

Zeitschrift: Candollea : journal international de botanique systématique = international journal of systematic botany
Herausgeber: Conservatoire et Jardin botaniques de la Ville de Genève
Band: 51 (1996)
Heft: 2

Artikel: The genus *Symplocos* (Symplocaceae) in Colombia
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DOI: <https://doi.org/10.5169/seals-879413>

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The genus *Symplocos* (Symplocaceae) in Colombia

BERTIL STÅHL

RESUMEN

STÅHL, B. (1996). El género *Symplocos* (Symplocaceae) en Colombia. *Candollea* 51: 323-364. En inglés, resúmenes en español y en inglés.

Se presenta una revisión taxonómica del género *Symplocos* en Colombia. Se reconocen 30 especies, de las cuales *S. bombycina*, *S. crassulacea*, *S. cundinamarcensis*, *S. decorticans*, *S. magdalenae*, *S. phaeoneura*, *S. ramuliflora*, *S. rhomboidea*, *S. rimosa* y *S. silverstonei* se describen como nuevas para la ciencia. Se presentan descripciones o referencias a descripciones adecuadas, una clave de las especies y listas de material estudiado. Se ilustran muchas de las especies.

ABSTRACT

STÅHL, B. (1996). The genus *Symplocos* (Symplocaceae) in Colombia. *Candollea* 51: 323-364. In English, Spanish and English abstracts.

The genus *Symplocos* in Colombia is revised to include 30 species, ten of which are described as new, i.e. *S. bombycina*, *S. crassulacea*, *S. cundinamarcensis*, *S. decorticans*, *S. magdalenae*, *S. phaeoneura*, *S. ramuliflora*, *S. rhomboidea*, *S. rimosa*, and *S. silverstonei*. Full descriptions or references to relevant descriptions are given. A key to the species and specimen citations are provided. Many species are illustrated.

KEY-WORDS: *Symplocos* – SYMPLOCACEAE – Colombia – Andes – Taxonomy.

Introduction

The first work dealing with Andean species of *Symplocos* was published by HUMBOLDT & BONPLAND (1805), who described and illustrated five species from Colombia. One of these species was based on material provided by J. C. Mutis (1732-1808), who also was the collector of the first species described from the country, i.e. *S. theiformis* (LINNÉ fil., 1781). BRAND (1901), in his revision of the *Symplocaceae* for Das Pflanzenreich, recognised 13 species in Colombia, all but two described as new. However, because of poor labelling two of these were misplaced in Colombia, being based on material collected outside the country. He also merged three of the species described by HUMBOLDT & BONPLAND (1805). More recent works include a paper by CUATRECASAS (1950), in which he described four new species based on his own collections made in the 1940s. A treatment of the genus in Department Cundinamarca has also been carried out by CHAPARRO (1975), but only a short paper describing a new species (CHAPARRO, 1976) has been effectively published so far. Finally, in his work on medicinal plants in Colombia, GARCÍA BARRIGA (1992) enumerates 13 species of *Symplocos* and gives short descriptions of four of them. Unfortunately, many species names in this work are misapplied, being based on incorrect determinations.

In the present work, which is the sixth in a series dealing with primarily Andean *Symplocaceae* (STÅHL, 1991, 1993, 1994, 1995a, 1995b), 30 species are recognised. Although some of these species have a doubtful status, as indicated in the text, the total number of species will no doubt rise rather than fall as more material becomes available. The account should be regarded as a preliminary work, a tidying up of the taxonomy of this large but still poorly known genus. The account is also a precursor to a future treatment of the *Symplocaceae* for Flora de Colombia, an undertaking that will need more field work and additional material of poorly known taxa.

Taxonomic treatment

Key to the species of *Symplocos* in Colombia

- 1a. Plants glabrous; leaves yellowish or light green when dried; corolla thin and ephemeral; stamen filaments filiform, gradually tapering towards apex, inconspicuously united at base only **1. *S. bogotensis***
- 1b. Plants often, but far from always, ± pubescent; leaves often, ± brownish when dried; corolla firm, not ephemeral; stamen filaments ± ribbon-shaped, usually abruptly constricted at apex, distinctly united towards base 2
- 2a. Leaves shorter than 4 cm 3
- 2b. At least some leaves longer than 4 cm 9
- 3a. Young shoots glabrous; leaves glabrous or sparsely hispid on midvein beneath 4
- 3b. Young shoots variously pubescent; leaves variously pubescent beneath, at least on midvein 6
- 4a. Leaves hispid on midvein beneath; calyx and corolla strigose **3. *S. bombycina***
- 4b. Leaves and floral parts glabrous 5
- 5a. Flowers solitary or in groups of 2 or 3, sessile; corolla 5-6.5 mm long; leaf blade 1.5-3.5(-4) cm long **2. *S. theiformis***
- 5b. Flowers solitary, with pedicels 0.2-0.5 cm long; corolla ca. 9 mm long; leaves 1-2 cm long **6. *S. rhomboidea***
- 6a. Flowers arranged in little-branched panicles to 2 cm long **24. *S. quitensis***
- 6b. Flowers solitary or in fascicles of 2-5 flowers, sessile or short-pedicellate 7
- 7a. Flowers solitary, sessile or short-pedicellate; leaves strigose on midvein beneath, otherwise glabrous **19. *S. lutescens***
- 7b. Flowers solitary or in fascicles of 2-5; leaves lanate or tomentose beneath 8
- 8a. The bark on young shoots smooth; leaves lanate beneath, blades to 2(-3) cm long, the margins with 5-8 glands per side **4. *S. nivalis***
- 8b. The bark on young shoots verrucose; leaves tomentose beneath, blades 1.8-5 cm long, the margins with 9-18 of glands per side **5. *S. lehmannii***
- 9a. Leaves variously pubescent beneath 10
- 9b. Leaves glabrous 22
- 10a. Flowers sessile, solitary or in fascicles of 2-5 11
- 10b. Flowers arranged in few- to many-flowered panicles, if solitary then distinctly pedicellate 16

