

New species of *Passiflora* subg. *Plectostemma* and subg. *Tacsonia* (Passifloraceae)

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Jørgensen, P. M., Holm-Nielsen, L. B. & Lawesson, J. E. 1987. New species of *Passiflora* subg. *Plectostemma* and subg. *Tacsonia* (Passifloraceae) – Nord. J. Bot. 7: 127–133. Copenhagen. ISSN 0107-055X.

Five new species of *Passiflora* subgenera *Plectostemma* and *Tacsonia* from Ecuador are described, viz. *P. discophora*, *P. monadelpha*, *P. subpurpurea*, *P. hirtiflora* and *P. sanctaebarae*. Section *Discophora* of subg. *Plectostemma* is proposed.

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Introduction

A revision of *Passiflora* L. for the "Flora of Ecuador" Holm-Nielsen et al. (in print) has revealed five new species, viz. *P. discophora*, *P. monadelpha*, *P. subpurpurea*, *P. hirtiflora* and *P. sanctaebarae*. The total number of Ecuadorean *Passiflora* species is 76.

Killip (1948) included 7 sections in subg. *Plectostemma* Mast., based mainly on the sections and subsections by Masters (1871) and Harms (1925). Holm-Nielsen and Jørgensen (1986) reduced subg. *Tryphostemmatoides* (Harms) Killip to a section and the new section *Discophora* is added to subg. *Plectostemma*. Of the present 9 sections of subg. *Plectostemma*, 7 occur in Ecuador, viz. *Cieca* (Medic.) Mast., *Decaloba* (DC.) Mast., *Discophora*, *Pseudodysosmia* (Harms) Killip, *Pseudogranadilla* Killip, *Tryphostemmatoides* and *Xerogona* (Raf.) Killip.

New taxa

Passiflora discophora P. M. Jørgensen & Lawesson, sp. nov.

Type: Ecuador, Los Ríos: km 45 Sto. Domingo – Quevedo, km 12 Patricia Pilar – 24 de Mayo, 23 May 1981, Dodson et al. 11077 (MO holotype) and km 56 Quevedo. – Sto. Domingo rd., Rio Palenque Science Center, 150–220 m, 23 Apr. 1978, Dodson 6910 (MO paratype).

Liana, glabra. Folia 3–6 × 1–3 cm; petiolus 6–13 mm, biglandibus; lamina oblonga ad ovata, membranacea ad subcoriaceam, obtusa ad retusam. Disci 0.5–3 mm, cirris, fissilibus in 2–4 desinentibus in discos pulvinos adhaerentes, persistentes. Pedunculus 7–15 mm, axillaris. Flores 35–40 mm lati; sepala 24 × 9 mm; petala 17 × 5 mm; corona triseriata; operculum plicatum, margine denticulata; limen cupuliformis membranaceus; androgynophorum 9–11 mm, obstipum, ovarium ovoideum, glabrum. Fructus 3.8 × 3.2 cm subglobosi; semina 4 × 3 mm, ovata, sulcatis glabris transverse. – Fig. 1.

Liana, glabrous; stem terete, striate; older woody stems 1 cm in diameter, bark red brown. Leaves 3–6 × 1–3 cm; stipules 1 mm, setaceous, deciduous; petiole 6–13 mm, glands 2, urceolate-circular, sessile at junction to blade; blade oblong to ovate, membranous to subcoriaceous, obtuse to retuse; juvenile blades 10 × 9–11 mm, orbicular, retuse, membranous. Discs 0.5–3 mm, tendrils split in 2–4, ending in adhering cushionlike disks, persistent. Peduncle 7–15 mm, axillary, solitary or in pairs, occasionally cauliflorous; bracts 0.5 mm, setaceous. Flowers 35–40 mm wide, sepals 24 × 9 mm, oblong ovate, acute; petals 17 × 5 mm, oblong ovate, acute; corona triseriate, orange-yellow base, apex white, outer filaments 7–18 mm, filiform, middle filaments 3–4 mm, filiform, inner filaments 1.5–6 mm, filiform; operculum 2.5 mm, erect, non plicate but rough, margin dentic-

