorescence* 2–3, 15–20 cm long, the racemes erect, lax, subflexuous; floral bracts oblique, acute, 5–6 mm long; pedicels 4–5 mm long; ovary 5 mm long; peduncle 4–5 cm long, subtended by a spathe 5 mm long, from a node below the apex of the ramicaul; *sepals* dark purple with narrow, white margins, glabrous, ovate, obtuse, connate below the middle, five-veined, dorsal sepal 4 mm long, 4 mm wide, lateral sepals 4 mm long, 3.5 mm wide; *petals* purple, semilunate, thick, 1 mm long, 1.5 mm wide, 3-veined, concave below a transverse carina, the apex broadly rounded with a thickened margin; *lip* purple, subquadrate, 0.75 mm long, 1 mm wide, 0.75 mm deep, shallowly concave below a curved bar with a glenion, the apex broadly rounded with a minute apiculum, the dorsum convex, the base truncate, hinged to the base of the column; *column* clavate, ca. 1 mm wide and long, the anther and bilobed stigma apical.

Etymology: From the Latin *felix*, “happy.” If this species was capable of emotions, it would be happy to have been found.

This handsome species, unfortunately without collection data, is distinguished by two or three tall, loosely flowered, subflexuous racemes of rather large, widely expanded, glabrous, dark purple flowers. The petals are proportionately large, thick and three-veined. The lip is type C, as in *Stelis argentata* Lindl., with a similar, minute apiculum.

Stelis foetida O. Duque, *Orquideología* 20(3): 342, 1997. TYPE: COLOMBIA. Antioquia: Alto de Minas, between Medellín and Santa Bárbara, 2300 m, collected by E Acevedo, fl. in cult. 14 March 1993, *O. Duque 1760* (Holotype: JAUM). Fig. 16.

Synonym: *Stelis juncea* Luer & Hirtz, *Monogr. Syst. Bot. Missouri Bot. Gard.* 88: 81, 2002. TYPE: ECUADOR: Carchi: terrestrial on the road embankment west of pass between Tulcán and Maldonado, 2400 m, 16 March 1991, *C. Luer, J. Luer, J. del Hierro, A. & X. Hirtz 15086* (Holotype: MO).

Etymology: From the Latin *junceus*, “slender like bulrushes,” referring to the long, slender habit.

Plant medium in size, epiphytic, densely ascending-caespitose; roots slender. Ramicauls erect, slender, 5–12 cm long, enclosed by a tubular sheath from below the middle and 2–3 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 6–13 cm long including an indistinct petiole 1–2 cm long, the blade 1–1.5 cm wide, narrowed below into the indistinctly petiolate base. *Inflorescence* single, rarely 2; 7–18 cm tall, the raceme erect, congested, many-flowered, secund with most flowers open simultaneously, the peduncle 1–4 cm long, subtended by a slender spathe 1–1.5 cm long, from a node below the apex of the ramicaul; floral bracts oblique, acute, 1.5 mm long; pedicels 1–1.5 mm long; ovary 1 mm long; flowers yellow, *sepals* similar, glabrous to sparsely pubescent, connate basally, elliptical-ovate, subacute, 2 mm long, 2.2–2.5 mm wide, 3-veined, the lateral sepals more or less antrorse; *petals* transversely obovate, shallowly concave,

without a transverse callus, 0.5 mm long, 0.75 mm wide, 3-veined, the apex broadly rounded to truncate with the margin thickened; *lip* thick, oblong, 0.9–1.2 mm long, 0.6–0.7 mm wide, 0.5 mm deep, concave below an obtusely cleft bar, the apex subtruncate, with an acute apiculus between acute, marginal angles, the dorsum slightly convex, more or less densely short-pubescent at the base, the base broadly truncate, hinged to the base of the column; *column* stout, ca. 1 mm long, 0.8 mm wide, the anther and the stigma apical, the stigmatic lobes more or less elongated and antrorse.

Etymology: From the Latin *foetidus*, “foul-smelling,” referring to scent of the flowers.

Additional collections: COLOMBIA. Antioquia: Mesopotamia, 2300 m, collected by D. Orbelaez et al., fl. in cult. at Colomborquídeas, 3 January 1992, *R. Escobar 5198* (MO), C. Luer illustr. 21910. Risaralda: Pueblo Rico, fl. in cult. by S. Tsubota, *O. Duque 1136* (JAUM); above Thermals, 2400 m, fl. in cult. 15 May 1993, *A. de Wilde s.n.* (MO), C. Luer illustr. 16857.

Stelis foetida is widely distributed in Colombia and Ecuador. It is characterized by acute, narrowly elliptical leaves surpassed by a slender, secund raceme of small flowers. The sepals are ovate and three-veined, with the laterals more or less antrorse. The petals are thin and three-veined. The lip is subquadrate, longer than wide with a deep obtusely cleft bar, and the apex is triapiculate, being acutely apiculate between acute, marginal angles.

Stelis furfuracea F. Lehm. & Kraenzl., Bot. Jahrb. Syst. 26(3–4): 447, 1898. TYPE: COLOMBIA. Cauca: western slope of volcano Sotará, 2800–3000 m, *F. C. Lehmann 6253* (Holotype destroyed at B); Lectotype, here designated, *F. C. Lehmann 6253* (K); isoelectotype (LE). Fig. 17.

Synonym: *Stelis pleurothalloides* Ames, Orchidaceae 7: 132, 1922. TYPE: COLOMBIA. Cauca: Páramo de Buena Vista, 3000–3600 m, January 1906, *H. Pittier 1156* (Holotype: US; Isotype: AMES).

Etymology: From the Greek *pleurothallidoides*, “recalls some species of *Pleurothallis*,” to quote Ames.

Plant medium in size, epiphytic, caespitose-ascending, roots slender. Ramicauls erect, slender, 4–7 cm long, with a tubular sheath from near the middle and 2 tubular sheaths below and at the base. *Leaf* erect, coriaceous, elliptical, subacute, 6–9 cm long including a petiole ca. 1 cm long, the blade 0.2–1.5 cm wide in dry state, cuneate below into the petiole. *Inflorescence* an erect, congested, distichous, many-flowered raceme 10–15 cm long including the peduncle 2–4 cm long, with many flowers open simultaneously, with a slender spathe 2 cm long, from a node below the apex of the ramicaul; floral bracts oblique, acute, 2–3 mm long; pedicels 1 mm long; ovary 1 mm long; flowers yellowish white; *sepals* glabrous, with numerous, minute, irregular crystals, narrowly ovate, acute, connate basally, 4.5–6 mm long, 2–3 mm wide, 3-veined, the lateral sepals oblique, more or less antrorse; *petals* ovoid, concave below a thickened margin with the tip subacute, thicker, 0.9 mm long, 1 mm wide, 3-veined; *lip* subquadrate-oblong, 1.25 mm long,

0.9 mm wide, 0.75 mm deep, concave below a broadly forked bar, the apex broadly acuminate, acute, without thickened margins, the dorsum thickened centrally, the base truncate, hinged to the base of the column; *column* stout, 0.75 mm long and wide, with the anther and the bilobed stigma apical.

Etymology: From the Latin *furfuraceus*, “covered with thin flaky particles,” a misnomer referring to the sepals.

Additional collections: COLOMBIA. Cauca: Popayán, Páramo de Barbillas, 3070 m, *C. Luer, J. Luer & R. Escobar 3038* (SEL); collected near Pasto, collector unknown, fl. in cult. at Colomborquídeas, 16 May 1993, *C. Luer 16863* (SEL).

This high-altitude species is seldomly collected. From a thick, ascending rhizome, ramicauls produce a congested, distichous raceme that surpasses an elliptical leaf. The sepals are narrowly ovate with a smooth, non-scurfy surface. Throughout the substance of all three sepals, a multitude of minute, irregular particles are visible. Without good magnification, the surface appears scurfy, or furfuraceous. The distinctive petals are concave below a thickened, subacute apex: In the description, it was called “semirhombic.” The lip is concave below a broadly forked bar with the dorsum thickened centrally, and the broad apex is slightly acuminate to the acute tip.

Stelis vicaria Luer & R. Escobar with similar, narrowly ovate sepals free of the minute particles, was identified as *Stelis furfuracea* in *Systematics of the Genus Stelis* (Garay, 1980). It also varies with leaves proportionately shorter and wider and the apex is obtuse to rounded, instead of acute. The peduncle is distinctly longer than the leaves, instead of being shorter.

Stelis glumacea Lindl., Folia Orch. *Stelis* 3, No. 9. 1859. TYPE: ECUADOR. Pichimcha: Andes of Quito, on the road to Nanegal, *W. Jameson s.n.* (Holotype: K). Fig. 18.

Plant large, robust, epiphytic, shortly ascending, the rhizome 6–8 mm thick, 5–10 mm between ramicauls; roots coarse. Ramicauls erect, stout, 9–10 cm long, enclosed by a tubular sheath from below the middle, and another 2 below and at the base. *Leaf* erect, coriaceous, elliptical, acute to subacute, petiolate, 11–13 cm long including a distinct petiole 1.5 cm long, the blade 3–3.5 cm wide in the dry state, cuneate below into the petiole. *Inflorescence* solitary; to 30 cm tall, the raceme erect, distichous, strict, many-flowered, with several flowers open simultaneously; floral bracts spreading, oblique, acuminate, acute, 10 mm long low in the raceme to 8 mm long above; pedicels 4 mm long; ovary 2 mm long; the peduncle 10 cm long, with distant bracts, subtended by a spathe 1.2 cm long, from a node below the apex of the ramicaul; *sepals* light yellow, suffused with purple externally and within, expanded, glabrous, transversely ovate, obtuse, 5-veined, connate below the middle, the dorsal sepal, 4 mm long, 5.5 mm wide, the lateral sepals 3.5 mm long, 5 mm wide; *petals* thick, fleshy, transversely semilunate, concave near the base below a thick transverse lamina, 1.3 mm long, 2 mm wide, 3-veined; *lip* type A, ovoid, 1 mm long, 1.5 mm wide, 1 mm deep,

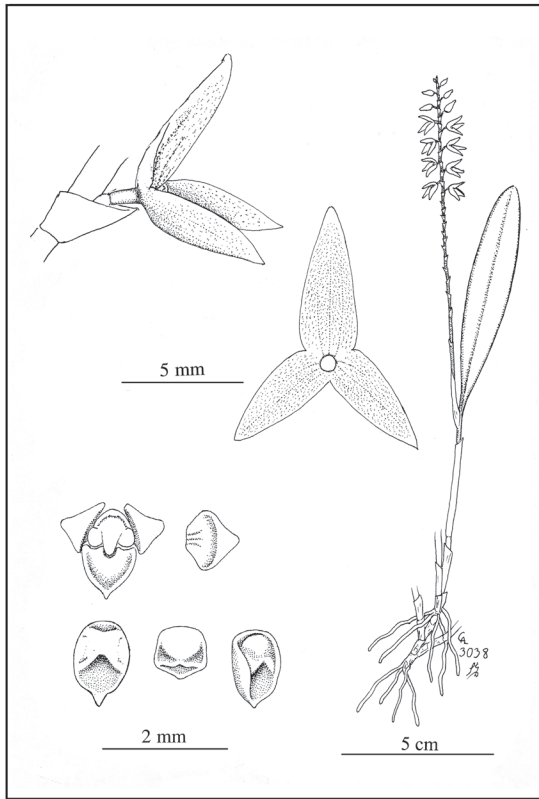


FIGURE 17. *Stelis furfuracea* F.Lehm. & Kraenzl.

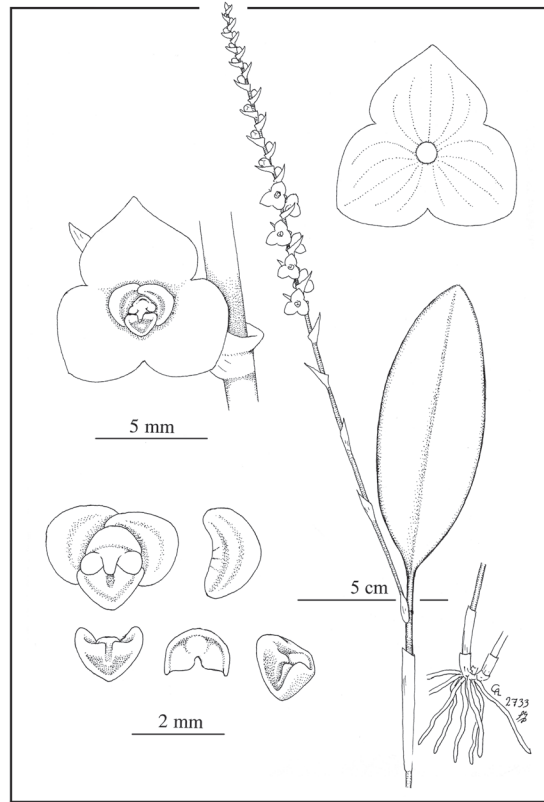


FIGURE 18. *Stelis glumacea* Lindl.