- 11a. Most leaves longer than 7.5 cm, apex usually distinctly acuminate with acumen 0.5-2(-3) cm long12
- 11b. Leaves shorter than 7.5 cm, apex acute, obtuse, or shortly obtuse-acuminate14
- 12a. Young shoots pilose or tomentose, the buds and undeveloped leaves densely brownish-pubescent; leaves sparsely to densely pilose-tomentose beneath**23. S. serrulata**
- 12b. Young shoots sparsely strigulose or glabrous; leaves sparsely strigulose beneath13
- 13a. Young shoots glabrous; petiole 1-2 cm long; leaf blades 6-23 cm long, margins densely glandular-serrulate with more than 40 glands per side**18. S. fuliginosa**
- 13b. Young shoots sparsely strigulose; petiole 0.5-1 cm long; leaf blade 7-16.5 cm long, margins vaguely glandular-crenate with 5-15 glands per side**29. S. sp.**
- 14a. The bark on young shoots smooth; petiole 0.8-1.3 cm long; leaves sparsely strigose beneath; flowers borne mainly beneath the foliage**13. S. ramuliflora**
- 14b. The bark on young shoots ± verrucose; petiole shorter than 0.6 cm; leaves pilose or tomentose beneath; flowers borne among the foliage15
- 15a. Leaves to 5 cm long, margins crenulate or serrulate, each side with 9-18 glands**5. S. lehmannii**
- 15b. Leaves 4-7.5(-10) cm long, margins entire, eglandular**20. S. pichindensis**
- 16a. Bark on young shoots ± verrucose; leaves with ± patent hairs beneath (the surface pilose or tomentose)17
- 16b. Bark on young shoots smooth; leaves strigose or strigulose beneath18
- 17a. Leaf blades to 6.5 cm long; corolla 5-7 mm long, glabrous**24. S. quitensis**
- 17b. Leaf blades 5-18 cm long; corolla 15-17 mm long, strigulose**23. S. serrulata**
- 18a. Flowers solitary, pedicels 8-20 mm long**17. S. fimbriata**
- 18b. Flowers arranged in panicles, pedicel shorter than 4 mm19
- 19a. Inflorescences 2-3 cm long, lateral or subterminal; corolla ca. 4 mm long; veins of the lower leaf side darkened**25. S. phaeoneura**
- 19b. Inflorescences shorter than 2 cm, lateral; corolla longer than 7 mm; veins of lower leaf side not conspicuously darkened20
- 20a. Leaf margins vaguely crenate, eglandular; fruits 10-12 mm long**26. S. trianae**
- 20b. Leaf margins vaguely to distinctly crenate or serrate, glandular; fruits usually longer than 12 mm21
- 21a. Corolla 12-14 mm long**27. S. arechea**
- 21b. Corolla 7-9 mm long**28. S. ecuadoriensis**
- 22a. Flowers solitary23
- 22b. Flowers borne in fascicles or little-branched panicles26
- 23a. Pedicel 8-20 mm long**17. S. fimbriata**
- 23b. Pedicel to 6 mm long or flowers sessile24
- 24a. Corolla ca. 11 mm long, lobes 5; calyx glabrous**10. S. cundinamarcensis**
- 24b. Corolla 6-7 mm long, lobes 7-9; calyx strigulose, at least on midvein25
- 25a. Bark on young shoots smooth; leaf margins with 5-10 glands per side; stamens ca. 40 in 2 or 3 rows**9. S. venulosa**
- 25b. Bark on young shoots fissured; leaf margins with 15-25 glands per side; stamens 80-90 in 4 or 5 rows**16. S. rimosa**

- 26a. Flowers arranged in short, little-branched panicles 27
- 26b. Flowers arranged in fascicles 29
- 27a. Stems of young branches \pm flattened; leaf margins densely glandular-denticulate with 20-35 glands per side **21. S. mucronata**
- 27b. Stems of young branches terete; leaf margins eglandular or with 8-16 glands per side 28
- 28a. Leaf margins eglandular; ovary 5-locular **26. S. trianae**
- 28b. Leaf margins glandular-denticulate; ovary 3-locular **22. S. quindiuensis**
- 29a. Leaves sessile or subsessile; ovary 5-locular **8. S. decorticans**
- 29b. Leaves distinctly petiolate; ovary 3- or 4-locular 30
- 30a. Calyx strigulose or strigose 31
- 30b. Calyx glabrous 32
- 31a. Corolla ca. 10 mm long, lobes ca. 10 **14. S. flosfragrans**
- 31b. Corolla 3.5-4 mm long, lobes 5 **11. S. crassulacea**
- 32a. Corolla 7-9 mm long; veinlets of lower leaf surface inconspicuous or invisible 33
- 32b. Corolla 4.5-6 mm long; veinlets of lower leaf surface \pm conspicuous, sometimes prominent 34
- 33a. Leaf blades broadly to very broadly elliptic, 3-6.5 cm long; inflorescences with 2-4 flowers; ovary 4-locular **12. S. silverstonei**
- 33b. Leaf blades elliptic or oblanceolate, 6-11 cm long; inflorescences with 4-8 flowers; ovary 3-locular **22. S. quindiuensis**
- 34a. Leaf margins glandular-denticulate or glandular-crenulate except at base, with 10-40 glands per side **15. S. sararensis**
- 34b. Leaf margins glandular-crenate or glandular-serrate from the middle of the lamina to apex, with 2-10 glands per side 35
- 35a. Leaf apex rounded; disc glabrous; fruits 7-9.5 mm long **7. S. rigidissima**
- 35b. Leaf apex obtuse, subacute, or shortly obtuse-acuminate; disc strigulose; fruits 12-15 mm long **30. S. magdalenae**

1. *Symplocos bogotensis* Brand, Pflanzenr. IV.242: 30. 1901; Ståhl, Fl. Ecuador 43: 6, fig. 1. 1991. **Type:** Colombia, Dept. Cundinamarca, Alto Batatos, 3000 m, Aug 1855 (fl.), *Triana* 2626 (lectotype, BM, selected here; isolectotypes, BM, G, K, NY, US).

Symplocos bogotensis belongs, as the only Colombian representative of the family, to subgenus *Hopea*. As such it is easily distinguished by its glabrous vegetative and reproductive parts, rather small obovate leaves drying pale green, and small, delicate, unisexual flowers borne on short, lateral racemes.

Being distributed from Venezuela to northern Peru, *S. bogotensis* is one of the most widely distributed species of the genus in the Andes (STÅHL, 1995b). In addition, *S. pycnophylla* Sleumer, described from the Guayana Highland (SLEUMER, 1937), is probably not specifically distinct from *S. bogotensis*. In Colombia, the species has been collected a few times only.

Specimens examined. – **Antioquia:** Santa Rosa, 2300-2500 m, Dec (fl.), *Lehmann* 7575 (F, K). Yarumal [?], Feb 1941 (fl.), *Bro. Tomas* 1503 (US).

2. *Symplocos theiformis* (L. fil.) Gürke, Nat. Pflanzenfam. IV.1: 172. 1891 (“*theaeformis*”); Humboldt & Bonpland, Pl. Aequin. 1: 181-184, fig. 51. 1805; Pérez Arbeláez, Pl. Utiles Colombia, fig. 693. 1990.

≡ *Alstonia theaeformis* L. fil., Suppl. 264. 1781. **Type:** Colombia, Mutis *s.n.* (LINN 663: 1, 2, photographs seen at S).

≡ *Symplocos alstonia* L’Hérit., Trans. Linn. Soc. Bot. 1: 176. 1791. **Type:** Based on *Alstonia theaeformis* L. fil.

= *Symplocos cinerea* Brand, Repert. Spec. Nov. Regni Veg. 2: 14. 1906. **Type:** Colombia, Dept. Cundinamarca, “highlands of Zipaquirá and Bogotá, 2600-3200 m”, Lehmann 7466 (lectotype, K, selected here; B destroyed, photos in F, GH, MO, NY).

Shrub or small tree to 4(-6) m; young shoots and branchlets glabrous, brown to dark brown or sometimes greyish, the bark smooth, older parts often exfoliating. Leaves short-petiolate, brownish green when dried; blade elliptic, obovate, or ovate, sometimes broadly so, 1.5-3.5(-4) × 0.8-2(-2.5) cm, coriaceous, glabrous, base short-attenuate or truncate, apex rounded, usually minutely retuse, margins glandular-crenulate towards apex with 5-10 glands on each side, entire and somewhat revolute towards base; midvein and lateral veins more or less channelled above, somewhat prominent beneath, veinlets inconspicuous above, rather conspicuous beneath; petiole 1-3 mm long, canaliculate or subcanaliculate, glabrous. Flowers sessile, solitary or in sessile fascicles of 2 or 3, rarely more, borne among the foliage, sweet-scented. Bracteoles 4-6, glabrous, ovate, margins ciliolate. Calyx glabrous, tube 1-1.2 mm long, lobes broadly ovate, 1.5-2.5 × 2.2-3 mm, margins ciliolate. Corolla pale red or white, glabrous, 5-6.5 mm long, the tube 1-1.5 mm long, lobes 5-7(8), 2.5-3.5 mm wide, margins entire. Stamens 55-65 in 3(4) rows, filament tube 2-3 mm long, free filaments 0.2-1.5(-2) × 0.3-0.6 mm, papillose; anthers 0.3-0.5 × 0.4-0.6 mm. Disc dome-shaped or subannular, glabrous; style 1.5-2.5 mm long, glabrous; stigma subcapitate or capitate, ± distinctly 3-lobed. Ovary 3(4)-locular with 3 ovules in each locule. Fruits cylindrical or ellipsoid, 7-11.5 × 5.5-7 mm, glabrous, smooth or wrinkled when dried, black.