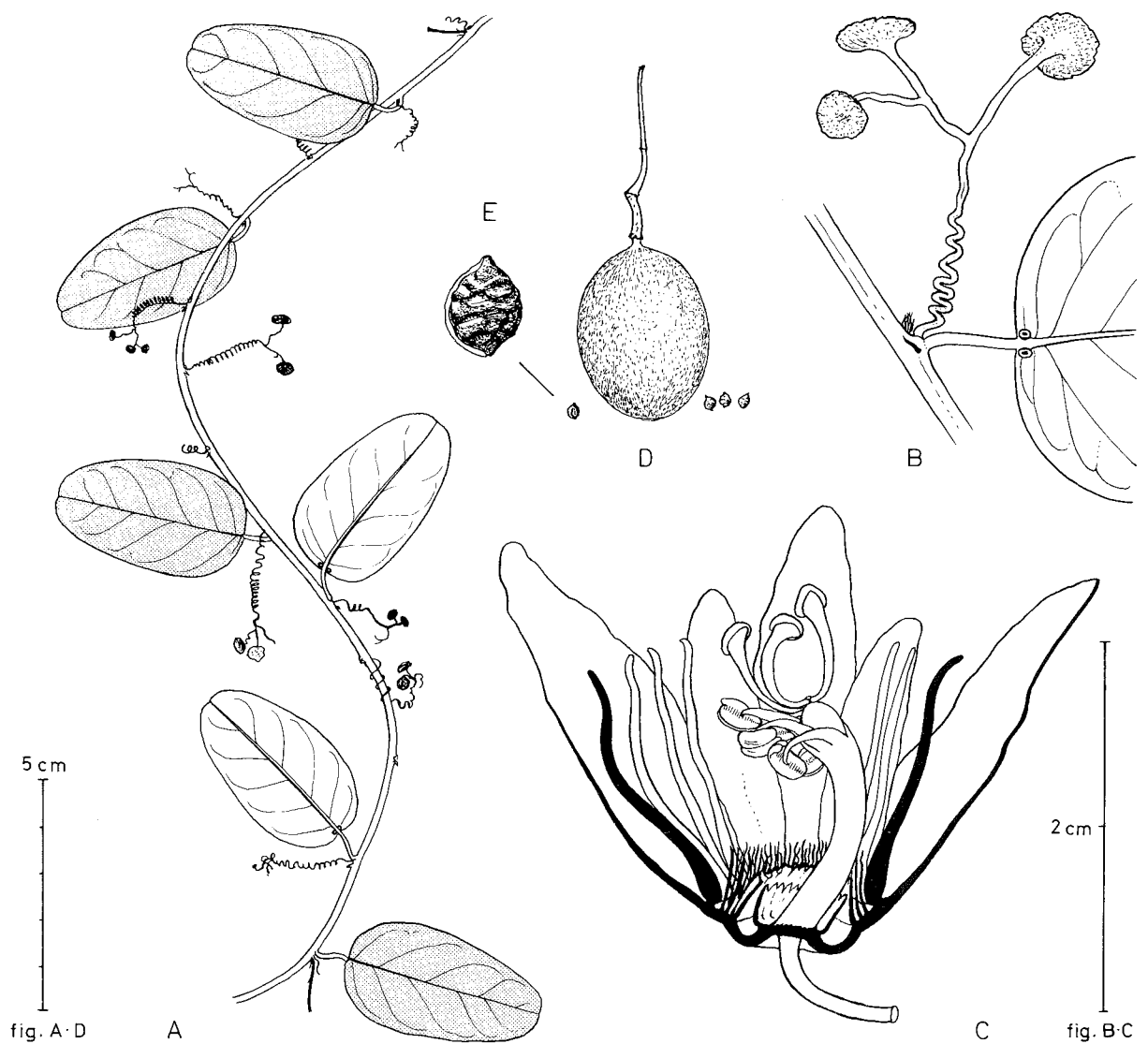


Fig. 1. *Passiflora discophora* (Dodson 11077) A. Habitus. – B. Adhering discs. – C. Longitudinal section of flower (Dodson 6910). – D. Fruit. – E. Seed.

ulate; nectar ring annular; limen cupuliform, membranous, margin denticulate; androgynophore 9–11 mm, bended; ovary ovoid, glabrous; styles green. Fruits 3.8 × 3.2 cm, subglobose, bright red; seeds 4 × 3 mm, ovate, transversely smooth sulcate, black. – Fig. 1.