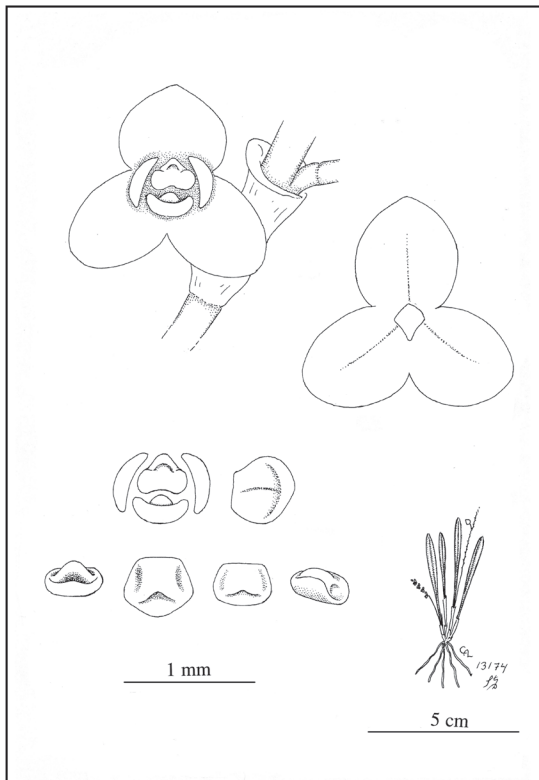


FIGURE 19. *Stelis graminea* Lindl.

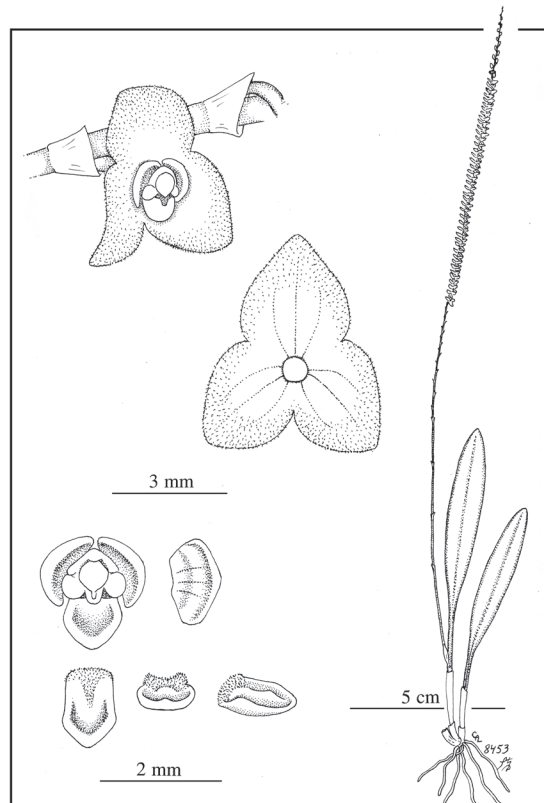


FIGURE 20. *Stelis hirsuta* Garay

concave below a shallowly cleft bar with a glenion, the apex obtuse. the dorsum descending with a low, indistinct, rounded callus, the base truncate, hinged to the base of the column; *column* stout, ca. 1 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *glumaceus*, “glumaceous (with glums), with chaffy bracts, like a spike of wheat” in allusion to the conspicuous floral bracts.

Additional collection: COLOMBIA. Nariño: SE of Ipiales toward La Victoria, 3000–3200 m, 22 Feb. 1978, C. Luer, J. Luer & A. Hirtz 2733 (SEL).

This large, robust species is similar to *Stelis grandiflora* Lindl., but is distinguished by a thick, ascending rhizome; ramicauls about as long as an elliptical, abruptly petiolate leaf; and conspicuous floral bracts spreading from the rachis. The flowers of the two species are similar with transversely ovate, five-veined sepals; thick, semilunate petals; and type A lips.

Stelis graminea Lindl., Fol. Orchid. *Stelis* 11, No. 77. 1859. TYPE: ECUADOR. probably Pichincha, W. Jameson s.n., (Holotype: K). Fig. 19.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 5–8 mm long, enclosed by a tubular sheath and another sheath at the base. *Leaf* erect, coriaceous, narrowly linear-elliptic, oblanceolate, acute, 2–3 cm long, 2 mm wide in the living state, gradually narrowed below to the peduncle. *Inflorescence* single; 2–3.5 cm long, the raceme erect, strict, subclax, many-flowered, flowering from near the base; floral bracts tubular, 1 mm long; pedicels 1 mm long; ovary 0.5 mm long; the peduncle from near the apex of the ramicaul; flowers yellow; *sepals* glabrous, similar, subcircular, obtuse to rounded at the apex, 0.8 mm long and wide, 1-veined; *petals* thin, concave, subcircular, the apical margin slightly thickened, without a transverse callus, 0.4 mm long and wide, 1-veined; *lip* subquadrate, 0.4 mm long, 0.4 mm wide, 0.2 mm deep, shallowly concave below an intact bar to the broadly obtuse tip, the dorsum slightly convex, the base truncate, hinged to the base of the column; *column* ca. 0.4 mm long and wide, the anther and the stigma apical.

Etymology: From the Latin *gramineus*, “grass-like,” referring to the habit.

Additional collections: COLOMBIA. Antioquia: Concepción, between Concepción and Barbosa, 2380 m, 12 April 1988, C. Luer, J. Luer & R. Escobar 13174 (MO); without collection data, fl. in cult. by Colomborquídeas, 22 November 1981, C. Luer 6744 (SEL).

This very small, caespitose species is distinguished by narrow, linear leaves and a successively flowering raceme that eventually surpasses the leaves. The flowers are the smallest of any known species of *Stelis* Sw., rivaling the smallest species of *Platystele* Schltr. The subcircular sepals and petals are single-veined, the sepals being about eight tenths of a millimeter long and wide. The tiny, obtuse lip, less than a half millimeter long or wide, is concave below a curved bar. The lip is not basically similar to those closely related to *Stelis pusilla* Kunth, with which it has been synonymized in the past.

Stelis hirsuta Garay, Bot. Mus. Leaff. 27 (7–9): 184, 1980; *non Stelis parviflora* (Ruiz & Pav.) Pers. 1807. Fig. 20.

Basionym: *Stelis jamesonii* var. *parviflora* Garay, Can. J. Bot. 34: 352. 1956. TYPE: COLOMBIA. Cundinamarca: Cordillera Oriental, San Isidro, S of Gachala, 2200 m, 27 May 1944, M. L. Grant & F. R. Fosberg 9362 (Holotype: AMES; Isotypes: COL, US, WS).

Etymology: From the Latin *parviflorus*, referring to the presumed size of the flowers.

Plant medium in size, epiphytic, caespitose to ascending; roots slender. Ramicauls erect, 2.5 cm long, enclosed by tubular sheath below the middle and another 2 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical, subacute to narrowly obtuse, petiolate, 5–9 cm long including a petiole 1.5–2 cm long, 1–1.5 cm wide in the dry state, cuneate below into the petiole. *Inflorescence* single; 20–27 cm tall, the raceme erect, congested, secund, strict, short-pedicellate, many-flowered with many flowers open simultaneously; floral bracts oblique, obtuse, 1.5 mm long and wide; pedicels 1.5 mm long; ovary 1 mm long; the peduncle 7–8 cm long, from a node below the apex of the ramicaul with a spathe 1 cm long; *sepals* purple externally, greenish purple within, minutely pubescent, broadly ovate, obtuse, connate below the middle, 3-veined, the dorsal sepal 3 mm long, 3 mm wide, the lateral sepals 2.5 mm long, 2.5 mm wide; *petals* yellow-green, transversely obovate, concave, 0.75 mm long, 1.2 mm wide, 3-veined, the apex broadly rounded with the margin slightly thickened; *lip* yellow-green, subobovate-discoid, 1 mm long, 0.8 mm wide, 0.5 mm deep, concave within the obtuse apical margin, surrounding a low, rounded callus extending forward from a densely short-pubescent callus at the base, the base truncate, hinged to the base of the column; *column* stout, ca. 1 mm long and wide, with an obsolescent foot, the anther and the bilobed stigma apical.

Etymology: From the Latin *hirsutus*, “hairy,” referring to the pubescent sepals.

Additional collection: COLOMBIA. Cauca: Sotará, between Paispamba and Chapa, 2300 m, 16 November 1982, C. Luer & R. Escobar 8453 (SEL).

This medium-sized species is characterized by short ramicauls bearing longer, elliptical leaves; a long, strict, crowded, raceme of short-pedicellate flowers, as compared to those of the type, with minutely pubescent sepals, instead of glabrous; and petals and lip very similar to those of *S. jamesonii* Lindl. The floral bracts and the pedicels of *S. jamesonii* are conspicuously longer.

Stelis hirsuta from the Eastern Cordillera of Colombia was first described by Garay as a variety of *Stelis jamesonii*, citing as differences a slender, densely multiflowered inflorescence, and flowers believed to be smaller than those of the type. Another collection from the Central Cordillera in the department of Cauca appears to be the same species, except that the flowers, instead of smaller, are about the same size, but with different colors. No mention of the lengths of the pedicels and floral bracts, nor pubescence of the sepals is made, although the illustration of the flower of the variety shows pubescent sepals.

Stelis lindenii Lindl., *Orchid. Linden.* 3, 1846. TYPE: VENEZUELA: Mérida: valley of Mérida, 6000 ft., *J. Linden 679* (Holotype: K), C. Luer illustr. 21950. Fig. 21–23.

Synonyms: *Stelis grandis* Rchb.f., *Bonplandia* 3: 70, 1855.

TYPE: VENEZUELA: Mérida, *L. J. Schlim 1019* (Holotype: W).

Etymology: From the Latin *grandis*, “large,” referring to the size of the plant.

Stelis cairoënsis Luer, *Selbyana* 30(1): 20, 2009. TYPE: COLOMBIA. Valle del Cauca: El Cairo, Cerro del Inglés, Serranía Paraguas, 2080 m, 9 November 1997, *P. A. Silverstone-Sopkin 8000* (Holotype: CUV; Isotype: MO), C. Luer illustr. 21264;

Etymology: Named for the community of El Cairo, Valle del Cauca, where this species was collected.

Plant large, epiphytic, densely caespitose-ascending, the rhizome stout, to ca. 1 cm thick, roots slender. Ramicauls erect, relatively slender, 10–20 cm long, with by a tubular sheath from below the middle and another 2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical-ovate, acute, petiolate, 6–13 cm long including the petiole 1.5–2 cm long, the blade 1.5–3 cm wide, cuneate below into the petiole. *Inflorescence* 2–6 simultaneous; 8–18 cm long, the racemes more or less erect, strict, congested, distichous, many-flowered, with many flowers open simultaneously; floral bracts tubular, acute, 2–3 mm long; pedicels 1.5–2 mm long; ovary 1–2 mm long; the peduncle 5–8 cm long, with a spathe 1–1.5 cm long, at an annulus below the apex of the ramicaul; *sepals* usually green or yellow-green, one known with purple suffusion, similar, glabrous, broadly ovate, broadly obtuse, connate to below the middle, the dorsal sepal 3.5–4.5 mm long, 4–5 mm wide, 5-veined, the lateral sepals oblique, 3–4 mm long, 3–5 mm wide, 4- to 5-veined; *petals* green or purple, transversely semilunate, concave, 1 mm long, 1.5 mm wide, 3-veined, the apical margin broadly thickened and with a transverse carina; *lip* green or purple, obliquely subquadrate, 0.75–1 mm long, 0.8–1 mm wide, 0.5–0.8 mm deep, concave below a thick bar with a glenion, with a transverse carina, the apex broadly rounded, the dorsum more or less descending, with a rounded or trilobed callus, the base truncate, hinged to the base of the column; *column* stout, ca. 1 mm long and wide, the anther and the bilobed stigma apical.

Etymology: Named in honor of Jean Linden, Belgian orchidist, who collected this species.

Additional collections: COLOMBIA. Antioquia: El Carmen, Alto de San Lorenzo, 2600 m, 17 September 1984, *C. Dodson & R. Escobar 15317* (MO); Boquerón San Lorenzo, 2500 m, cultivated by M. and O. Robledo, 19 March 1989, *C. Luer 14284* (MO); Urrao, between Urrao and Carmen de Atrato, 2700 m, 30 May 1995, *C. Luer, J. Luer, L. Posada & R. Escobar 17643* (MO); La Union, between La Union and Mesopotamia, 2400 m, 8 April 1988, *C. Luer, J. Luer & R. Escobar 13061, 13067* (MO); Yarumal, NE of Santa Rosa, Yarumalito, 2350 m, 15 May 1985, *C. Luer, R. Rodrigo & E. Valencia 11365* (MO). Valle

del Cauca: El Cairo, Cerro del Inglés, Serranía Paraguas, 2430 m, 1 April 1988, *P.A. Silverstone-Sopkin et al. 3887* (CUVC), C. Luer illustr. 21254. Nariño: near Laguna La Cocha, along road from Pasto to Mocoa, 25 July 1960, *L. A. Garay 45* (AMES).

Stelis lindenii Lindl. of Venezuela and Colombia is variable both florally and vegetatively. It is characterized by an elongated ramicaul that bears a shorter, acute, elliptical-ovate leaf and an inflorescence of several racemes about as long as to longer than the leaf. The expanded flowers are with broad, five-veined sepals; thick, three-veined petals; and a type A lip are basically similar to those of *Stelis grandiflora* that is distinguished by proportionately short ramicauls and the inflorescence with a single, longer raceme.

Stelis ochreatea Lindl. was mistakenly identified as *Stelis lindenii* in Luer (2009).