Symplocos theiformis is recognised by its small glabrous leaves with channelled adaxial venation, glabrous and smooth shoots with often exfoliating bark, sessile flowers appearing solitary or in groups of two or three among the foliage, and cylindrical to somewhat ellipsoid fruits.

The species is known from more collections than any other species of *Symplocos* in the Andes, although most of these have been made at a few localities near Bogotá. It grows in shrub-páramo and upper montane forests and is distributed in the Cordillera Oriental from Santander to Cundinamarca Departments. A few collections are also known from the northern range of Cordillera Central.

Vernacular name. – Té de Bogotá. Accounts of the use of *S. theiformis* for preparing leaf infusions, based mainly on notes and experiments made by J. C. Mutis, are given by PÉREZ-ARBELÁEZ (1990) and GARCÍA BARRIGA (1992).

Selected specimens examined (a total of ca. 130 were examined). – **Santander:** Mpio. de Onzaga, vicinity of Chaguacá, 2650 m, 2 Apr 1976 (fl.), Torres & al. 618 (COL). – **Boyacá:** Páramo del Alto del Cañutal, between Soatá and Cocuy, 15 Sep 1938 (fr.), Cuatrecasas 1780 (F, US). Páramo de Arcabuco, between Tunja and Arcabuco, 2950 m, 24 Feb 1940 (fl.), Cuatrecasas & Pérez-Arbeláez 8095 (COL, F, US). Mpio. de Aquitania, Suse peninsula, 3050 m, Aguirre & Rangel 452 (COL). Mpio. de Santa Rosa de Viterbo, N of population, 3200 m, 15 Jan 1981 (fl.), Camargo & Huertas 7816 (COL). Páramo de Chita, at Río Casanare, 93 km from road to La Punta, 3100 m, 19 Jun 1972 (fl.), Cleef 4745 (COL). – **Cundinamarca:** Finca San Pedro, N end of Sabana near Suba, 2600-2700 m, 13 Sep 1961 (fl.), Cuatrecasas & Jaramillo 25931 (US). El Tablón, Páramo de Palacio, 3350 m, 14 Dec 1959 (fr.), Cuatrecasas & al. 25663 (COL, US). Páramo de Zipaquirá, 3600 m, 4 Apr 1958 (fl.), Idrobo 2722 (COL, US). Páramo de Guasca, 15 Dec 1938 (fl.), Balls 5709 (BM, COL, K, US). Pantano Redondo, Mpio. Zipaquirá, 12 Dec 1950 (fl.), Fernández-Pérez & Jaramillo-Mejía 437 (COL, NY). 7-10 km above Guasca on road to Gachetá, 2850-3050 m, 16 May 1979 (fl.), Luteyn & Lebrón-Luteyn 7725 (COL, MO, NY). Páramo de Cruz Verde, E of Bogotá, 3200 m, 21 Jun 1959 (fl.), Barclay & Juajibioy 7764 (COL,

MO, US). Road Gutierrez-Fosca, 2050-3100 m, 15 Apr 1962 (fl.), *García Barriga 17425* (NY, US). La Horqueta, valley of Río San Cristobal, 3500-3575 m, 16 Nov 1958 (fl.), *García Barriga 16167* (ECON, NY, US). Just N of Usaquén, 74°01'W, 04°33'N, 2650-2700, 18 Nov 1944 (fl.), *Fosberg & Drew 22324* (NY, US). Páramo de Monserrate, 16 Apr 1944 (fl.), *Killip & al. 38071* (A, COL, US). Altos de las Cruces-Guadalupe, 3350 m, 19 Jun 1939 (fl.), *Cuatrecasas 5564* (COL, F, US). SW of Las Cruces, 2700-2800 m, 24 Sep 1917 (fl.), *Pennell 2180* (NY). Guadalupe, 5 Apr 1947 (fl.), *Haught 5628* (COL, US). Finca San Juan, road Bogotá-La Calera, 2800 m, 11 Sep 1973 (fl.), *Chaparro 124* (COL, GH). Páramo de la Calera, 3000-3300 m, 25 Feb 1950 (fl.), *Philipson & al. 2415* (BM). Sopó, 2800 m, 3 Dec 1949 (fl.), *García Barriga 13365* (COL). Cerro Eden, between Sopó and Guasca, 2750 m, 22 Jul 1973 (fl.), *Chaparro 115* (COL, MO). On border between Mpio. Guasca and Mpio. Sopó, 9 Mar 1974 (fl.), *Sarmiento 313* (COL). Bogotá-Choachí Road, "La Viga", 3300 m, 7 Jan 1974 (fl.), *Gentry & al. 8910* (F, MO). Quebrada del Chico, 2700 m, 12 Oct 1944, *Schneider 12* (S). Cerro de Suba, 2700, 6 Mar 1946 (fl.), *Duque-Jaramillo 2720* (COL, NY). Mpio de Suba, Hda Las Mercedes, 9 Nov 1973 (fl.), *Chaparro 169* (COL, F, GH, NY). Chapinero, 2700 m, Apr 1937 (fl.), *Bro. Daniel 1244* (F). El Retiro, 2600-2700 m, 7 May 1946 (y. fr.), *Schultes 7241A* (F). Vicinity of Represa del Neusa, 11 Oct 1971 (y. fr.), *Chaparro 162* (COL, F). Above Cogua, 2850-2900 m, 4 Jul 1942 (y. fr.), *Cuatrecasas 13625* (COL, F, US). Near Laguna de Chingaza, 4 Mar 1985 (fl.), *Galeano & al. 585* (COL). Chingaza National Park, Mpio. de Fómeque, 3200 m, 18 Dec 1981 (fr.), *Franco & Tellez 947* (COL). Mpio. de Subachoque, El Tablazo, 3400-3450 m, 1 Sep 1983 (fl.), *Días & Regueiro 4244* (COL). Pacho on road to Páramo de Guerrero, 1900 m, 10 May 1964 (fl.), *García Barriga 18054* (COL). Páramo de Guerrero, 3100 m, May 1963 (fl.), *Larsson s.n.* (S). – **Antioquia:** Santa Rosa, 2700 m, 2 Apr 1963 (fl.), *Espinal 1111* (COL). 1 km N of Santa Rosa on road to Medellín, 2450 m, 22 Mar 1979 (fl.), *Luteyn & al. 7032* (F, NY, US). Llanos de Quibá area, ca. 24 km N of Santa Rosa de Osos, 2625 m, 27 May 1984 (fl.), *Luteyn & al. 10818* (COL, MO). San Pedro, 2400 m, Dec 1937 (fl.), *Bro. Daniel 1301* (F).

3. *Symplocos bombycina* B. Ståhl, spec. nova

Type: Colombia, Dept. Cauca, Cordillera Oriental, El Tambo, Cerro de Munchique, 2900 m, Jul 1948 (fl.), *Yepes-Agredo 440* (holotype, COL; isotype, US). (Fig. 1).