Additional specimens examined: Ecuador. Los Ríos: Río Palenque Science Center, 150–220 m, Dodson 5447 (MO, US); Río Palenque Science Center, 150–220 m, Dodson & Gentry 9903 (MO). Los Ríos-Pichincha: 45 km Sto. Domingo-Quevedo, Patricia Pilar, 600 m, Dodson & Gentry 10299 (MO).

Notes: Dodson & Gentry 10299 and Dodson 5447, cited as *P. tryphostemmatoides* Harms (Dodson & Gentry 1978) are sterile individuals of *P. discophora*.

This endemic species, from the coastal Ecuadorean lowland is found in closed rainforest.

The adhering discs, after which this species is named, are borne on the tightly curled tendrils. They are not exclusively found in *P. discophora*, but are occasionally present in *P. tryphostemmatoides*. This could indicate a close relationship between the two species, but apart from the clear difference in leaf shape *P. discophora* also deviates in several floral characters, axillary placed flowers, bended androgynophore, transverse sulcate seeds and the triseriate corona. This combination of characters are so deviating from all other known species in sect. *Plectostemma* that we find it sufficient to establish a new section.

Passiflora subg. *Plectostemma* section *Discophora* P. M. Jørgensen & Lawesson, sect. nov.

Sectio cirris fissilibus in 2–4 disinentibus in discos pulvinos adhaerentes, persistentes, androgynophoro obstituto, operculum erectum haud plicatum, limen cupuliformis membranaceus con margine denticulatus.

Type species: *Passiflora discophora* P. M. Jørgensen & Lawesson.

Passiflora monadelpha P. M. Jørgensen & Holm-Nielsen, sp. nov.

Type: Ecuador, Napo: km 55 Salcedo (San Miguel)-Napo rd., Río Tena, 2995 m, 4 Feb. 1977, Boeke 893 (AAU holotype).

Liana, villosa. Folia 6–10.5 × 5–7 cm; petiolus 0.9–1.5 cm, biglandibus; lamina ovata ad oblongam, integra ad subtrilobam, triplinervi, acuta ad subacutam, basi truncata ad cordatam. Inflorescentiae axillares, binatim, cymae, 2–6 floribus; pedunculi villosi. Flores 30–40 mm lati; sepala 15–17 × 6 mm; petala 13 × 7 mm; corona biseriatae; operculum plicatum, margine fimbriata; limen annularis; gynophorum 1 mm, stamina leviter excedentia ovarium; ovarium ovoideum, vellutinum. Fructus ignotus. – Fig. 2.

Liana; stem striate, subterete, villosus. Leaves 6–10.5 × 5–7 cm; stipules 5–7 mm, linear, falcate, pilose; petiole 0.9–1.5 cm, 2 sessile scarlike glands at base, villosus; blade ovate to oblong ovate, entire to subtrilobed, 3-nerved, margin revolute, acute to subacute, base trunc-

cate to cordate, glabrous to puberulous above, densely tomentose below. Inflorescences axillary, in pairs, cymose, 2–6 flowered; peduncles villous; bracts subulate, villous. Flower 30–40 mm wide; sepals 15–17 × 6 mm, oblong-ovate, keeled, corniculate, tomentose and pale green outside, glabrous and white inside; petals 13 × 7 mm, oblong-ovate, white; corona biseriate, outer filaments 2–3 mm, filiform, upper 1/4 falcate and dilated, inner filaments 1–2 mm, filiform, minute capitate; operculum plicate, margin fimbriate; limen annular; gynophore 1 mm; stamens coherent consealing and slightly exceeding the ovary; ovary ovoid, white velutinous; styles coherent until 4–5 mm above the ovary. Fruit unknown. – Fig. 2.