Stelis longipetala O. Duque, *Orquideología* 20(3): 353, 1997. TYPE: COLOMBIA. Antioquia: between Urrao and Frontino, 2500 m, collected by M. Zapata, October 1995, fl. in cult., February 1996, *O. Duque 1903* (Holotype: JAUM). Fig. 24.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1–3 cm long, enclosed by a tubular sheath from below the middle and 1–2 sheaths at the base. *Leaf* erect, coriaceous, narrowly elliptical, obtuse, 2–3.5 cm long including the petiole 1–1.5 cm long, the blade 5–7 mm wide, narrowly cuneate below into the petiole. *Inflorescence* an erect, subcongested, distichous, many-flowered raceme with many flowers open simultaneously, 6–9 cm long including the peduncle ca. 3 cm long, from a node below the apex of the ramicaul; floral bracts tubular, acute, 1.5 mm long; pedicels 1 mm long; ovary 1 mm long; *sepals* light yellow, the lateral sepals more or less lightly suffused with purple, glabrous, the dorsal sepal broadly ovate to suborbicular, broadly obtuse to rounded at the tip, 3 mm long, 3 mm wide, 3-veined, connate basally to the synsepal, the lateral sepals, connate below the middle, connivent, forming an ovoid, deeply concave synsepal, 3 mm long, each sepal 2 mm wide, 3-veined; *petals* pale yellow, transversely elliptical-oblong, the apex obtuse to rounded, 1.2 mm long, 0–8 mm wide, 3-veined at the base; *lip* pale yellow, cordate-triangular, 0.5 mm long, 0.6 mm wide, 0.3 mm deep, shallowly concave, the apex obtuse with thickened margin, the base slightly thickened centrally, truncate, hinged to the base of the column; *column* stout, 0.5 mm long, 1 mm wide across stigmatic lobes, the anther and bilobed stigma apical.

Etymology: From the Latin *longipetalus*, “long-petaled,” referring to the outstretched petals.

Additional collection: Antioquia: Chocó: south of the pass between Urrao and Carmen de Atrato, 2700 m, 31 May 1985, *C. Luer, J. Luer & R. Escobar 17679* (MO).

This little species of section *Humboldtia*, is easily identified by thick, elliptical petals rounded at their tips, that expand laterally from column. The three veins are visible only at the base below the blade of the lip.

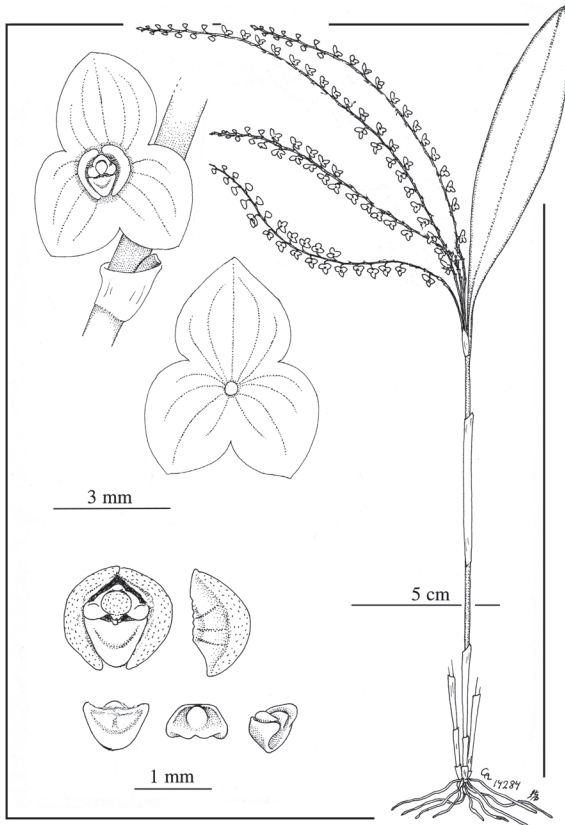


FIGURE 21. *Stelis lindenii* Lindl.

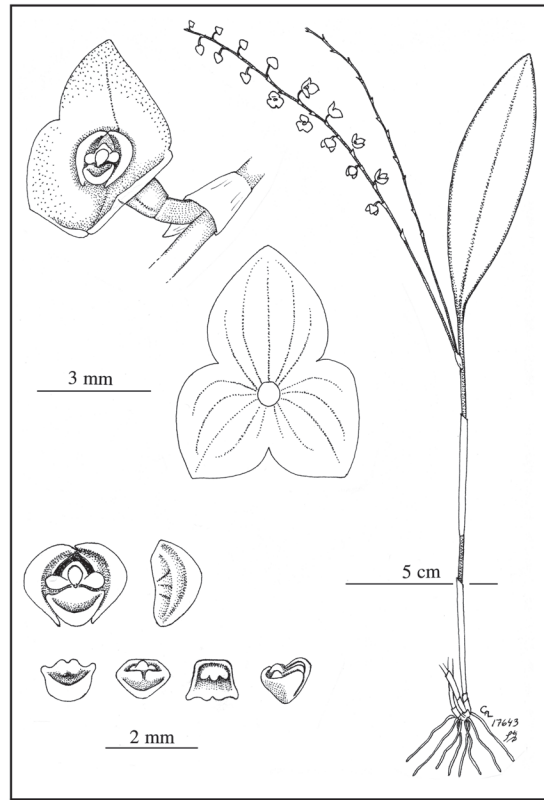


FIGURE 22. *Stelis lindenii* Lindl.

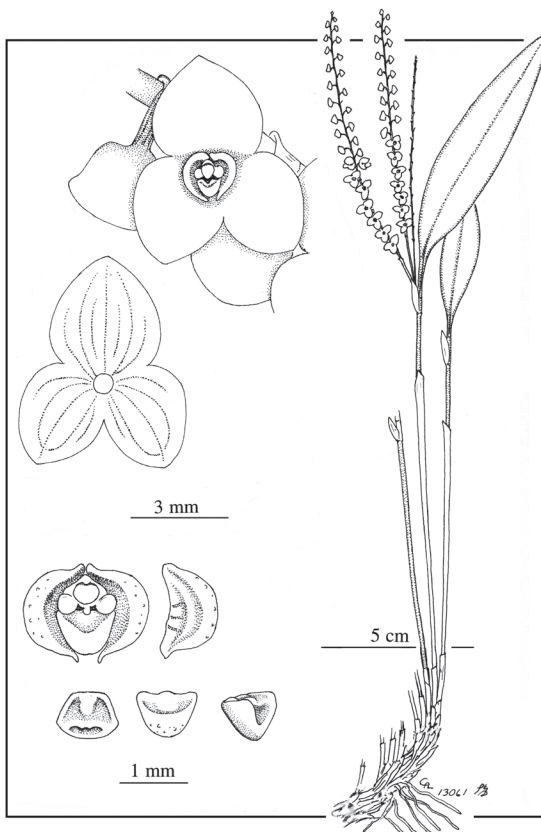


FIGURE 23. *Stelis lindenii* Lindl.

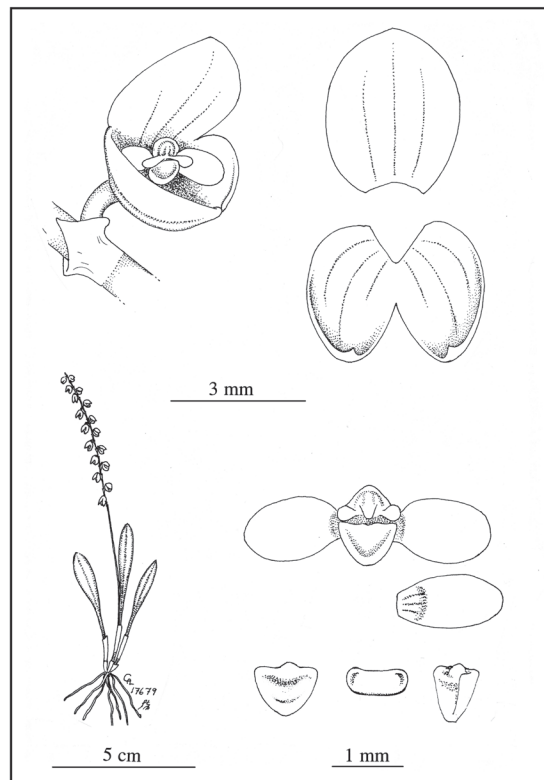


FIGURE 24. *Stelis longipetala* O.Duque

Stelis macropoda Schltr., Repert. Spec. Nov. Regni Veg. 7: 90, 1920. TYPE: COLOMBIA. Cauca: West Andes above Cali, 1600–2000 m, October, *F. C. Lehmann 4519* (Holotype destroyed at B; Isotype: K). Fig. 25–26.

Plant large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10–15 cm long, with a close, tubular sheath above the middle, 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical-ovate, acute, 10–16 cm long, 2–3 cm wide, cuneate below into a petiole 2–2.5 cm long. *Inflorescence* 2–4, 10–15 cm long, the racemes erect, congested, distichous, many-flowered; floral bracts oblique, acute, 2 mm long; pedicels 2 mm long; ovary 1–5 mm long; the peduncle 1–3 cm long, subtended by a spathe 1–1.5 cm long, from a node below the apex of the ramicaul; flowers yellow-green; *sepals* glabrous to cellular-pubescent, 3-veined, the dorsal sepal erect, elliptical, subacute, 4 mm long, 2 mm wide, connate basally to the synsepal, the lateral sepals semiconnate into a broadly ovate, centrally concave synsepal, 3 mm long, 4 mm wide, 6-veined; *petals* transversely ovate, concave, 0.75 mm long, 1 mm wide, the apex obtuse with thickened margin, 3-veined; *lip* subquadrate, obtuse, 0.5 mm long, 0.6 mm wide, 0.3 mm deep, concave below a thick bar with a narrow glenion, the dorsum filled with a low, rounded callus, the base truncate, hinged to the base of the column; *column* stout, 0.75 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Greek *makropoda*, “long-footed,” referring to the long ramicauls.

Additional collections: COLOMBIA. Risaralda: Pueblo Rico, road to TV antenna, 2400 m, *C. Luer, J. Luer, R. Escobar & A. de Wilde 16792* (MO). Valle del Cauca: old road between Cali and Buenaventura, 1800 m, 7 October 1989, *J. E. Ramos 1943* (SEL). Cauca: Meseta de Popayán, cultivated by Amalia Lehmann de Sarria in Popayán, 16 November 1982, *C. Luer 8445* (SEL).

This tall species of section *Humboldtia* is vegetatively similar to *Stelis lindenii* Lindl., with narrow, acute leaves borne by slender ramicauls and two to four many-flowered racemes about as long as the leaves. The sepals are glabrous and three-veined without forming a synsepal. However, the three-veined petals and the type A lip with a low, rounded callus on the dorsum, are similar.

Stelis major Rchb.f., Bonplandia 2: 23, 1854. TYPE: VENEZUELA. Dist. Fed. Caracas, collected by H. Wagener, flowered in cultivation at Berlin-Dahlem Botanical Garden, *H. Wagener s.n.* (Holotype: K), *C. Luer* illustr. 21976. Fig. 27–28.

Plant medium to large, epiphytic, presumably caespitose. Ramicauls erect, stout, 3–4 cm long, with a close, tubular sheath from below the middle, another 2 sheaths below and at the base. *Leaf* erect, coriaceous, obovate, obtuse, 5–8 cm long including a petiole, ca. 1.5 cm long, the blade 1.2–1.8 cm wide in the dry state, cuneate below into the petiole. *Inflorescence* single; 10–15 cm long, the raceme erect, subcongested, distichous, many-flowered; floral bracts

oblique, acute, 3 mm long; pedicels 3 mm long; ovary 2 mm long; peduncle ca. 6 cm long, subtended by a spathe ca. 1.5 cm long, from a node below the apex of the ramicaul; color of flowers unknown; *sepals* glabrous, broadly ovate, 3-veined, connate below the middle, the dorsal sepal obtuse, 5 mm long, 5 mm wide, the lateral sepals subcircular, 4 mm long, 5 mm wide; *petals* transversely oblong, 1.75 mm long, 2 mm wide, thin, concave, 3-veined, the apical margin broadly rounded, narrowly thickened; *lip* subcircular, 2 mm long, 1.75 mm wide, 0.5 mm deep, concave, with a central, sulcate callus, the apex subtruncate with thin margins, the dorsum minutely pubescent, the base truncate, connate to the base of the column; *column* stout, ca. 1.5 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *major*, “greater,” referring to the flowers being larger than those of the usual species of *Stelis*.

Additional collection: COLOMBIA. Caldas: Cerro Tatamá, Quebrada Peñas Blancas, SW of Santuario, 3135 m, 3 December 1944, *H. St. John 20879*, *C. Luer* illustr. 21975 (AMES, US).

This species was described by Reichenbach from a collection by Hermann Wagener from the Sierra Nevada de Mérida, apparently sent from Caracas, and cultivated at Berlin, hence the holotype consists of only two detached ramicauls, but each with leaf and a raceme. Dunsterville’s illustration nr. 604 published by Romero and Carnevali (2000: 1031) is an unidentified species.

Stelis major is characterized by a single, many-flowered raceme that exceeds an obovate, obtuse leaf; relatively large flowers with glabrous, three-veined, subcircular sepals; thin, three-veined petals; and a concave lip with a central, pubescent, sulcate callus. In the original description the apex of the callus is described as being three- or four-carinate, but the callus of the lip from a rehydrated flower from the holotype is clearly bicarinate. The apex of the lip is thin, subtruncate with the tip recurved, creating a bilobed appearance.

Stelis microphylla Lindl., Fol. Orchid. *Stelis* 10(74), 1858. TYPE: ECUADOR. Eastern Cordillera, at 13000 ft., *W. Jameson s.n.*, (Holotype: K). Fig. 29.