Frutex, surculis laevibus, brunneis. Folia in sicco atroviridia, petiolis ad 0.15 cm longis; lamina obovata vel subelliptica, 2.2-3.3 × 1.2-1.8 cm, coriacea, pagina inferiore ad costam hispida, pagina superiore glabra, basi truncata, apice obtuso, margine obscure glanduloso-crenulato, glandibus utroque latere 4-8, caducis, costa infra prominenti, parum verrucosis, supra impressa, venis lateralibus venulisque infra prominulis, supra inconspicuis. Flores solitarii, axillaris, sessiles. Bractae 5, glabrae vel sparsim strigosae, ovate vel late ovate, 3-3.5 × 2.5-3 mm. Calyx preter margines dense strigosus, tubo 1.5 mm longo, lobis ovatis, 3 × 2-2.5 mm, marginibus ciliolatis. Corolla 5 mm longa, lobis 5, 2.5 mm latis, in centris dense strigosis, marginibus integris vel sparsim ciliolatis. Stamina 40-45, quadrifaria, tubo 1.5 mm longo, filamentis liberis 0.5-1.5 × 0.4-0.5 mm, papillosis, antheris 0.4 × 0.5 mm. Discus annularis, glaber. Stylus 1.5 mm longus, glaber, stigmatibus subcapitato, obscure lobato. Ovarium quadriloculare, ovulis in quoque locule circiter 3. Fructus ignotus.

Shrub; young shoots and branchlets glabrous, the bark smooth, brown. Leaves short-petioled, dark green when dried; blade obovate or subelliptic, 2.2-3.3 × 1.2-1.8 cm, coriaceous, sparsely hispid on midvein beneath, otherwise glabrous, base truncate, apex obtuse, margins vaguely glandular-crenulate, the glands 4-8 per side, caducous; midvein prominent and somewhat verrucose beneath, impressed above, lateral veins and veinlets prominulous beneath, inconspicuous above; petiole to 0.15 cm long, glabrous. Flowers solitary in the leaf axils, sessile. Bracts 5, the two outermost ovate, ca. 3 × 2.5 mm, glabrous or subglabrous, the innermost broadly ovate, ca. 3.5 × 3 mm, sparsely strigose, margins ciliate. Calyx densely strigose except along margins and at base, tube 1.5 mm long, lobes ovate, 3 × 2-2.5 mm, margins ciliate. Corolla colour unknown, densely strigose in the middle, 5 mm long, lobes 5, free almost to base, 2.5 mm wide, margins



Fig. 1. – *Symplocos bombycina* B. Stähli
Photos of holotype, *Yepes-Agredo 440* (COL)

entire or vary sparsely ciliolate. Stamens 40-45 in 4 rows, tube 1.5 mm long, free filaments 0.5-1.5 × 0.4-0.5 mm, papillose; anthers 0.4 × 0.5 mm. Disc annular, glabrous; style 1.5 mm long, glabrous; stigma subcapitate, obscurely lobed; ovary 4-locular with ca. 3 ovules in each locule. Fruits not seen.

Symplocos bombycina is vegetatively very similar to *S. theiformis* and may well be a close relative of that species. It differs from *S. theiformis* in its densely strigose calyx and corolla, and the hispid midvein of the lower leaf surface.

Known only from the type collection.

4. *Symplocos nivalis* Linden ex Brand, Pflanzenr. IV.242: 81. 1901. **Type:** Colombia, Dept. Magdalena, Rio Hacha, 3600 m, Jan 1844 (fl.), *Linden 1620* (lectotype, G, selected here; isolectotypes, F, K; photo of G at F, GH, MO). (Fig. 2).

Shrub to 2(-4) m high; young shoots and branchlets tomentose-pilose, the bark smooth. Leaves mostly short-petiolate, light to dark brown or brownish green when dried; blade elliptic, sometimes ovate or obovate, 0.8-2(-3) × 0.5-1(-1.8) cm, cartilaginous, lanate beneath, glabrous and often glossy above, base truncate or short-attenuate, margins usually somewhat revolute, towards apex glandular-denticulate with 5-8 pairs of glands; midvein prominent beneath, impressed above, lateral veins and veinlets invisible or very inconspicuous; petiole 0.1-0.3 cm long, lanate beneath, the upper side plane. Flowers solitary, rarely in groups of 2 or 3, sessile, borne among the foliage. Bracteoles 4, ovate, ca. 4 × 4 mm, lanate, apex obtuse, margins often with glands with resinous content. Calyx tube 1.5 mm long, lanate, lobes broadly ovate, ca. 3.5 × 3-3.5 mm, lanate, sparsely so along margins. Corolla pale red or pink, glabrous, 7-8 mm long, tube ca. 2 mm long, lobes 5-9, very unequal in size, broadly oblong, to 3-4.5 mm wide, margins entire. Stamens ca. 50 in 3 rows, filament tube 1.5 mm long, free filaments 0.5-1 × 0.3-0.4 mm, smooth; anthers 0.5 × 0.5 mm. Disc subannular, strigulose; style 1.5 mm long, glabrous; stigma capitate, indistinctly 4- or 5-lobed. Ovary 4- or 5-locular with 2 or 3 ovules in each locule. Fruits narrowly ellipsoid, ovoid, or cylindrical, 11-17 × 6-8 mm, sparsely strigose, tomentulose at apex and base, smooth, dark brown, persisting calyx lobes erect.

This species is easily recognised by its small, though leaves with lanate lower sides. It is endemic to Sierra Nevada de Santa Marta where it has been collected in shrub páramo and open páramo vegetation.

Specimens examined. – **Magdalena:** Between Pueblo Viejo and Páramo de Macotama, 2800-3000 m, 12 Feb 1959 (fl.), *Barclay & Juajibioy 6892* (COL, MO, US). Vicinity of the headwaters of Río Sevilla, 3500 m, 23 Jan 1959 (fl. & fr.), *Barclay & Juajibioy 6633* (COL, MO, US). Near Laguna Río Frío, 3250 m, ca. 73°53'W, 10°55'N, 28 Jul 1972 (fl. & fr.), *Kirkbride & Forero 1757* (NY, US). 1 km NW of the valley of Laguna Río Frío, towards Pico José Hilario, 73°53'W, 10°55'N, 3400 m, 31 Jul 1972 (fl.), *Forero & Kirkbride 631* (COL, F, NY). Surivaquito, 2750 m, 22 Apr 1939 (fl.), *Hanbury-Tracy 361* (K, US). About 48 km inland from Dibulla, 4875 m, Jul 1932 (fr.), *Seifríz 526* (US). Valley of Río Donachuí, near Laguna de Calocribe, E of Meollaca, 3600-3700 m, 30 Sep 1959 (fl.), *Cuatrecasas & Romero Castañeda 24524* (COL, US); near Col, 3100 m, 9 Oct 1959 (fr. & fl.), *Cuatrecasas & Romero Castañeda 24679* (COL, US); between Canguruaca and Corisa, 2500-3100 m, 14 Oct 1958 (fl.), *van der Hammen 1139* (COL, US); on road Donachuy-Sacaracungue, 4000 m, 24 Oct 1958 (fl.), *van der Hammen 1228* (COL, US). The Buritaca Transect, edge of La Cumbre, 3550 m, 15 Aug 1977 (fr.), *Rangel & al. 950* (COL); 3650 m, 21 Aug 1977 (fl. & fr.), *Rangel & al. 1000* (COL). Between Bellavista and Duriaimena, 3600-3800 m, 8 Dec 1978 (fl.), *Rangel & al. 1909* (COL). Between the edge of La Cumbre and La Cimarrona, 3350 m, Dec 1977 (fl.), *Rangel 1380* (COL). Moraines, Mamancanaca Valley, 3700 m, Jan 1942 (fl.), *Clements 19* (COL). Without precise locality, 3000 m, Mar 1852 (fl.), *Schlim 802* (K); Sierra Nevada, Jun 1844, *Purdie s.n.* (K). – **La Guajira:** Valley of Río San Miguel, 3100-3700 m, 16 Aug 1986 (fr.), *Cuadros & Gentry 2741* (NY).