Additional specimen examined: Ecuador, Morona-Santiago: Between Tambo Consuela and Tambo Cerro Negro on trail from Sevilla de Oro to Mendez, 2700–3200 m, Camp E-1608 (S).

Notes: The locality given on the holotype Boeke 893 is not sufficiently accurate, as km 55 Salcedo-Napo road, does not reach Río Tena, which originates somewhere between 1500 and 2000 m, we believe that the river in question must be Río Anatenório.

The petiolar glands, represented by scarlike glandular areas at base of the petiole, are difficult to recognize as they are completely covered by the indument. The closely related *P. ursina* Killip & Cuatr. has a similar arrangement. *P. monadelpha*, however, deviates by its larger white velutinous ovary, the partly united styles and by having united corona filaments, which in juvenile plants completely surround and exceed the ovary.

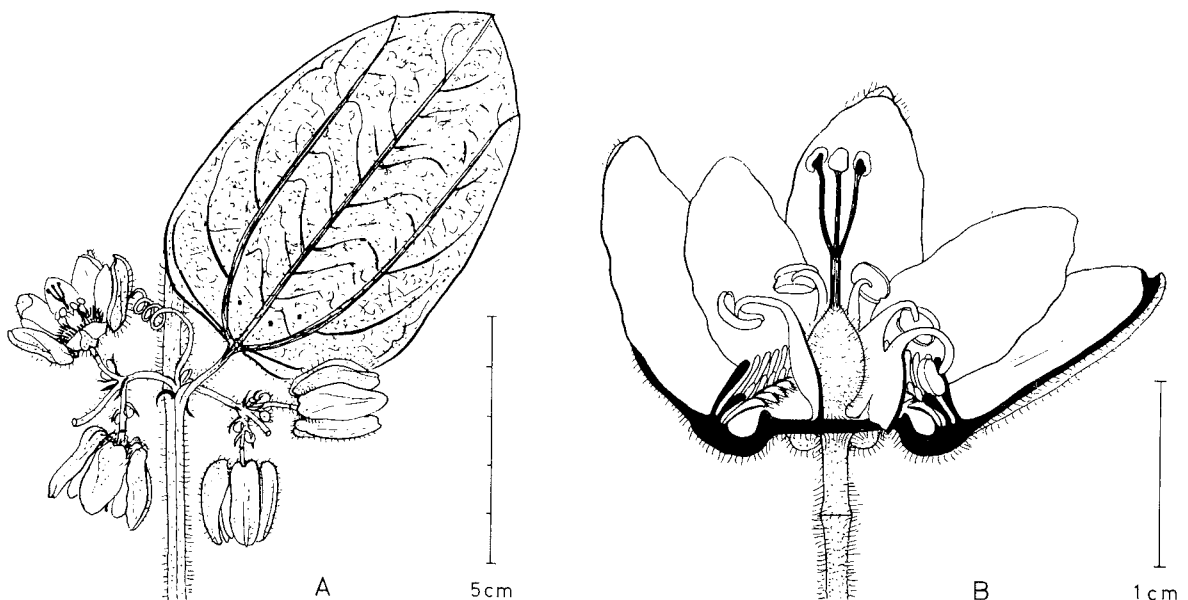


Fig. 2. *Passiflora monadelpha* (Boeke 893) A. Leaf and inflorescence. – B. Longitudinal section of flower.