Plant small, epiphytic, repent, ascending; rhizome slender, 5–15 mm between ramicauls; roots slender. Ramicauls ascending-erect, slender, 10–12 mm long, enclosed by a tubular sheath from below the middle and another at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 1.5–2.8 cm long including an indistinct petiole, 2 mm wide when dry, gradually narrowed below into the petiole. *Inflorescence* single, 2.5–4.5 cm long, the raceme erect, subclax, distichous, several-flowered; floral bracts acute, 1.5–2 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; the peduncle ca. 1 cm long, from a node below the apex of the ramicaul; flowers yellow; *sepals* glabrous, ovate, obtuse, 3-veined, dorsal sepal 1.75 mm long, 1.75–1.3 mm wide, the lateral sepals 1.5 mm long, 1.3 mm wide, connate below the middle; *petals* subcircular to transversely cuneate, obtuse, ca. 0.5 mm long, 0.5 mm wide, 1-veined,

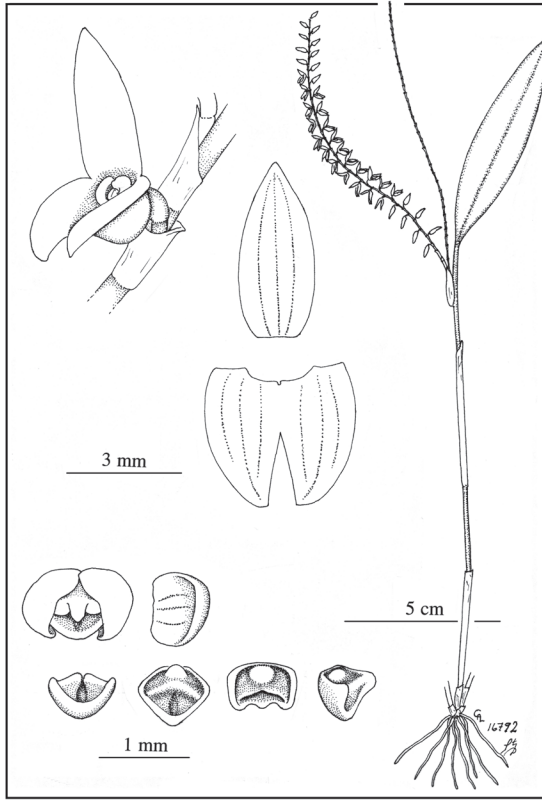


FIGURE 25. *Stelis macropoda* Schltr.

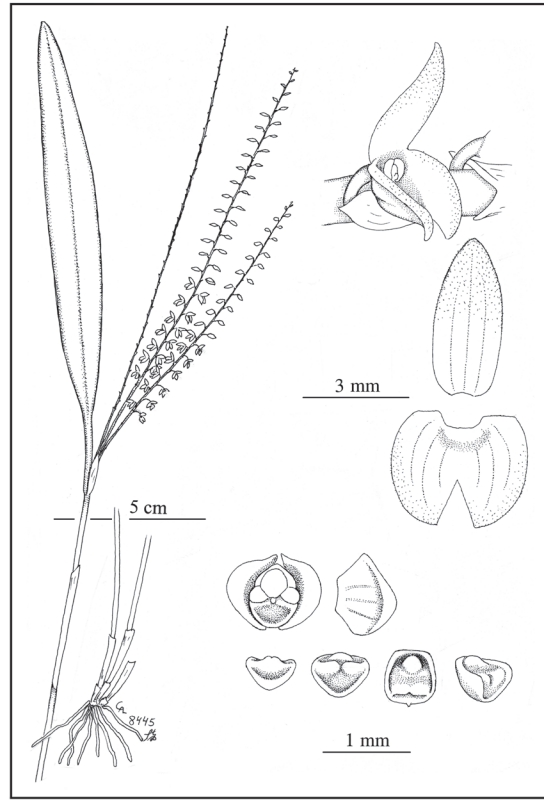


FIGURE 26. *Stelis macropoda* Schltr.

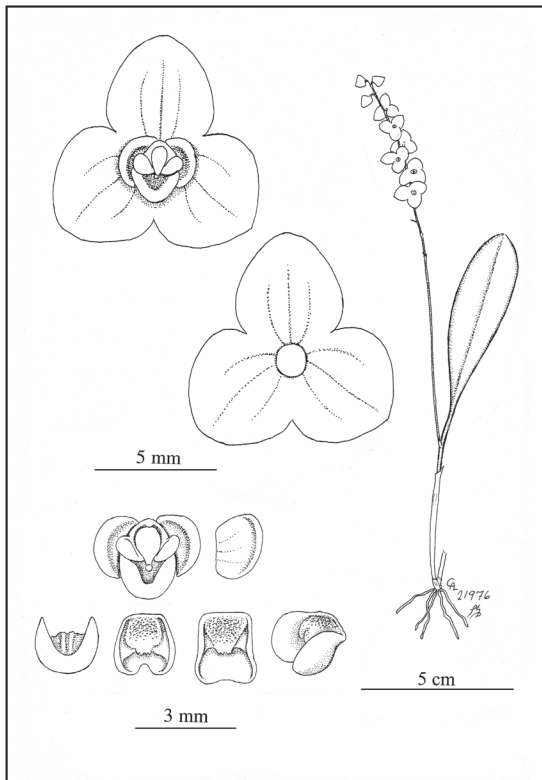


FIGURE 27. *Stelis major* Rchb.f.

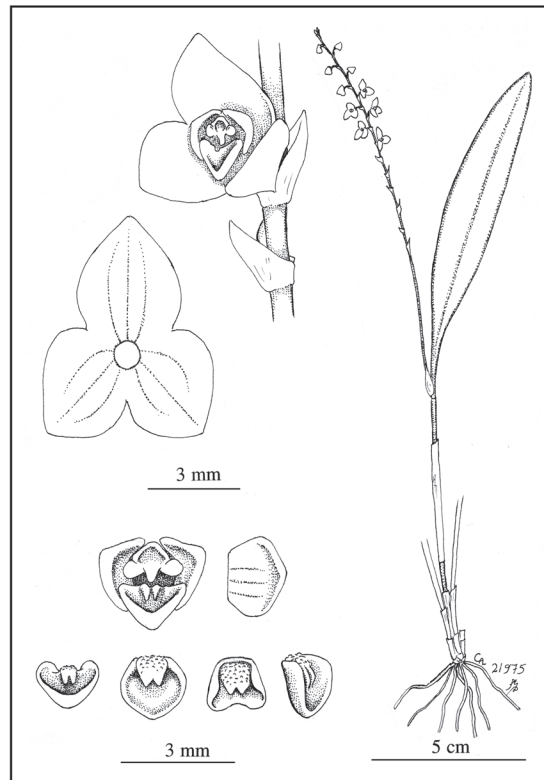


FIGURE 28. *Stelis major* Rchb.f.

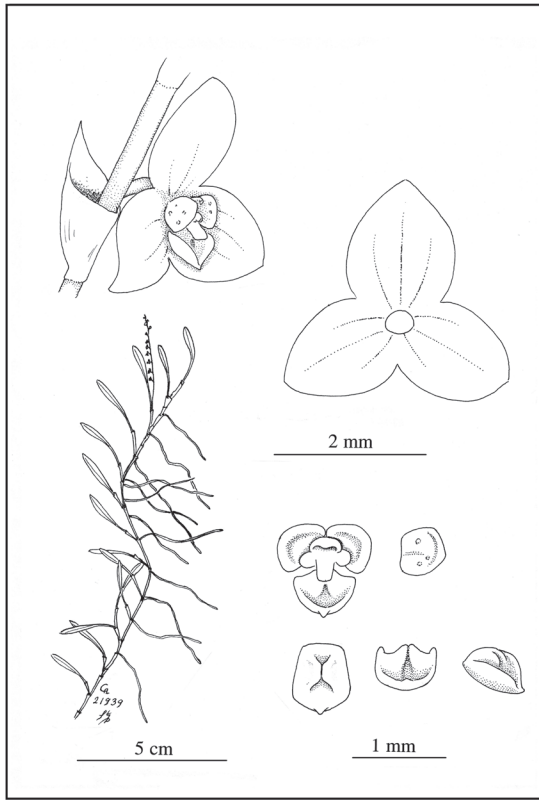


FIGURE 29. *Stelis microphylla* Lindl.

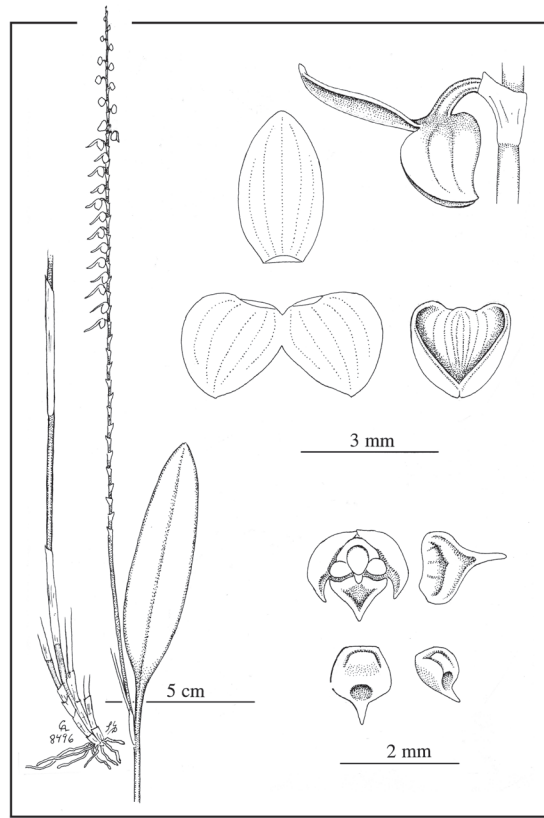


FIGURE 30. *Stelis mucronipetela* Schltr.

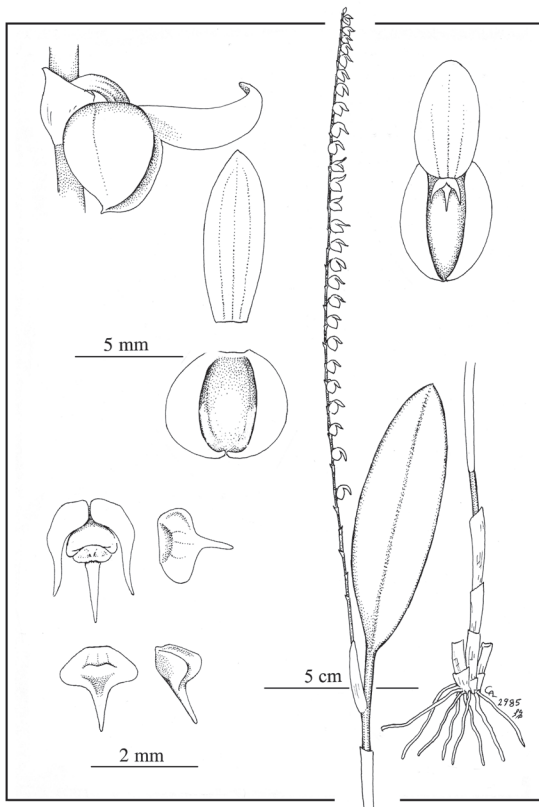


FIGURE 31. *Stelis mucronipetela* Schltr.

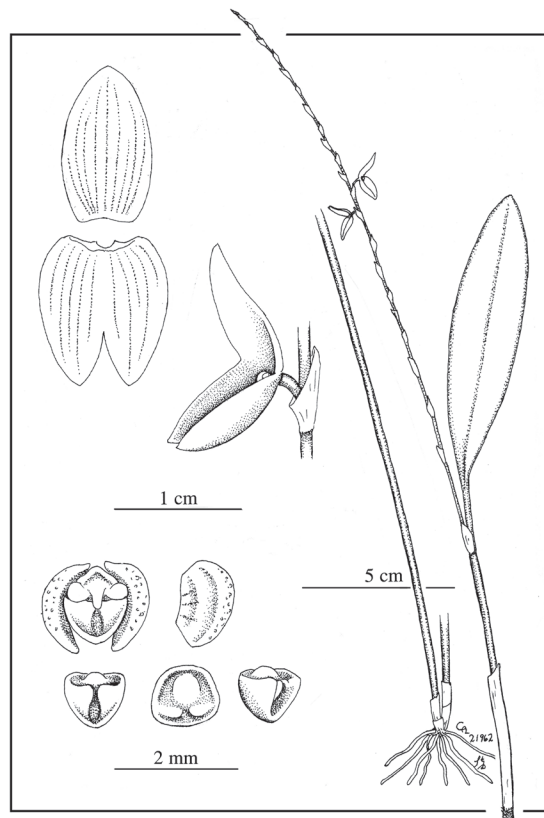


FIGURE 32. *Stelis pachystele* Schltr.

thin, shallowly concave, narrowly thickened on the apical margin; *lip* subquadrate, ca. 0.6 mm long, 0.6 mm wide, 0.5 mm deep, the apex broadly obtuse to truncate with a small, indistinct, triangular apiculum, concave below a shallowly cleft bar, the dorsum slightly convex, microscopically pubescent at the base, the base hinged to the base of the column; *column* stout, ca. 0.5 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Greek *microphyllon*, “minute-leaved,” referring to the foliage.

Additional collections: COLOMBIA. Cauca: Páramo de Guanacas, 2800–3200 m, 9 January 1886, *F. C. Lehmann 6039* (AMES), *C. Luer* illustr. 21072. Quindío: at the pass between Salento and Tocha, 3300 m, 10 May 1993, *C. Luer, J. Luer & R. Escobar 16750* (MO). Putumayo: Santiago, San Antonio de Bellavista, 3240 m, 18 Mar. 1999, *S. M. Pasmíño & M. R. Posso 040* (MO, PSO), *C. Luer 21936*.