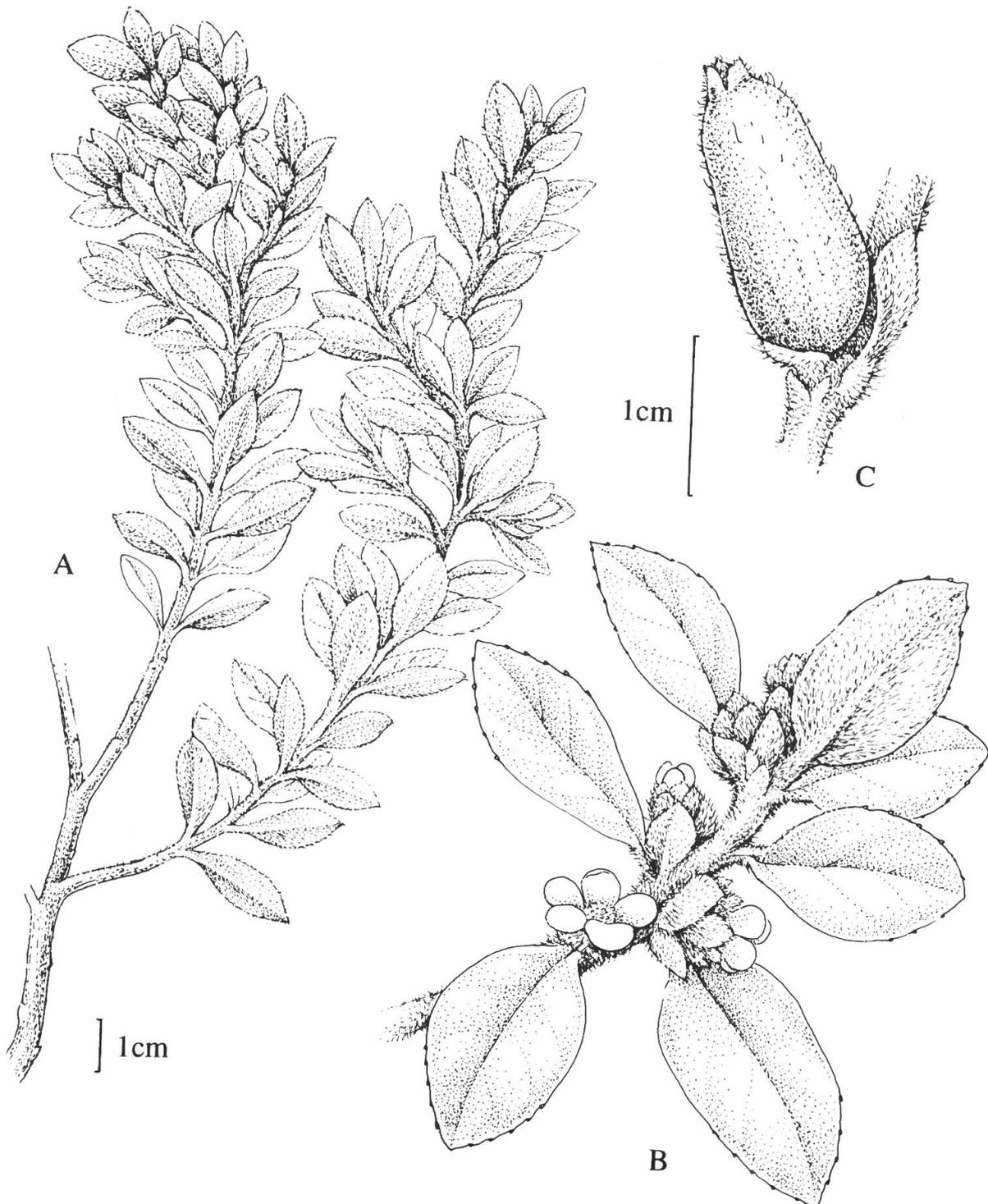


Fig. 2. – *Symplocos nivalis* Brand
A, branches; B, flowering branchlet; C, fruit (A, Rangel 1380; B, van der Hammen 1228; C, Barclay & Juajibioy 6633).

A sterile specimen appears to represent a glabrous variant of *S. nivalis*: **Magdalena:** Páramo de Macotama, near headwaters of Río Ancho, 3750 m, 15 Feb 1959 (ster.), *Barclay & Juajibioy 6976* (US).

5. *Symplocos lehmannii* Brand, Repert. Spec. Nov. Regni Veg. 2: 13. 1906. **Type:** Colombia, Dept. Antioquia, Santa Rosa, 2300-2600 m, Dec 1891 (fl.), *Lehmann 7456* (lectotype, K, selected here; isolectotypes, F, GH, K; B destroyed, photo in F, GH, NY). (Fig. 3).

Shrub or small tree to 6 m high; young shoots and branchlets brown or dark brown, tomentose, the bark verrucose. Leaves short-petiolate, brown when dried; blade ovate to elliptic, 1.8-5 × 1.4-3 cm, tomentose beneath, glabrous above, base truncate or cordate, apex obtuse, acute, or rounded, margins ± revolute, glandular-crenulate or glandular-serrulate with 9-18 pairs of glands, sometimes entire and eglandular at base; midvein prominent beneath, immersed above, on the lower side ± verrucose, lateral veins prominent beneath, in level with surface above, veinlets rather conspicuous; petiole 0.1-0.3 cm long, subcanaliculate, tomentulose-verrucose. Inflorescences fasciculate, sessile, borne among the foliage, with 3-5 flowers. Bracteoles 5, ovate, densely strigulose. Calyx strigulose, sparsely so towards margins, tube 1.5 mm long, lobes broadly ovate, 1.7 × 1.7 mm, margins entire. Corolla cream, glabrous, ca. 3 mm long including tube ca. 1 mm long, lobes 2-2.5 mm wide, margins entire. Stamens 35-40 in 3 rows, filament tube ca. 1 mm long, free filaments to 1 mm long, 0.3-0.4 mm wide, papillose; anthers 0.3 × 0.4 mm. Disc annular, densely puberulous; style 0.7-1 mm long, glabrous; stigma capitate, indistinctly 3-lobed; ovary 3-locular with 3 ovules in each locule. Fruits ellipsoid, 11-14 × 5-6 mm, sparsely puberulous, persisting calyx lobes erect.

Symplocos lehmannii is easily distinguished by its rather small, usually ovate leaves, verrucose shoots and branchlets, and small flowers arranged in fascicles.

The species has been collected a few times in subpáramo vegetation in the northern part of Cordillera Central.

Specimens examined. – **Antioquia:** Mpio. de Medellín, along road to Cerro del Padre Amaya, 9.1 km from road Medellín-Santa Fé de Antioquia, 75°41'W, 06°16'N, 2850 m, *Zarucchi & Brant 5360* (S). – **Caldas:** San Félix, near Salamina, Jul 1944 (fr.), *Bro. Tomas 2067* (US).

6. *Symplocos rhomboidea* B. Ståhl, spec. nova

Type: Colombia, Dept. Antioquia, Mpio. Urrao, Páramo de Frontino, between Llano Grande and Churrumblúm, 76°05'W, 06°28'N, 3325-3550 m, 1 Mar 1989 (fl.), *MacDougal & al. 4391* (holotype, S). (Fig. 4).