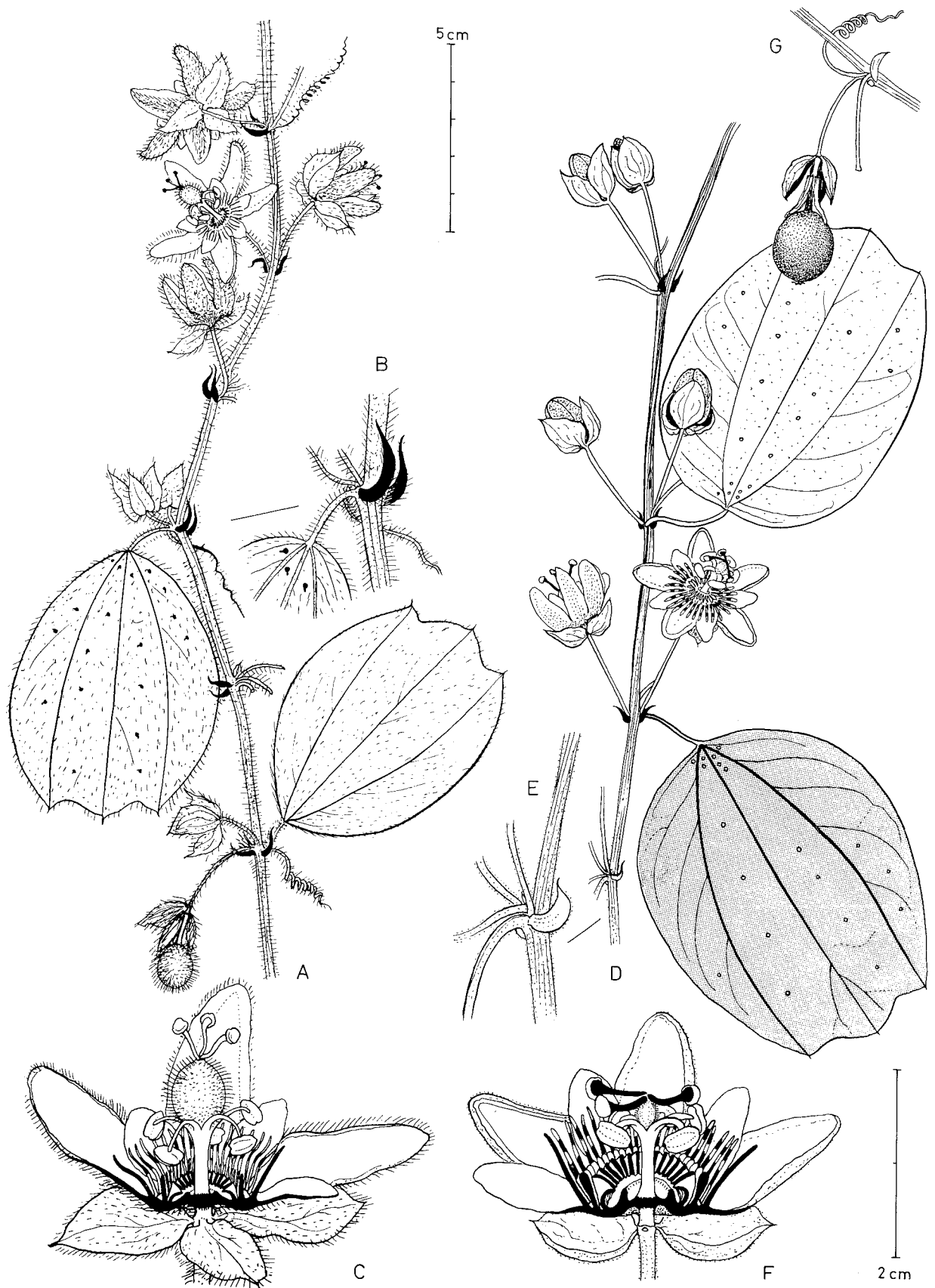


Fig. 3. *Passiflora hirtiflora* (Asplund 8839) A. Habitus. - B. Axil. - C. Longitudinal section of flower. - *P. subpurpurea* (Holm-Nielsen 23058) D. Habitus. - E. Axille. - F. Longitudinal of flower. - G. Fruit.

P. monadelpha belongs to sect. *Cieca* of subg. *Plectostemma* close to *P. sodiroi* Harms, *P. apoda* Harms and *P. ursina* Killip & Cuatrec., and is named after the united filaments.

***Passiflora subpurpurea* P. M. Jørgensen & Holm-Nielsen, sp. nov.**

Type: Babahoyo – Guaranda rd.: above Balzapamba, 200 m, (79°10'W 1°48'S), 21 Apr. 1980, Holm-Nielsen et al. 23058 (AAU holotype, AAU isotype; duplicates to be distributed).