The flowers of this small species are basically similar to those of *Stelis pusilla* Kunth, but the habit differs distinctly. Minute, narrowly elliptical leaves are borne by also minute ramicauls spaced loosely along a slender, creeping rhizome, sometimes forming great clumps. The inflorescence of tiny flowers surpasses the leaf. This species is usually reduced to the synonymy of *Stelis pusilla*, but it is distinguished by a loose, scandent, repent habit.

Stelis mucronipetala Schltr., Rep. Spec. Nov. Regni Veg. Beih. 27: 33, 1924. TYPE: COLOMBIA. Nariño: near Daza, 10 Km NW of Pasto, 2800 m, January 1922, *W. Hopp 135* (Holotype lost at B), Neotype, here designated: COLOMBIA. Tolima: La Linea between Ibagué and Armenia, 3500 m, 20 October 1982, *C. Luer & R. Escobar 8496* (SEL). Fig. 30–31.

Plant large, epiphytic, caespitose. Ramicauls erect, stout, 10–15 cm long, with a tubular sheath from near or below the middle, and another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical-ovate, acute to subacute, 5–12 cm long including a petiole 1.5–3 cm long, the blade 1.5–3 cm wide in the dry state, cuneate below into the petiole. *Inflorescence* 1–2; 15–30 cm long, the raceme erect, subclax, distichous, with nearly simultaneous, nodding flowers; floral bracts oblique, obtuse, 2–3 mm long; pedicel 2–3 mm long; ovary 2–3 mm long; the peduncle 3–5 cm long, subtended by a slender spathe 12–20 mm long, from a node near the apex of the ramicaul; flowers purple-brown, *sepals* glabrous, the dorsal sepal elliptical, obtuse, 5-(or 3-)veined, connate near the base, dorsal sepal 6–8 mm long, 2.5–3.5 mm wide, the lateral sepals ovate, oblique, obtuse, connate to the tips into a suborbicular synsepal, 4–5 mm long, 4–6 mm wide unexpanded, multiveined; *petals* rose, long-apiculate, the blade 0.75 mm long, 1.5 mm wide, 3-veined, with a transverse carina, the apex subtruncate, contracted into a slender process 0.5 mm long; *lip* trilobed, ca. 1.5 mm long, 1.25 mm wide, 0.5 mm deep, concave below a shallowly channeled bar, the apex long-acuminate to an acute tip, the dorsum with a low, rounded callus, the base truncate, connate to the base of the column; *column* stout, ca. 1 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *mucronipetalus*, “with sharp-pointed petals” referring to the elongated tips of the petals.

Additional collections: COLOMBIA. Cauca: above Monchique, W of Popayan, 2750 m, 26 July 1978, *C. Luer, J. Luer & R. Escobar 2985* (SEL); above Monchique, W of Popayan, 2750 m, 26 July 1978, *C. Luer, J. Luer & R. Escobar 2985, 2985-A* (SEL); Putumayo: between La Cocha and Sibundoy, 2700 m, 5 August 1978, *C. Luer, J. Luer & R. Escobar 3109* (SEL); Tolima: Alto de Pozo, W of Ibagué, 3300 m, 20 April 1982, *C. Luer, J. Luer & R. Escobar 7483* (SEL).

This large, caespitose species is one of several with long-apiculate petals and lip similar to those of *Stelis pardipes* Rchb.f., which is frequent in Central America and the Andes, and several prolific species, i.e. *S. bicornis* Lindl. and *S. trisetata* Lindl. *Stelis mucronipetala* is distinguished by a larger habit, twice broader elliptical-ovate leaves; twice larger flowers with the dorsal sepal six to eight millimeters long; and a suborbicular synsepal. The petals and lip are similar to those of *S. pardipes*, with the slender, apical processes of the petals and lip pointing forward like the three prongs of a trident.

Stelis pachystele Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 92, 1920. COLOMBIA. Cauca: “West-Andes von Cali,” 1600–2000 m, October–November 1886, *F. C. Lehmann 6922* (Holotype destroyed at B; Isotype: AMES). Fig. 32.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 12–28 cm long, enclosed by a tubular sheath above the middle, and another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical-ovate, acute, petiolate, 12–28 cm long including the petiole 3 cm long, the blade 1.5–3 cm wide, cuneate below into the petiole. *Inflorescence* 2 successive; 15–20 cm long, erect, strict, subclax, many-flowered, with several flowers open simultaneously; floral bracts oblique, acute, 6–7 mm long below, 4 mm long above; pedicels 2 mm long; ovary 4 mm long; the peduncle ca. 5 cm long, subtended by a spathe 1.5 cm long, from a node below the apex of the ramicaul; flowers appear to have been purple; *sepals* glabrous, membranous, the dorsal sepal ovate, acute, 8–12 mm long, 6–9 mm wide, 7- to 9-veined, connate basally ca. 3 mm, the lateral sepals connate to near the apex into a concave synsepal, 8–12 mm long, 8–10 mm wide expanded, 10-veined; *petals* transversely ovate, 1 mm long, 1.25 mm wide, 3-veined, concave, the apex broadly rounded, with a broadly thickened margin, with a transverse callus; *lip* type A, subquadrate, 0.75 mm long, 1 mm wide, 0.75 mm deep, shallowly concave below the bar with a short, central cleft that is continuous with a long glenion nearly to the rounded tip, the dorsum with a broad, low callus, the base truncate, hinged to the base of the column; *column* semiterete, ca 1 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Greek *pachystele*, “thick column,” referring to the column, but the column of an isotype does not appear thicker than would be expected.

Additional collections: COLOMBIA. Cauca: above Tocota, "West Andes of Cali," 1700–2000 m, *F. C. Lehmann 6811* (AMES), C. Luer illustr. 21962; Cauca: "West Andes of Cali," 2000 m, 15 December 1882, *F. C. Lehmann 2025* (AMES).

This large, caespitose species had been considered to be a variation of the variable *Stelis purpurea* (Ruiz & Pav.) Willd., but it differs with most ramicauls being much longer than the longest ones of *S. purpurea*; shorter, non-acuminate floral bracts; and larger flowers with multiveined sepals. Schlechter stated that the dorsal sepal is only five-veined, as in his illustration, but the additional veins are not easily seen. The column is not proportionately larger or thicker than would be expected. A rehydrated flower from *Lehmann 6922*, an isotype at AMES, has a dorsal sepal with nine veins as illustrated herewith.

Stelis papilio O. Duque, *Orquideología* 20(3): 358, 1997. TYPE: COLOMBIA. Risaralda: near Pueblo Rico, 2100 m, collected by P. Alvarez, fl. in cult. 28 October 1989, *O. Duque 419* (Holotype: JAUM). Fig. 33.

Synonym: *Stelis papiliopsis* O. Duque, *Orquideología* 20(3): 361, 1997. TYPE: COLOMBIA. Antioquia: La Honda between La Union and Sonsón, 1800 m, 22 September 1991, *O. Duque 1366* (Holotype: JAUM). Etymology: From the Latin *papilio*, "a butterfly," and the Greek suffix *-opsis*, "aspect," "appearance," referring to the appearance of the species to *S. papilio*.

Plant large, epiphytic, densely caespitose; roots slender. Ramicauls erect, fasciculate, relatively slender, 15–17 cm long, enclosed by a loose, tubular sheath above the middle and 2–3 close, tubular sheaths below and at the base. *Leaf* erect, coriaceous, elliptical, acute, 14–16 cm long, including a petiole 2.5 cm long, the blade 3–3.5 cm wide in the dry state, cuneate below into the petiole. *Inflorescence* an erect, congested, distichous, large-bracted, many-flowered raceme with few flowers open simultaneously, to 15 cm long including the peduncle 1–2 cm long, subtended by a slender spathe 1.5 cm long, from an a node below the apex of the ramicaul; floral bracts oblique, acute, 8 mm long low in the raceme to 5 mm long above and imbricating; pedicels 3–4 mm long; ovary 1.5 mm long; *sepals* expanded, rose, microscopically pubescent within, connate in lower third, broadly ovate, obtuse, 5-veined, the dorsal sepal 6 mm long, 5.5 mm wide, the lateral sepals oblique, 4.5 mm long, 5 mm wide; *petals* yellow, ovate, obtuse, with a broad, faintly demarcated margin with multiple, minute crystalline deposits, 1.5 mm long, 1.2 mm wide, 3-veined at the base; *lip* red, subcircular, 1.5 mm long, 1.5 mm wide, 0.8 mm deep, concave with thin margins below a thick bar and with the tip of the lower third incurved, flat on the dorsum, base broadly truncate, hinged to the base of the column; *column* proportionately small, ca. 0.5 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *papilio*, "a butterfly," referring to the appearance of the petals and lip.

Additional collections: COLOMBIA. Risaralda: near Pueblo Rico, November 1993, collected by R. Escobar

s.n., fl. in cult. by Colomborquídeas, 23 May 1995, *C. Luer 17580* (MO). Antioquia: Finca San Francisco, between El Santuario and Cocorná, 2000 m, *O. Duque 1410* (JAUM).

Stelis papilio is a strong species with a large, elliptical leaf, a long, multiflowered raceme, and a variable lip. The morphology of the sepals and petals remain the same in two variations. The sepals are large, purple, five-veined, obtuse, deeply connate and microscopically cellular. The petals, emerging obliquely above the column, are ovate and thick with a broad, obtuse margin with multiple, minute crystals.

According to Duque's descriptions and discussions, the raceme of *Stelis papilio* is not congested, while that of *Stelis papiliopsis* is congested with conspicuous, imbricating floral bracts, and that the tip of the lip of *S. papilio* is concave and incurved, while the lip of *S. papiliopsis* is not. A variation from Risaralda with a congested raceme as in *S. papiliopsis*, and a lip with an incurved tip as in *S. papilio*, is illustrated herewith. The racemes of variations from Antioquia are not congested, and the tips of the lips are incurved.

Stelis parvilabris Lindl., *Ann. Mag. Nat. Hist.* 15: 385, 1845. TYPE: COLOMBIA. Cauca: Popayán, Páramo de Guanacas, 10,000 ft., *T. Hartweg s.n.* (Holotype: K), C. Luer illustr. 21998. Fig. 34.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 3–4 cm long, enclosed by a tubular sheath from below the middle and 1–2 sheaths below and about the base. *Leaf* erect, coriaceous, elliptical, acute, ca. 7 cm long including a petiole ca. 1.5 cm long, the blade 1.5 cm wide, cuneate below into the petiole. *Inflorescence* 2–3; the racemes erect, loose, subflexuous, ca. 4- to 5-flowered, 3–4 cm long, from below the apex of the ramicaul; floral bracts oblique, inflated, obtuse, 4 mm long, 3 mm broad; pedicels 1.5 mm long; ovary 1 mm long; flower color unknown; *sepals* antrorse, glabrous, 3-veined, the dorsal sepal broadly ovate, obtuse, concave, connate below the middle, 2 mm long, 2 mm wide, 3-veined, the lateral sepals connate below the middle, adherent to near the apex into a broadly ovate, concave synsepal, 2 mm long, 2.5 mm wide together, *petals* ovate, concave, the apex broadly obtuse, 0.5 mm long, 0.8 mm wide, 3-veined; *lip* subquadrate, 0.6 mm long, 0.5 mm wide, 0.3 mm deep, shallowly concave below a cleft in a rounded bar, the apex truncate with an obtuse tip, the base broadly truncate, hinged to the base of the column; *column* stout, clavate, ca. 0.5 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: From the Latin *parvilabris*, "with small lip," referring to the labellum.

This rare species was collected by Hartweg in the Páramo de Guanacas, stated by him to be "very scarce," and did not assign a collection number. At about the same time and place, another species, given his collection number 1411, was apparently abundant, because duplicate specimens were widely distributed among herbaria. The single, "scarce" specimen at K was described by Lindley as *Stelis parvilabris*, while one of the many duplicate collections was described as *Stelis brevilabris*, both descriptions being published in the *Annals of the Magazine of Natural History*

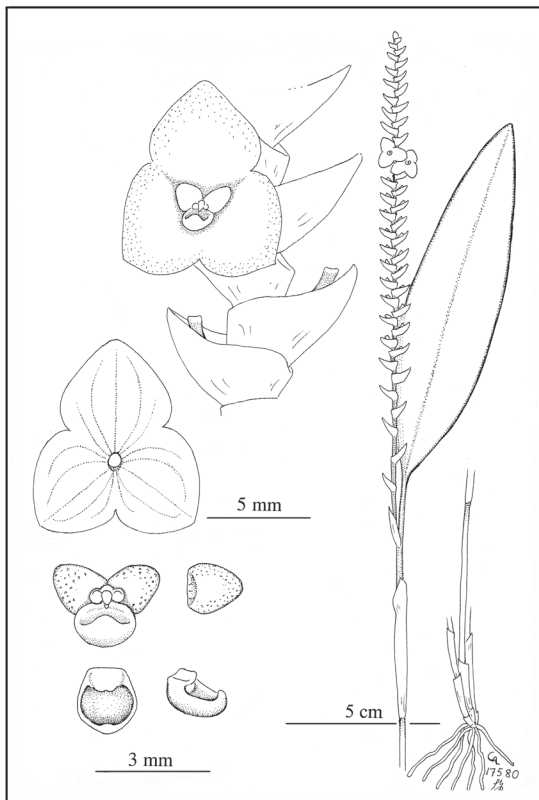


FIGURE 33. *Stelis papilio* O. Duque

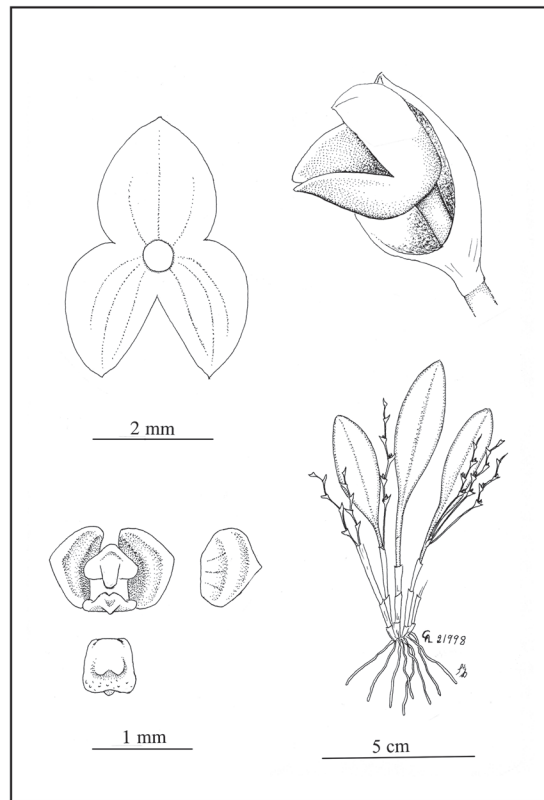


FIGURE 34. *Stelis parvilabris* Lindl.