Frutex vel arbor parva ad 6 m alta, surculis glabris, laevibus, cinerascentibus. Folia petiolis 0.2-0.5 cm longis; lamina ovata vel elliptica, 1-2 × 0.5-1.1 cm, coriacea, glabra, basi angustata, apice obtuso, margine glanduloso-serrulato, glandibus utroque latere 4-7, costa infra prominente, supra leviter impressa, venis lateralibus venulisque infra prominulis, supra prominulis vel deplanatis. Flores solitariae, axillares, pedicellis 0.1-0.4 cm longis, glabris, saepe nonnihil recurvatis. Bractae 5, glabrae. Calyx glaber, tubo 1.5 mm longo, lobis perlate ovatis, 2.5 × 3.5 mm, marginibus integris vel sparsim ciliolatis. Corolla purpurea, glabra, 9 mm longa, lobis 5, late oblongis, 4-5.5 mm latis, marginibus integris. Stamina 50-60, quadri- vel quinquefaria, tubo 5 mm longo, filamentis liberis 0.2-1.5 × 0.5-0.7 mm, laevibus, antheris 0.3 × 0.4-0.5 mm. Discus tholiformis, puberulus. Stylus 6 mm longus, glaber, stigmatibus capitato, trilobato. Ovarium trilobulare, ovulis in quoque loculo 2. Fructus ignotus.

Shrub or small tree to 6 m high; young shoots and branches glabrous, the bark greyish, smooth. Leaves petiolate, dark brownish green when dried, pale beneath; blade ovate or elliptic with broadest part well demarcated, 1-2 × 0.5-1.1 cm, coriaceous, glabrous, base attenuate, apex obtuse, margins glandular-serrate with 4-7 glands per side; midvein prominent beneath, slightly

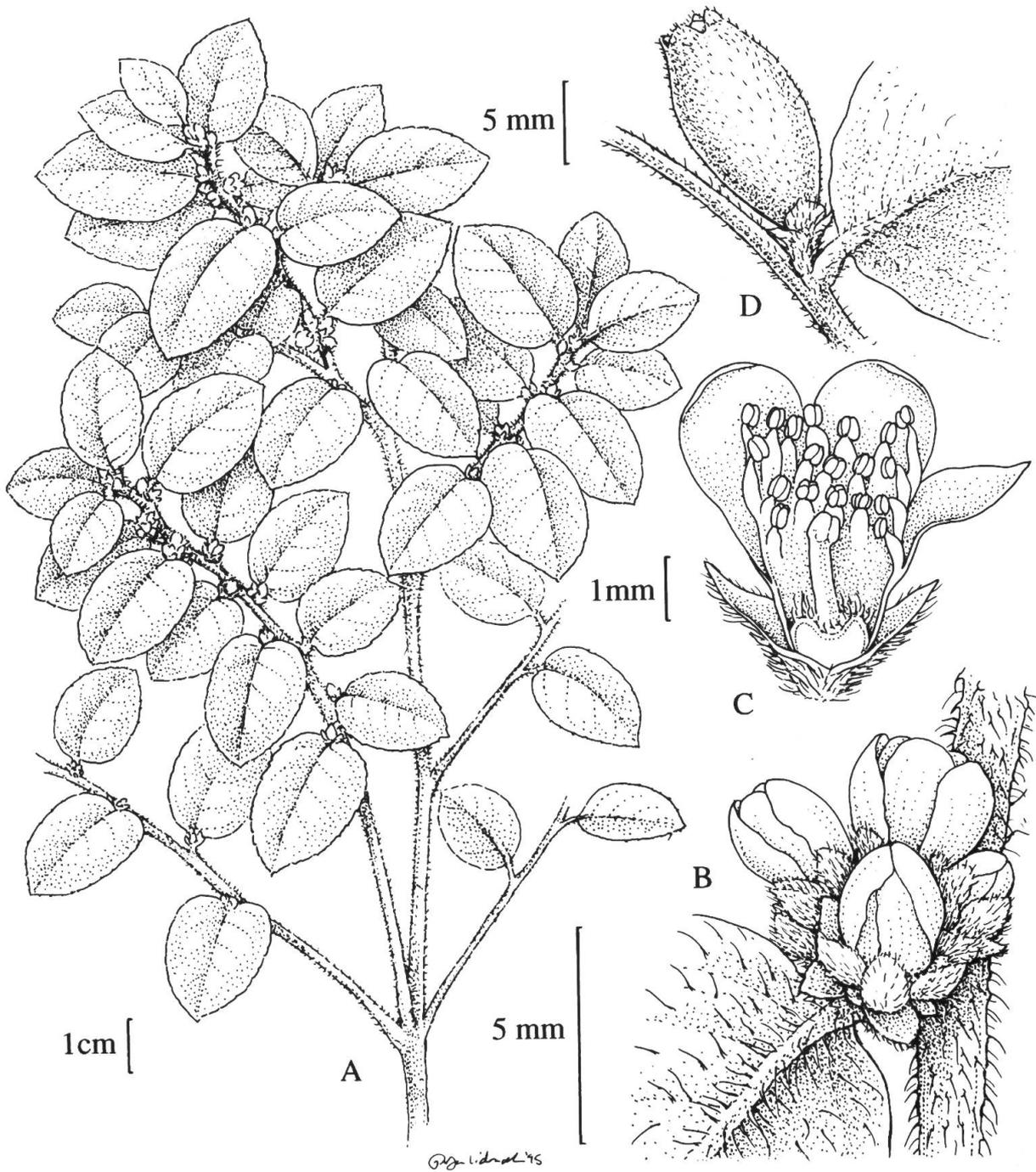


Fig. 3. – *Symplocos lehmannii* Brand
A, flowering branches; **B**, inflorescences; **C**, flower cut open to show pistil and stamens; **D**, fruit (**A**, Zarucchi & Brant 5360; **B**, **C**, Lehmann 7456, type; **D**, Bro. Tomas 2067).