Liane, pubescentia. Folia 6.3–11.8 × 4.3–9.2 cm; petiolus 2–2.9 cm, sine glandibus, tomentosus; lamina ovata, triplinervi, triplilobis, lobo medio longissimo, apicibus mucronatibus, basi truncata. Pedunculus 22–30 mm, axillaris, binatim. Flores 35–40 mm lati; sepala 19

× 8 mm; petala 14 × 5 mm; corona biseriatae; operculum plicatum, margine integro, virello; limen annularis; androgynophorum 8 mm; ovarium glabrum. Fructus 1.7–2.1 × 1.4–1.8 cm, subglobosus; semina 3 × 2 mm, 5–6 sulcatis transversalibus rogatis. – Fig. 3 D–G.

Liana, stem flattened, striate to grooved, pubescent. Leaves 6.3–11.8 × 4.3–9.2 cm; stipules 6–12 × 2 mm, lanceolate, falcate; petiole 2–2.9 cm, glandless, tomentose; blade ovate, 3-nerved, 3-lobed, middle lobe the longest, apices mucronate, base truncate, above glabrescent, below tomentose and purple. Peduncle 22–30 mm, axillary, in pairs; bracts 10–15 × 5–12 mm, broad ovate, all 3 placed 2–4 mm below the flower, yellowish brown. Flowers 35–40 mm wide; sepals 19 × 8 mm, oblong ovate, obtuse, glabrescent outside, yellow outside, white inside; petals 14 × 5 mm, lanceolate, obtuse, white occasionally slightly purple outside; corona bise-