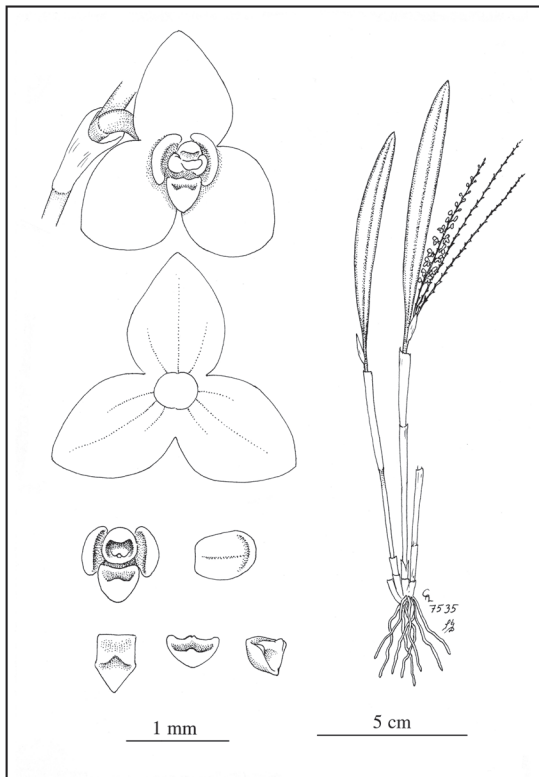


FIGURE 35. *Stelis pleistantha* Schltr.

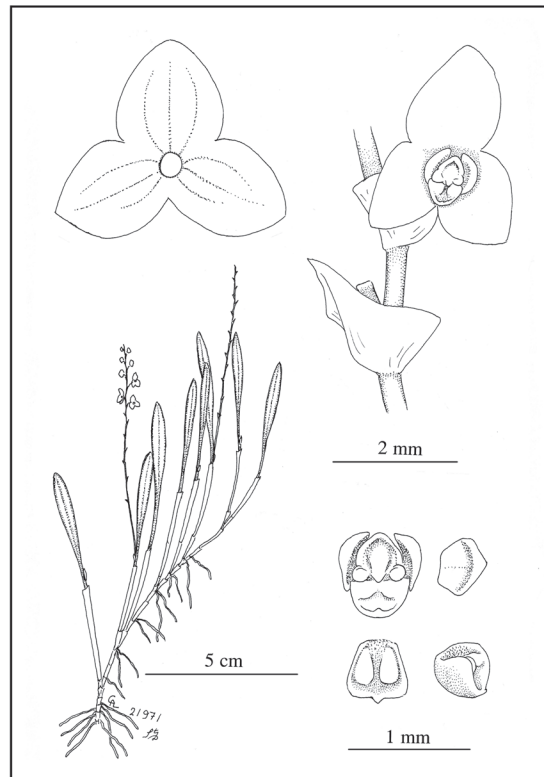


FIGURE 36. *Stelis polyclada* Lindl.

in 1845, but in different volumes. Confusion in the similar names arose. The single collection, *S. parvilabris*, is small and caespitose with loose racemes not longer than the leaves, while the other one of many, *S. brevilabris*, is larger and repent with racemes distinctly longer than the leaves. No subsequent collection of *S. parvilabris* is known.

Stelis parvilabris is characterized by a densely caespitose habit; acute, elliptical, petiolate leaves longer than the ramicauls; loose, subflexuose, few-flowered racemes shorter than the leaves; inflated floral bracts; three-veined sepals with the lateral sepals semiconnate.

Stelis pleistantha Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 36, 1924. TYPE: COLOMBIA. Nariño: epiphytic near Daza, 10 km NW of Pasto, 2800 m, January 1922, W. Hopp 139 (Holotype: probably lost at B). Fig. 35.

Synonym: *Apatostelis pleistantha* (Schltr.) Garay, Bot. Mus. Leaf. 27: 190, 1980.

Plant medium to large, epiphytic, densely caespitose; roots slender. Ramicauls erect, stout, 4–9 cm long, enclosed by a loose, tubular sheath near the middle and 2 sheaths below and about the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 7–10 cm long including ad petiole ca. 1 cm long, 0.8–1 cm wide, narrowly cuneate below into the petiole. *Inflorescence* 3–5 simultaneous racemes, 6–8 cm long, erect, many-flowered, congested, distichous, floral bracts oblique, acute, 1 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; the peduncle less than 1 cm long, from a spathe 1 cm long at a node below the apex of the ramicaul; Flowers yellow; *sepals* expanded, glabrous, broadly ovate, subacute, connate to near the base, 3-veined, the dorsal sepal 1.5 mm long, 1 mm wide, the lateral sepals 1 mm long and wide; *petals* thin, obovate, with the apex broadly obtuse, slightly thickened on the edge, 0.6 mm long, 0.5 mm wide, 1-veined; *lip* subquadrate, shallowly concave below an obtusely curved bar, the apex triangular, subacute, 0.6 mm long, 0.6 mm wide, 0.3 mm deep, the dorsum shallowly concave above the bar, the base broadly truncate, hinged to the base of the column; *column* stout, ca. 0.6 mm long and wide, the anther and the stigma apical, the stigma narrow within the sides of the column.

Etymology: From the Greek *pleistantha*, “most flowers,” referring to the inflorescence.

Additional collections: COLOMBIA. Boyacá: between Arcabuco and Moniquirá, 2500 m, 23 April 1982, C. Luer, J. Luer & R. Escobar 7535 (SEL).

This species is similar to *Stelis braccata* Rehb.f. and Warsz. that is relatively frequent in the Andes of Colombia and Ecuador. A variation in Colombia seems to differ sufficiently to be recognized. *Stelis pleistantha* is distinguished by a larger habit with stout, densely fascicled ramicauls about as long as narrow leaves, and three to five many-flowered racemes. The flowers are similar, but the thin, obovate petals are longer than wide, and the apex of the lip is triangular and subacute at the apex.

Stelis polyclada Lindl., Fol. Orchid. *Stelis* 10, No. 69. 1859. TYPE: ECUADOR. Pichincha: Quito, W. Jameson s.n., (Holotype: K). Fig. 36.

Synonyms: *Stelis scandens* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 39, 1924. TYPE: COLOMBIA. Cauca: Daza, 19 km. NW of Pasto, 2800 m, January 1922, W. Hopp 151 (Holotype destroyed at B), non Rolfe 1907. Etymology: From the Latin *scandens*, “scandent,” referring to the habit.

Stelis dazae Garay, name proposed to replace *S. scandens* Schltr. non Rolfe. Bot. Mus. Leaf. 27 (7–9): 202 (index). 1980, *Nom. inval.*

Etymology: Named for the community of Daza, where the plant was collected.

Plant small to medium in size, epiphytic, repent, ascending; rhizome slender, 0.5–1 cm between ramicauls; roots slender. Ramicauls ascending-erect, slender, 1–4 cm long, enclosed by a tubular sheath from below the middle and another at the base. *Leaf* erect, coriaceous, narrowly elliptical, acute, 2–5.5 cm long including an indistinct petiole, 0.4–0.6 cm wide when dry, gradually narrowed below into the petiole. *Inflorescence* single, 4–14 cm long, the raceme erect, subclax, distichous, many-flowered with many flowers open simultaneously; floral bracts acute, 1.5–3 mm long; pedicels 1 mm long; ovary 0.5 mm long; the peduncle 1–2 cm long, from a node below the apex of the ramicaul; flowers yellow; *sepals* glabrous, ovate, obtuse, 3-veined, dorsal sepal 1.8–2 mm long, 1.5–1.8 mm wide, the lateral sepals 1.5 mm long, 1.8 mm wide, connate below the middle; *petals* subcircular to transversely cuneate, obtuse, ca. 0.5 mm long, 0.6 mm wide, 1-veined, thin, shallowly concave, narrowly thickened on the apical margin; *lip* subquadrate, ca. 0.7 mm long, 0.6 mm wide, 0.5 mm deep, the apex broadly obtuse to truncate with a small, indistinct, triangular apiculum, concave below a shallowly cleft bar, the dorsum slightly convex, microscopically pubescent at the base, the base hinged to the base of the column; *column* stout, ca. 0.5 mm long and wide, the anther and the bilobed stigma apical.

Etymology: From the Greek *polyclados*, “many branched,” referring to the ramicauls branching from the rhizome.

Additional collections: COLOMBIA. Cauca: Volcán Puracé, road from La Plata to San Rafael, 3450–3600 m, 21 July 1948, B. Garcia-Barriga & J. Hawkes 12821 (AMES, COL); Páramo de Puracé, San Francisco, 3400 m, 23 July 1943, J. Cuatrecasas 14688 (AMES); Alto de Duende, 3300 m, 1–2 December 1944, J. Cuatrecasas 18818 (AMES); Volcán Puracé, Páramo de San Rafael, ca. 10000 ft., 23 July 1960, L. A. Garay 9 (AMES), C. Luer illustr. 21971. Valle del Cauca: El Cerrito, between Tenerife and Páramo de Azúcar, 3440 m, 25 March 1994, P. A. Silverstone-Sopkin 6659 (CUVC, MO).

Among the numerous variations of species with flowers basically similar to those of variations of *Stelis pusilla* Kunth, this species is distinguished by a larger, distinctly repent habit with longer, narrowly elliptical leaves. This species is usually reduced to the synonymy of *Stelis pusilla* Kunth, but it is recognized by larger, ascending, repent habit with usually slightly larger flowers.

Stelis popayanensis F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26(3–4): 448, 1899. TYPE: COLOMBIA. Cauca: near Corrales, central declivities near Popayán, 2000–3000 m, May and September without year, *F. C. Lehmann 6817* (Holotype: K), C. Luer illustr. 21999; *non Stelis popayanensis* (F.Lehm. & Kraenzl.) Pridgeon & W.Chase (2001), *nom. illeg.* Fig. 37.

Plant large, epiphytic, prolific-caespitose. Ramicauls single, becoming fasciculate at the apex of another ramicaul, erect, slender, 5–12 cm long, with a tubular sheath from below the middle, another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical, acute to subacute, 6–8.5 cm long including a petiole 1.5 cm long, the blade 1.2–2 cm wide in the dry state, cuneate below to the petiole. *Inflorescence* single; 12–18 cm long, the raceme erect, congested, distichous, many-flowered; floral bracts oblique, acute, 3–4 mm long; pedicels 3 mm long; ovary 2 mm long; peduncle ca. 5 cm long, subtended by a spathe ca. 1 cm long, from a node below the apex of the ramicaul; flowers light yellow to light yellow-green; *sepals* glabrous, ovate, 3-veined, connate below the middle, the dorsal sepal acute, 2.75 mm long, 2.25 mm wide, the lateral sepals obtuse, 2.3 mm long, 2 mm wide; *petals* broadly ovate, rounded at the apex, 1.3 mm long, 1.3 mm wide, concave, 1-veined, the apical margin thickened; *lip* transversely obovate, thin, concave, broadly rounded at the apex, 2 mm long, 2 mm wide, 1 mm deep, with an elevated, rounded, superficially channeled callus, extending from the base to the center of the lip, the base truncate, hinged to the base of the column; *column* stout, ca. 2 mm long and wide, the anther and the stigmatic lobes apical.

Etymology: Named for Popayán, the city near the site of collection.

Stelis popayanensis is one of two species that bears Lehmann's collection number 6817. The published description of *Stelis popayanensis* applies to the larger of the two, the smaller, answering the published description of *Stelis rhynchanthera* F.Lehm. & Kraenzl.

Stelis popayanensis is characterized by a prolific habit with one or several, erect ramicauls produced at the apex of a ramicaul with a leaf and inflorescence. The raceme is many-flowered, exceeding the acute, elliptical leaf. The flowers are relatively large with glabrous, three-veined, subacute to obtuse sepals; thin, single-veined petals; and a thin, subcircular, concave lip with a central, shallowly sulcate callus, suggesting a similarity to that of *Stelis major* Rchb.f.