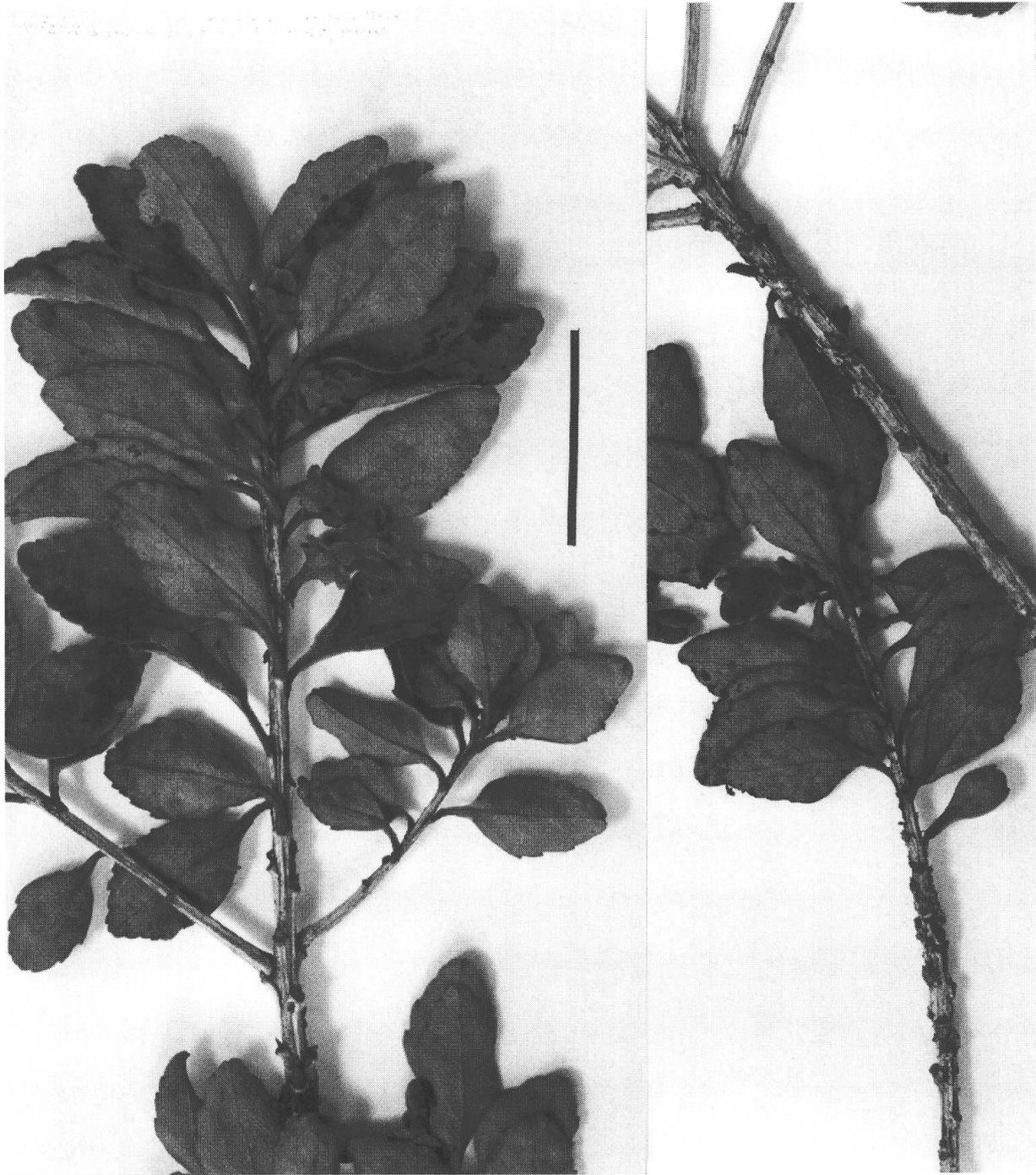


Fig. 4. – *Symplocos rhochoidea* B. Stahl
Photos of holotype, MacDougal & al. 4391 (S). Scale: 2 cm.

impressed above, lateral veins and veinlets prominulous beneath, prominulous or in level with surface above; petiole 0.2–0.5 cm long, subcanaliculate, glabrous. Flowers solitary in the axils of the uppermost leaves, pedicels 0.1–0.4 cm long, glabrous, often somewhat recurved; bracts 5, inserted just beneath calyx, glabrous, the outermost oblong, 3×2 mm, keeled, the inner broadly ovate, 2.5×3.5 mm. Calyx glabrous, tube 1.5 mm long, lobes very broadly ovate, 2.5×3.5 mm, margins very sparsely ciliolate. Corolla purple, glabrous, 9 mm long including tube 1.5 mm, lobes 5, broadly oblong, 4–5.5 mm wide, margins entire. Stamens 50–60 in 4 or 5 rows, tube 5 mm long, free filaments $0.2\text{--}1.5 \times 0.5\text{--}0.7$ mm, smooth; anthers $0.3 \times 0.4\text{--}0.5$ mm. Disc dome-shaped, puberulous; style 6 mm long, glabrous; stigma capitate, 3-lobed; ovary 3-locular with 2 ovules in each locule. Fruits not seen.

This new species is easily distinguished because of its small, glabrous, more or less angular leaves with distinctly serrulate margins, glabrous and greyish branchlets, and solitary, rather large flowers. Among Colombian Symplocaceae it comes closest to *S. theiformis*, but differs from that species in shape and size of the leaves, and by having larger, pedicellate flowers. It is possibly more closely related to *S. nana* Brand, a small-leaved páramo species distributed from southern Ecuador to northern Bolivia (STÄHL, 1991, 1994). However, also that species has smaller flowers than *S. rhomboidea*, and it differs also in several vegetative and floral characters.

Known only from a single locality in the Cordillera Central.

Specimen examined. – **Antioquia:** Páramo de Frontino, Llano Grande, 3450 m, 6 Jan 1984 (fl.), Londoño & al. 65 (COL).

7. *Symplocos rigidissima* Brand, Pflanzenr. IV.242: 75. 1901. **Type:** Colombia, Dept. Norte de Santander, Pamplona, Apr 1843 (fl.), *Linden 1339* (lectotype, G, selected here; isolectotypes, GH, K; fragment, F; photo of G in F, GH, MO). (Fig. 5).

– *Symplocos lutescens* auct. non Brand: García Barriga, Fl. Med. Colombia 2: 383. 1992, p.p.

Shrub or small tree to 5 m high; young branches reddish brown to dark brown, smooth, glabrous, older branches exfoliating. Leaves short-petiolate, rarely sessile, dark green or brownish red when dried; blade obovate, rarely elliptic or oblanceolate, $(2.5\text{--})4.5\text{--}6(-7.5) \times (1.5\text{--})2.4\text{--}3.5$ cm, cartilaginous, glabrous, base attenuate, sometimes shortly so, apex rounded and minutely retuse, rarely obtuse, margins entire from middle to base, at base usually revolute, towards apex often vaguely glandular-crenate, rarely glandular-serrulate, with 2–4(–10) glands per side; mid-vein prominent beneath, impressed above, lateral veins prominent beneath, \pm channelled or sometimes in level with surface above, veinlets rather conspicuous, at least beneath; petiole $(0.2\text{--})0.4\text{--}0.6(-0.8)$ cm, glabrous, usually plane above. Inflorescences fasciculate, sessile or with a peduncle to 2 mm long, borne among and beneath the foliage, with 2–5 flowers. Bracts 3 or 4, ovate, glabrous, margins ciliate. Calyx glabrous, tube 0.7–1 mm long, lobes broadly ovate, $1.5\text{--}2 \times 2\text{--}2.5$ mm, margins ciliate. Corolla white or light pink, glabrous, 4.5–6 mm long including tube 1–1.5 mm long, lobes 6–8, oblong, 2.5–3 mm wide, margins entire. Stamens 50–85 in 3 or 4 rows, filament tube 1.5–2.5 mm long, free filaments white, $0.2\text{--}2.5 \times 0.3\text{--}0.5$ mm, papillose; anthers yellow, $0.3\text{--}0.4 \times 0.3\text{--}0.4$ mm. Disc dome-shaped, glabrous; style 2–2.5 mm long, glabrous; stigma capitate, indistinctly 3-lobed; ovary 3-locular with 3 ovules in each locule. Fruits ellipsoid to slightly obovoid, $7\text{--}9.5 \times 4\text{--}5.5$ mm, dark brown, rather smooth, glabrous, persisting calyx lobes enclosing style base.