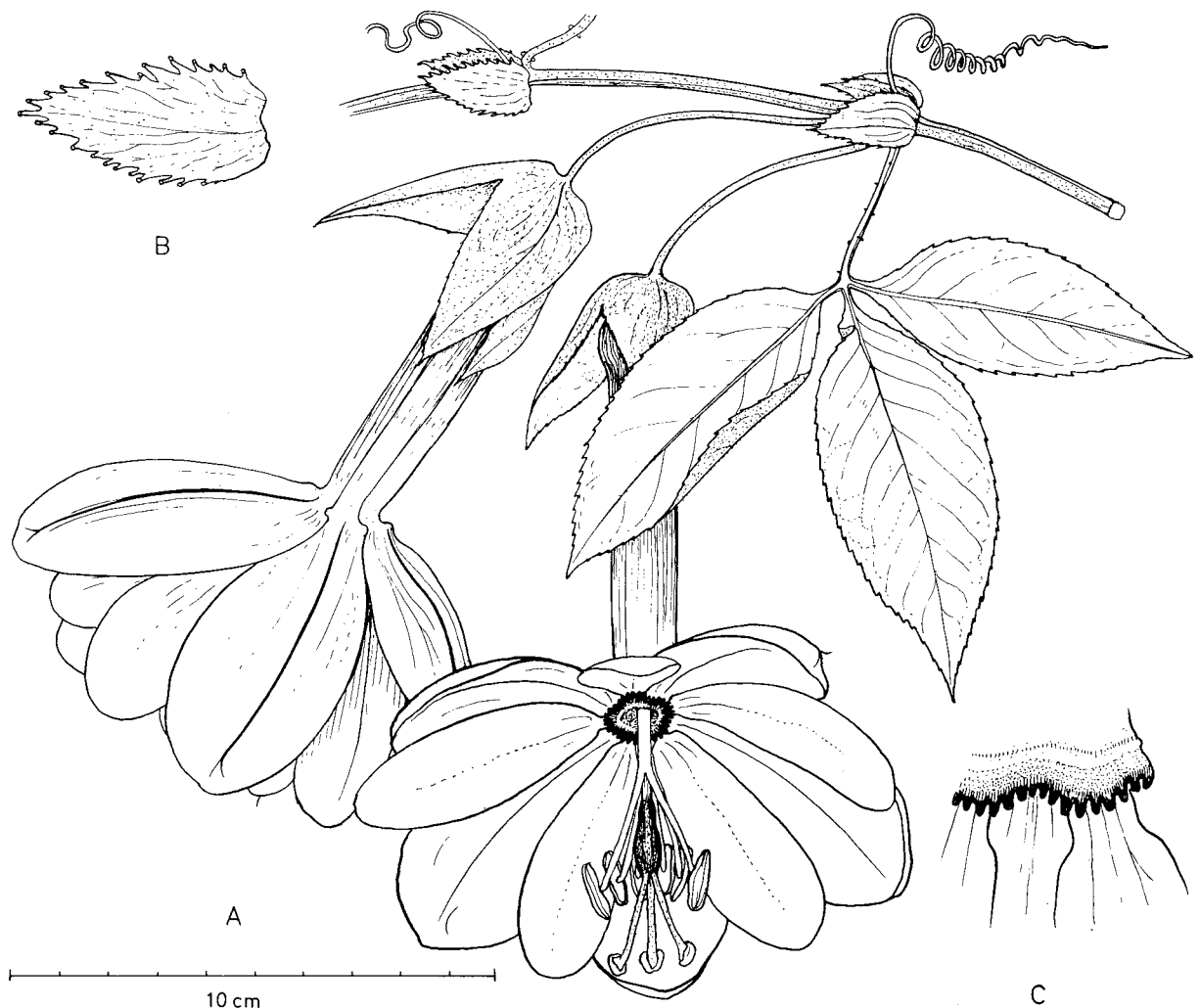


Fig. 4. *Passiflora sanctae-barbarae* (Harling et Andersson 12445). A. Habit. – B. Stipule. – C. Detail of corona.

riate, outer filaments 10 mm, filiform, white with purple bands, inner filaments 4 mm, filiform, capitate, white; limen 1.5 mm high, annular, fleshy membrane; operculum plicate, margin entire, greenish; androgynophore 8 mm; ovary glabrous to glabrescent. Fruit 1.7–2.1 × 1.4–1.8 cm, subglobose; seeds 3 × 2 mm, 5–6 transverse rugulose sulcate. – Fig. 3 D–G.

Additional specimen examined: Ecuador, Chimborazo: Canon of Rio Chanchan, 5 km N of Huigra, 1660–2000 m, Camp E-3399 (AAU, S).

Notes: *Passiflora subpurpurea* belongs to the heterogenous section *Pseudogranadilla* (Killip 1938) of subg. *Plectostemma*. *P. subpurpurea* derives from *P. hirtiflora*, *P. porphyretica* Mast. and *P. kalbreyeri* Mast. by being a sparsely pubescent plant, from *P. hirtiflora* and *P. kalbreyeri* in the size of the bracts, and from *P. porphyretica* by having dissimilar bracts and stipules. Furthermore the outer corona filaments of *P. hirtiflora*, *P. kalbreyeri* and *P. menispermea* Triana & Planch. are of different shape or size and the leaves of *P. menispermea* are broader than long. *P. subpurpurea* deviates from *P. indecora* Kunth in HBK and *P. hirtiflora* by the glabrous to glabrescent ovary and by being purple on the lower surface of the leaves.

***Passiflora hirtiflora* P. M. Jørgensen & Holm-Nielsen, sp. nov.**

Type: Ecuador, Napo: between Archidona and Jondache, 25 Sep. 1939, Asplund 8839 (S).

Liane, hirsuta. Folia 4.5–7.5 × 3–5 cm; petiolus 1.5–1.8 cm, sine glandibus; lamina elliptica, triplinervi, ocellata, trilobis, lobis acutis-caudatis. Pedunculi 20–26 mm. Flores 45 mm lati; sepala 20 × 7 mm; petala 10 × 4–5 mm; corona biseriatae; operculum plicatum, incurvatum; limen annularis; androgynophorum 7–8 mm; ovarium laneum. Fructus globosus ad subglobosum, laneum. – Fig. 3 A–C.