The author explicitly excludes *Stelis dunstervilleorum* Foldats from the synonymy of *Stelis popayanensis*, as proposed by Duque (2008: 316).

Stelis rhomboidea Garay, Canad. J. Bot. 34: 353, 1956. TYPE: COLOMBIA. Cundinamarca: Cordillera Oriental, Páramo de Guasca, 2840 m, 2 June 1940, *J. Cuatrecasas 9465* (Holotype: US; Isotype: AMES), C. Luer illustr. 21245. Fig. 38.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2–6 cm long, with a tubular sheath

from near or below the middle and another sheath below at the base. *Leaf* erect, coriaceous, elliptical-ovate, acute, obtuse, petiolate, 2–4 cm long including the petiole ca. 1 cm long, the blade 1 cm wide dry, cuneate below into the petiole. *Inflorescence* an erect, lax, subflexuous, many-flowered raceme, 10–12 cm long including the peduncle 3–4 cm long, with many flowers open simultaneously, from a node below the apex of the ramicaul; floral bracts acute, 1.5 mm long; pedicels 1.5 mm long; ovary 1 mm long; flowers dark purple; *sepals* expanded, glabrous, narrowly ovate, acute, 3-veined, connate basally, the dorsal sepal 3 mm long, 1.3 mm wide, the lateral sepals 3 mm long, 1.6 mm wide; *petals* elliptical, concave, the apex broadly rounded, narrowly thickened on the margin, 0.8 mm long, 1.2 mm wide, 1-veined; *lip* rhombic, narrowly rounded at the tip, concave with a narrow, erect margin, with a low, elevated, longitudinal callus from the base, with the dorsum shallowly concave, probably a modified glenion, 1.5 mm long, 1.2 mm wide, 0.5 mm deep, the base truncate, attached to an obsolescent column-foot; *column* stout, 1.5 mm long and wide, with the anther and the bilobed stigma apical.

Etymology: From the Latin *rhomoideus*, “rhombic,” referring to shape of the lip.

Additional collections: COLOMBIA. Cundinamarca: Chocontá, Páramo del Sisga, 2600–2850 m, 5 Nov. 1960, *H. García-Barriga 17307* (AMES, COL), C; Luer illustr. 10386; Chocontá, El Sisga, alta de La Represas, 2700–2900 m, 14 January 1962, *H. García-Barriga 17369* (AMES, COL).

This small species with a loose, subflexuous raceme of purple flowers with widely spread, narrowly ovate, acute sepals and thin, single-veined petals is distinguished with a unique, rhombiform lip. A central, longitudinal callus descends from the base, suggesting a giant glenion, filling the center of the concave lip.

Stelis rhynchanthera F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26(3–4): 447, 1899. TYPE: COLOMBIA. Cauca: near Corrales, central declivities near Popayán, 2000–3000 m, May and September without year, *F. C. Lehmann 6817* (Holotype: K), C. Luer illustr. 21999. Fig. 39.

Plant small, epiphytic, loosely caespitose. Ramicauls erect, slender, 1.5–4 cm long, with a tubular sheath from below the middle, another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, elliptical, acute to subacute, 2.5–6.5 cm long including a petiole 1–1.5 cm long, the blade 0.8–1.5 cm wide in the dry state, narrowly cuneate below to the petiole. *Inflorescence* single; 8–12 cm long, the raceme erect, congested, distichous, many-flowered; floral bracts oblique, acute, 3 mm long; pedicels 3 mm long; ovary 2 mm long; peduncle 2–4 cm long, subtended by a spathe ca. 1 cm long, from a node below the apex of the ramicaul; flowers yellowish brown; *sepals* long-pubescent within, ovate, 3-veined, connate below the middle, the dorsal sepal acute, 2.5 mm long, 2.25 mm wide, the lateral sepals obtuse, 2.3 mm long, 2 mm wide; *petals* transversely ovate, broadly obtuse, 1 mm long, 1.5 mm wide, concave, 3-veined, the apical margin thickened; *lip* transversely ovate, subacute,

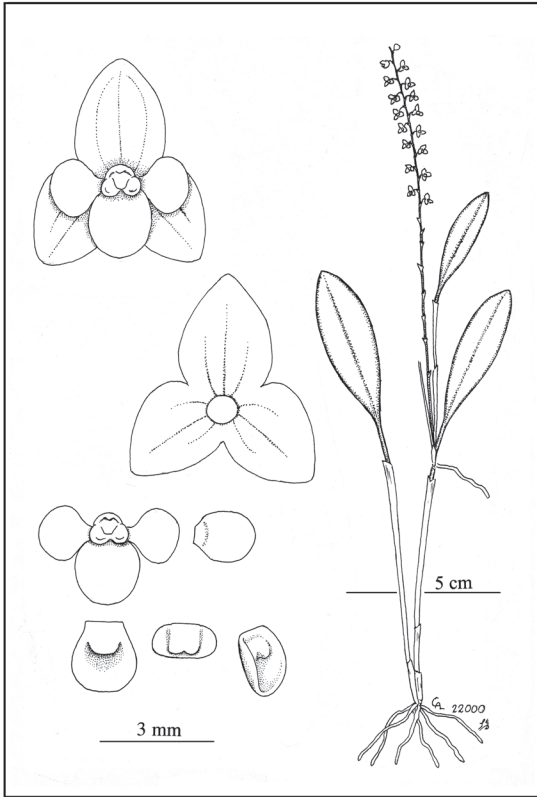


FIGURE 37. *Stelis popayanensis* FLehm. & Kraenzl.

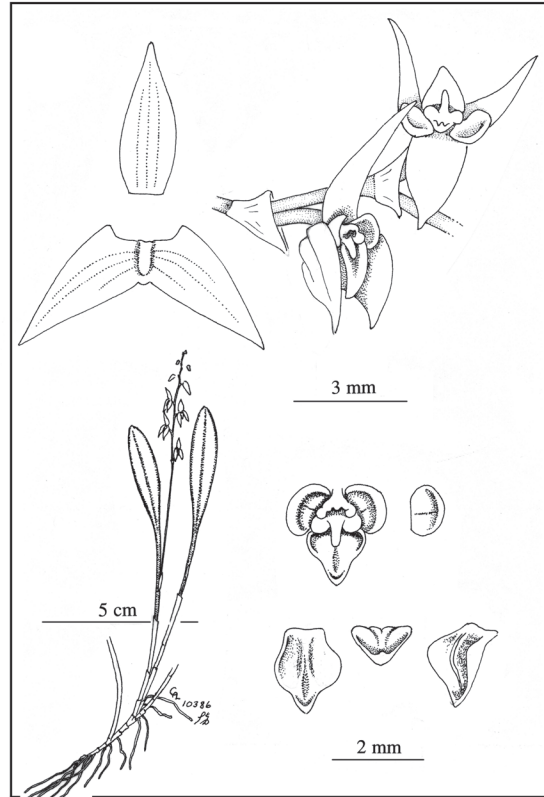


FIGURE 38. *Stelis rhomboidea* Garay

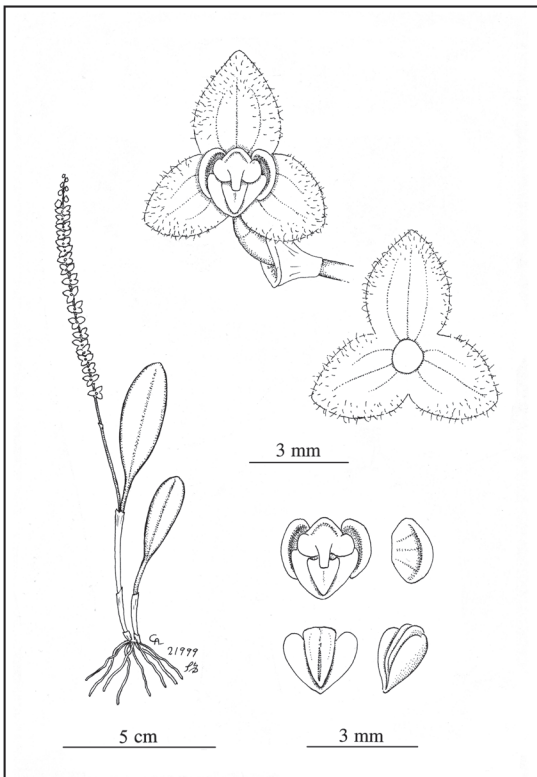


FIGURE 39. *Stelis rhynchanthera* FLehm. & Kraenzl.

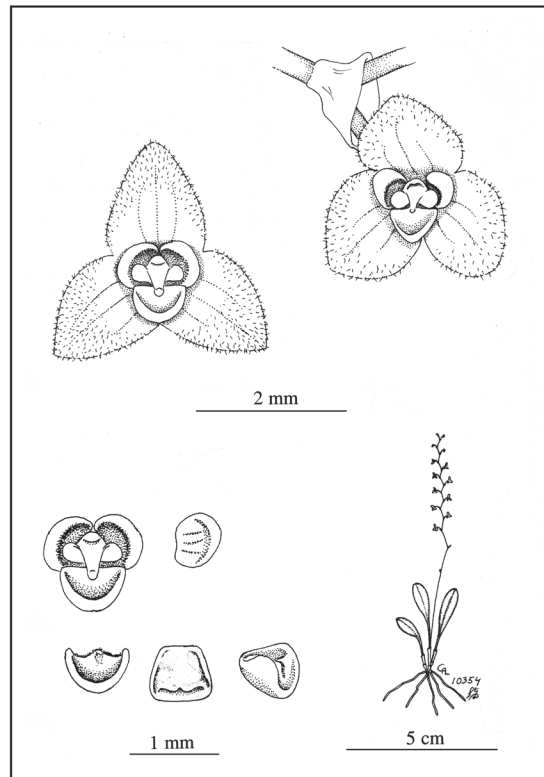


FIGURE 40. *Stelis schmidtchenii* Schltr.

2 mm long, 2.3 mm wide, 1 mm deep, concave on both rounded sides of an elevated, central, triangular, narrowly sulcate callus, extending from a broad base to an acute tip nearly to the tip of the lip, the dorsum elevated with the protruding callus, the base truncate, hinged to the base of the column; *column* stout, ca. 2 mm long and wide, the anther and the stigmatic lobes apical, an anther cap not seen.

Etymology: From the Greek *rhynchanthera*, “beaked anther,” referring to the shape of the anther-cap.

Stelis rhynchanthera is one of two species that bears Lehmann’s collection number 6817. The published description of *Stelis rhynchanthera* applies to the smaller of the two, the larger, answering the published description of *Stelis popayanensis*.

Stelis rhynchanthera is characterized by a small, caespitose habit; a many-flowered raceme that exceeds an acute, elliptical leaf; relatively large flowers with long-pubescent, three-veined sepals; three-veined petals; and a concave lip with a thick, acute, triangular callus that extends from the base to the tip.

Stelis schmidtchenii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 157, 1924. TYPE: COLOMBIA. Antioquia: without data, *G. Schmidtchen s.n.* (Holotype lost at B), Neotype here designated: COLOMBIA. Antioquia: Urrao, Pabón, coll. by M. Zapata, fl. in cult. at Colomborquideas, 23 May 1995, *C. Luer 17593* (MO). Fig. 40–42.

Plant small, epiphytic, densely caespitose, roots slender. Ramicauls erect, slender, 5–20 mm long, with a close, tubular sheath above the middle and another sheath below at the base. *Leaf* erect, coriaceous, elliptical to narrowly elliptical, acute, petiolate, 2–5 cm long including a petiole 5–10 mm long, the blade 3–5 mm wide in dry state, cuneate below into the petiole. *Inflorescence* 1–3; 4–30 cm long, the raceme, flexuous, lax, distichous, successively many-flowered, with 2–8 flowers open simultaneously; floral bracts oblique, acute, 0.6–1.5 mm long; pedicels 0.6–1.5 mm long; ovary 0.5 mm long; the peduncle 2–5 cm long, from a node from near the apex of the ramicaul; flowers purple with white or rose pubescence; *sepals* expanded, pubescent within, ovate, subacute, 3-veined, connate basally, 1.3–1.5 mm long, 1–1.3 mm wide; *petals* purple, subcircular, concave, thickened on the rounded apex, 0.5 mm long, 0.8 mm wide, 3-veined; *lip* purple, subquadrate, 0.4–0.5 mm long, 0.4–0.5 mm wide, 0.3–0.5 mm deep, concave below a shallowly sulcate bar, the apex rounded, the dorsum slightly convex, the base truncate, hinged to the base of the column; *column* clavate, ca. 0.5 mm wide and long, the anther and the bilobed stigma apical.

Etymology: Named for G. Schmidtchen, who collected the specimen described by Schlechter.

Additional collections: COLOMBIA. Antioquia: Sonsón, Quebrada Oscura, between La Ceja and Sonsón, 2250 m, 29 April 1983, *C. Luer, J. Luer & R. Escobar 8906* (SEL); Frontino, above Nutibara, Alto de Cuevas, 2050 m, 4 May 1983, *C. Luer, J. Luer & R. Escobar 9000* (SEL); Cocorná, El Viaha, along Río Cocorná, 1900 m, 24 April 1983 m, *C. Luer, J. Luer & R. Escobar 8818* (SEL);

NE of Santa Rosa, above the Miraflores Dam, 2050 m, 13 May 1985, *C. Luer & R. Escobar 11375* (MO). Norte de Santander: Alto de Santa Inez, 2150 m, 13 May 1984, *C. Luer, J. Luer & R. Escobar 10353, 10354* (MO).

Stelis schmidtchenii is found frequently in the northern parts of the Central and Eastern Cordilleras at relatively high altitudes, and in Venezuela at lower altitudes. With narrowly elliptical leaves and shorter ramicauls this caespitose, little species is vegetatively variable. One to three delicate, hair-like, flexuous racemes of tiny flowers are produced slowly and successively in many-flowered racemes with several flowers open simultaneously toward the tip. Great lengths accumulate in long-cultivated plants. The sepals are ovate, three-veined, and purple with a white pubescence. The petals are thick and three-veined, and the lip is a simple type A.

Stelis stenophylla Rchb.f., Bonplandia 3: 70, 1855. TYPE: COLOMBIA. Norte de Santander: Ocaña, Agua de La Virgen, Enllanada, 3–6000 ft., *H. Wagener s.n.* (Holotype: W). Fig. 43.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4–5.5 cm long, enclosed by a tubular sheath from below the middle, and another 1–2 sheaths below and at the base. *Leaf* erect, coriaceous, narrowly elliptical to linear, acute, 4.5–5.5 cm long including a petiole 1.5 mm long, the blade 0.5–0.6 mm wide in the dry state, gradually narrowed below to the petiole. *Inflorescence* single; 5–6 cm long, the raceme erect, loose, distichous; floral bracts oblique, acute, 2 mm long; pedicel 1 mm long; ovary 1 mm long; the peduncle ca. 2 cm long, with a spathe 3–4 mm long, from a node near the apex of the ramicaul; flowers greenish white; *sepals* antrorse, glabrous, fleshy, concave, ovate, obtuse, 3-veined, connate near the base, the dorsal sepal 3.5 mm long, 2.2 mm wide, the lateral sepals 2.5 mm long, 2.5 mm wide; *petals* thin, transversely ovate, 0.7 mm long, 1 mm wide, concave below a broad, thickened margin, 3-veined; *lip* bilobed, the lateral lobes ovate, 0.8 mm long, 0.5 mm wide, concave below the bar, 0.3–0.4 mm deep, the dorsum narrow, smooth, convex, shallowly concave below the bar, the apex obtuse, the dorsum smooth, slightly convex between the lateral lobes, the base truncate, hinged to the column-foot; *column* stout, ca. 0.6 mm long and wide, the anther and stigmatic lobes apical.

Etymology: From the Greek *stenophylla*, “narrow-leaved,” referring to the foliage.

Additional specimens examined: COLOMBIA. Norte de Santander: forest near Agua de La Virgen, W of Ocaña, 1650 m, 4 May 1982, *C. Luer, J. Luer & R. Escobar 7696* (SEL).

This little, caespitose species is characterized by a loose raceme about as long as nearly linear leaves; glabrous, obtuse, concave and antrorse sepals; and thin, three-veined petals. The most distinctive lip is shallow and concave below the bar between lateral lobes and the obtuse apex.

The author explicitly excludes *Stelis tachirensis* Foldats from the synonymy of *Stelis stenophylla*, as proposed by Duque (2008: 372).

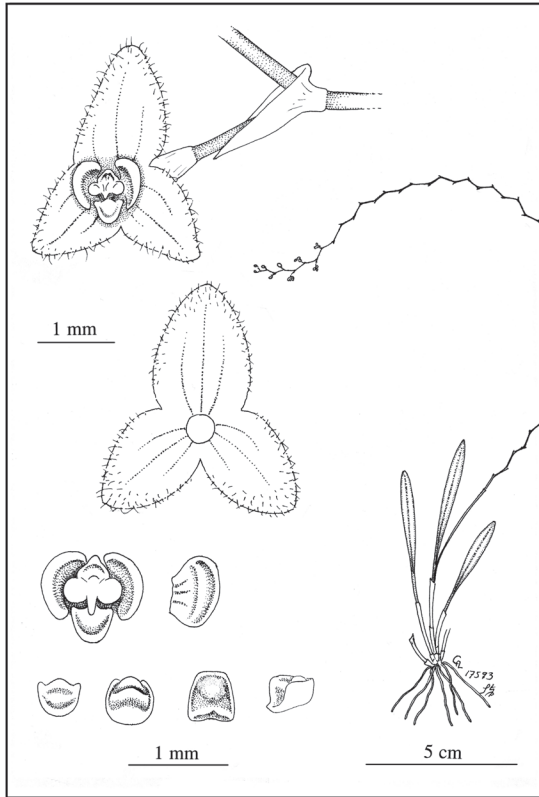


FIGURE 41. *Stelis schmidtchenii* Schltr.

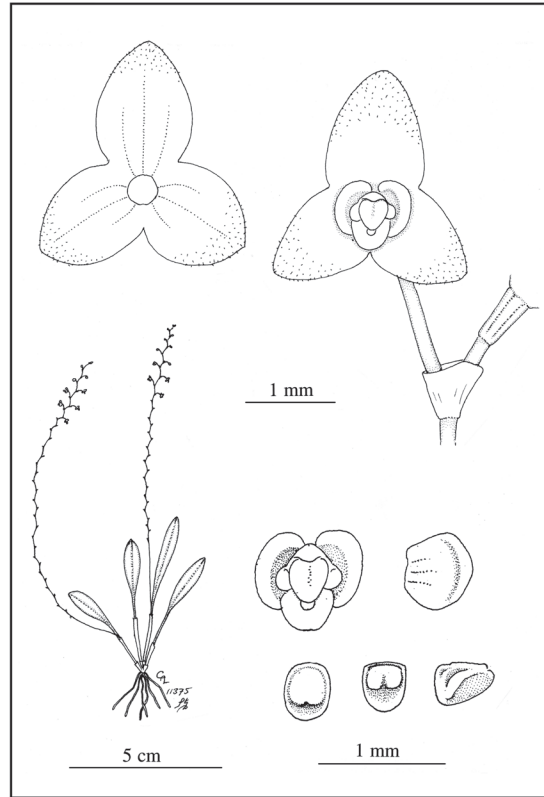


FIGURE 42. *Stelis schmidtchenii* Schltr.

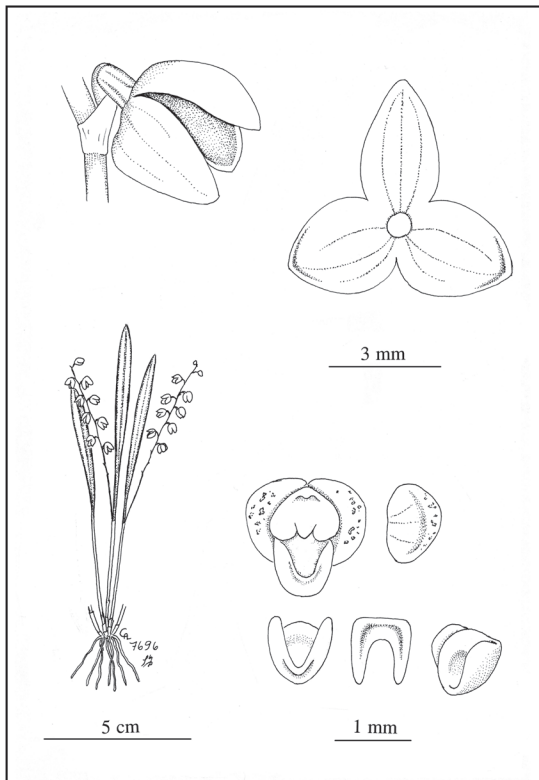


FIGURE 43. *Stelis stenophylla* Rehb.f.

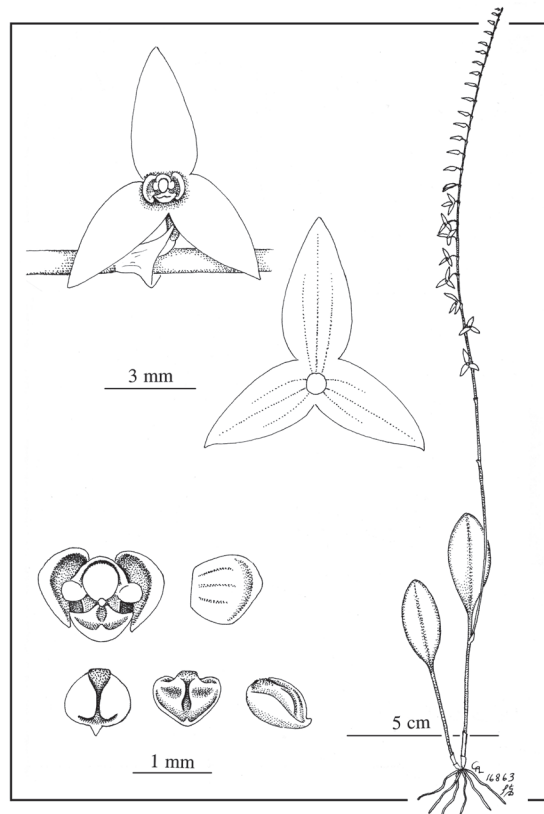


FIGURE 44. *Stelis vicaria* Luer & R.Escobar

Stelis vicaria Luer & R. Escobar, *sp. nov.* TYPE: COLOMBIA. Cauca: collected near Pasto, collector unknown, fl. in cult. at Colomborquídeas, 16 May 1993, C. Luer 16863 (Holotype: SEL). Fig. 44.

The flowers of this species are similar to those of *Stelis furfuracea* with narrowly ovate, acute sepals, but the sepals are free of the irregular, microscopic particles; the petals are broadly obovate with an subacute, thickened tip; and the bar of the lip is incised to a cellular callus above the base.

Plant small to medium-sized, epiphytic, caespitose, shortly ascending, roots slender. Ramicauls erect, slender, 3–4.5 cm long, with a tubular sheath from below the middle and 2 tubular sheaths below at the base. *Leaf* erect, coriaceous, elliptical, subacute to obtuse, 3–4.5 cm long including a petiole 1.5 cm long, the blade 1–1.3 cm wide in dry state, cuneate below into the petiole. *Inflorescence* single; to 23 cm long, the raceme erect, congested, secund, many-flowered, with many flowers open simultaneously; floral bracts oblique, acute, 2 mm long; pedicels 1 mm long; ovary 1.5 mm long; the peduncle 7–10 cm long, with a thin spathe 5 mm, from a node below the apex of the ramicaul; *sepals* light green above the middle, purple below the middle, glabrous, expanded, narrowly ovate, acute, connate basally, 3-veined, the dorsal sepal 5 mm long, 2.5 mm wide, the lateral sepals oblique, 4 mm long, 2 mm wide; *petals* rose, obovate, concave, slightly thickened at the rounded apex, 1 mm long, 1.2

mm wide, 3-veined; *lip* rose, subquadrate, 0.8 mm long, 1 mm wide, 0.8 mm deep, concave below an incised bar, the apex broadly acuminate, acute, without thickened margins, the dorsum cleft to a minutely pubescent, basal callus, the base truncate, hinged to the base of the column; *column* clavate, 1.2 mm wide, with the anther and the bilobed stigma apical.

Etymology: From the Latin *vicarius*, “substituted,” referring to an illustration used for *Stelis furfuracea*.

Additional specimen examined: COLOMBIA. Norte de Santander: valley of Río Chitagá, 3140–3500 m, 24 September 1944, H. St. John 20782 (AMES, US).

A species with a flower similar to the flower used to illustrate *Stelis furfuracea* in Garay (1980), is described herewith as *Stelis vicaria*. Unfortunately, nothing is known about the plant from which the flower illustrated by Elmer Smith was obtained. Vegetatively, the leaves are proportionately shorter and wider than those of *S. furfuracea* and the apex is broadly obtuse, instead of acute. The peduncle is distinctly longer than the leaves, instead of being shorter.

The sepals of *Stelis vicaria* are similarly narrowly ovate, but totally free of the minute particles, believed to be a kind of crystal, that are seen in the sepals of *S. furfuracea*. The petals are merely obovate and obtuse, instead of thick and triangular at the apex. The bar and dorsum of the lip are cleft to a minutely pubescent callus above the base.

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APPENDIX

In Luer (2017a), the following two names were not validly published because the holotype citation in each case was ambiguous.

The relevant species names are herewith validated:
Stelis frondifera Luer & R. Escobar, *sp. nov.* TYPE: COLOMBIA. Antioquia: Yarumal, Ratón Pelado, above of Yarumal, 2650 m, 1 May 1984, C. Luer, J. Luer & Rodrigo Escobar 10051 (Holotype: SEL). Paratype: COLOMBIA. Antioquia: Yarumal, Santa Rosa de Osa, above Estadero Manicomio, 2580 M, 14 March 1989, C. Luer, J. Luer, S. Dalström & W. Teague 14144 (SEL).

Synonym: “*Stelis frondifera* Luer & R. Escobar, Harvard Pap. Bot. 22, No. 1: 44, Fig. 29–30. 2017,” *nom. invalid.*

Stelis imperiosa Luer & R. Escobar, *sp. nov.* TYPE: COLOMBIA. Cauca: Popayán, Páramo de las Barbillas, SE of Popayán, 3150 m, 13 November 1982, C. Luer & R. Escobar 8380 (Holotype: SEL). Paratype: COLOMBIA. Cauca: SE of Popayán, 3150 m, 13 November 1982, C. Luer & R. Escobar 8379 (SEL).

Synonym: “*Stelis imperialis* Luer & R. Escobar [as “*imperialis*”], Harvard Pap. Bot. 22, No. 1: 46, Fig. 35–36. 2017,” *nom. inval.*