Liana, white hirsute; stem angulate. Leaves 4.5–7.5 × 3–5 cm; stipules 8–9 × 1.5 mm, linear falcate; petiole 1.5–1.8 cm, glandless; blade elliptic, 3-nerved, ocellate, 3-lobed, lobes acute-caudate, strigose above, pilous below. Peduncle 2–2.6 cm; bracts 16–20 × 9–13 mm, ovate to broad ovate, densely pilose, margin entire or somewhat undulated. Flowers 45 mm wide; sepals 20 × 7 mm, oblong-ovate, obtuse, outside densely hirsute; petals 10 × 4–5 mm, linear obtuse; corona biseriatae, outer filaments 4 mm, narrow ligulate, falcate, upper 1/3 dilated, inner filaments 3.5–4 mm, filiform, minute capitate; operculum plicate, incurved; limen annular, weakly developed; androgynophore 7–8 mm; ovary woolly. Fruit globose to subglobose, woolly. – Fig. 3 A–C.

Notes: *Passiflora hirtiflora* is a highly characteristic species, which deviates from the two other densely pubescent species of sect. *Pseudogranadilla* subg. *Plectostemma*, by the elliptic leaves, entire large bracts and by the indumentum of the sepals.

***Passiflora sanctae-barbarae* Holm-Nielsen & P. M. Jørgensen, sp. nov.**

Type: Ecuador, Carchi, 5 km E of Santa Barbara, 2700 m, Hartling & Andersson (GB holotype; AAU isotype).

Liane, pubescentia. Folia 12–25 × 8–13 cm; petiolus 3–4.5 cm, 6–8 glandibus; lamina trifoliata, acuminata, basi attenuatam. Flores 11–12 cm lati; hypanthium 8–8.5 cm longis; sepala 5–6 × 2.5–3.2 cm; corona uniseriata; margine denticulate; androgynophorum 8–9 cm, pubescentia. Fructus ignatus. – Fig. 4.

Liana, pubescent throughout; stem terete, striate of leaftraces below stipules. Leaves 12–25 × 8–13 cm; stipules 1–1.3 × 1.7 cm, lanceolate, margin glandular lacinate; petiole 3–4.5 cm, 6–8 glandular, glands subsessile, scattered along the petiole; blade ovate, trifoliolate, midleaflet 8.5–13.5 × 3–3.2 cm, apices acuminate, base attenuate, margin serrate. Peduncle 6–13 cm, axillary solitary or in pairs, pendant; bracts 4–6.5 × 2–2.5 cm, lanceolate, connate to 1 cm from base, margin minute dentate, puberulent, green with light brown nerves. Flowers 11–12 cm in diameter, pink; hypanthium 8–8.5 cm, cylindric, 1–1.8 cm in diameter at throat, 1.4–1.6 in diameter above base, base dilated, diameter 2 cm, greenish to pinkish outside, creamish-white inside; sepals 5–6 × 2.5–3.2 cm oblong, obtuse, slightly carinate, aristate, awn 2–4 mm; petals 5–6 × 2–3.2 cm, oblong, obtuse; corona uniseriate, filaments less than 1 mm, reduced to a denticulate ring, dark purple; operculum 5–6 mm, pendant, margin denticulate, recurved; androgynophore 8–9 cm, pubescent, angulate at base; ovary ellipsoidal, densely pubescent; styles free, lower part densely pubescent. Fruit not seen. – Fig. 4.

Additional specimens examined: Ecuador, Napo: El Carmen – La Bonita road, km 40–46, 2200–2350 m, Løjtnant et al. 12241 (AAU).

Notes: *Passiflora sanctae-barbarae* belongs to subg. *Tacsonia* (Juss.) Triana & Planch. and is closely related to *P. trifoliata* Cuv. from Central Peru. *P. sanctae-barbarae* differs from *P. trifoliata* by having united bracts and a uniseriate dark purple corona, whereas *P. trifoliata* has free bracts and a double ranked corona of pink corona teeth. *P. sanctae-barbarae* occurs in the Santa Barbara valley in the eastern cordillera of Ecuadorian Andes close to the Colombian border.

Acknowledgements – We wish to thank the curators of the following herbaria for making available the specimens for this study: AAU, C, COL, F, G, GH, K, MO, NY, P, QCA, S,

UPS, US. We are grateful to Kirsten Tind for her skillful drawings and Susanne S. Vire who supplied the Latin diagnoses.

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