Symplocos rigidissima is distinguished by its tough, medium-sized leaves, fasciculate, axillary inflorescences, and in being glabrous throughout. It is similar in many features to *S. theiformis*, and although the leaves of *S. rigidissima* are generally larger, small-leaved specimens may be hard to distinguish from that species. The only reliable character then is the larger number of flowers per inflorescence in *S. rigidissima*. It is also very similar to *S. fuscata* Stähl of southern Ecuador. However, that species has not the channelled adaxial leaf venation of *S. rigidissima*; *S. fuscata* differs also in having the disc puberulous and fewer stamens per flower. In leaf shape and

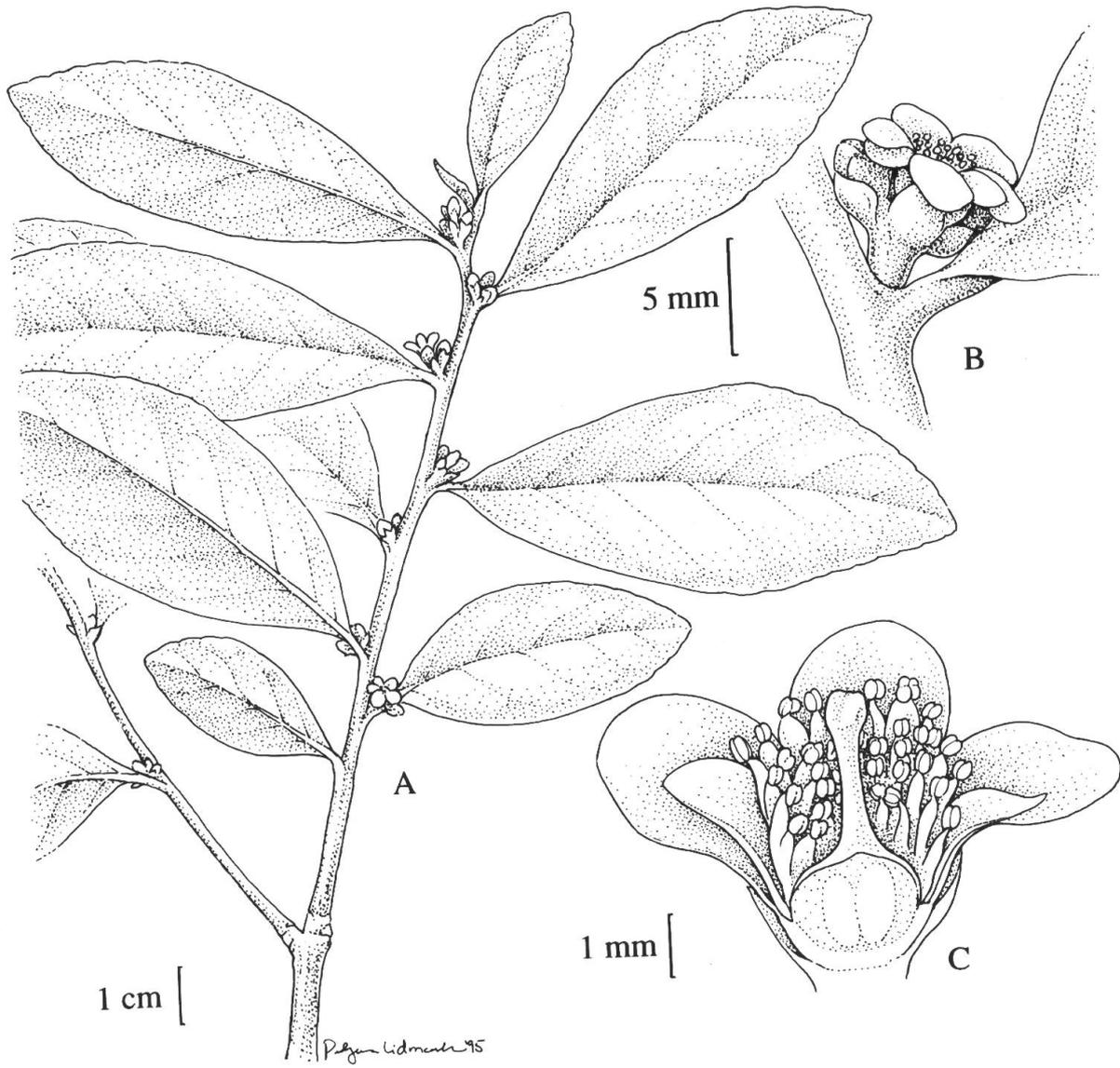


Fig. 5. – *Symplocos rigidissima* Brand
A, flowering branch; B, inflorescence; C, flower in longitudinal section (Killip & Smith 20741).

floral arrangement, *S. rigidissima* is also similar to *S. suaveolens* Klotsch ex Brand of Venezuela, a species with generally much longer petioles, strigose lower leaf sides, and strigulose floral parts.

The species is rather well collected. It is distributed in páramo and scrub páramo in the northern part of Cordillera Oriental and has also been recorded from Cordillera de Mérida in southern Venezuela (ARISTEGUIETA, 1957).

Vernacular name. – ovito (Norte de Santander).

Specimens examined. – **Norte de Santander:** Páramo de Fontibón, 2600-2750 m, 16 Oct 1941 (fl.), *Cuatrecasas & al.* 12332 (COL, F, GH, US); same loc., 2500 m, 20 Feb 1939 (fl.), *Alston* 7176 (BM, F, S, US). Alto de las Coronadas, S of Pamplona, 29 Nov 1946 (fl.), *de Garganta* 1300 (F). On road between Pamplona and Toledo, at divide between Río La Teja and Río Mesme, 2500-2800 m, 27-28 Feb 1927 (fl.), *Killip & Smith* 19850 (A, GH, NY, US); 19881 (A, GH, NY, US). Western slope of Páramo del Hatico, 2800-2900 m, 12-13 Mar 1927 (fl.), *Killip & Smith* 20675 (A, BM, COL, GH, MO, NY, US); 20730 (A, GH, NY, US); 20741 (A, F, GH, NY, S, US). E slope of Páramo de Saturbán, towards Mutiscua, 3600-3900 m, 20 Feb 1927 (fl.), *Killip & Smith* 19598 (A, GH, NY, US). 116 km from Bucaramanga on road to Pamplona, ca. 72°43'W, 07°22'N, 2650 m, 4 May 1983 (fl.), *Croat* 56449 (MO, NY). Pamplona, ca. 2750 m, Feb 1847 (fl.), *Funck & Schlim* 1647 (syntype of *S. rigidissima*; F, G, K). Quebrada de Carionga, near Pamplona, 2500 m, 26 Jul 1940 (fl.), *Cuatrecasas & García Barriga* 10252 (F, US). S of Pamplona, 18 Mar 1945 (fl.), *de Garganta* 989 (F, US). Between Pamplona and Cucutilla, 23 Mar 1944 (fl.), *de Garganta* 753 (F, US). Valley of Río Chitagá, below Presidente, 2900-3000 m, 21 Jul 1940 (ster.), *Cuatrecasas & García Barriga* 10069 (COL, US). Ocaña, Páramo de San Pedro, 3000-4000 m, Jan 1851 (fl.), *Schlim* 298 (syntype of *S. rigidissima*; G, K). – **Santander:** Bucaramanga, Páramo de Tourtiño, 3350 m, May 1948 (fl.), *Sandeman* 6039 (COL, K). Páramo del Almorzadero, Peralonso, 3200 m, 19 Jul 1940 (fr.), *Cuatrecasas & García Barriga* 9921 (COL, US). – **Boyacá:** Mpio. de Socotá, on road to Páramo de Pisba, 2950 m, 30 Sep 1981 (fr.), *Camargo* 8050 (COL). Mpio. de Aquitania, near Río Cusiana, 2800 m, 15 Jul 1974 (fl.), *Huertas & Camargo* 6920 (COL). S side of valley of Río Gomeza, 6 km E of Socha, 72°55-57'W, 06°00'N, 3050 m, 11 Nov 1944 (fl.), *Fosberg* 22311 (NY, US). – **Without precise locality:** “Prov. de Ocaña, 3000-4000 m, no date, *Herb. Triana* 315 (COL).

8. *Symplocos decorticans* B. Ståhl, spec. nova

Type: Colombia, Dept. Norte de Santander/Cesar Border, 20 km S of Abrego, Las Jurisdicciones (Cerro de Oroque), 3700-3950 m, 19-21 May 1969 (fl.), *García Barriga & Mejía* 19791 (holotype, US).

Frutex vel arbor ad 5 m alta, surculis glabris, laevibus, rubro-brunneis, ramulis exfoliatis. Folia sessilia vel subsessilia; lamina obovata, 3.5-6 × 1.8-2.5 cm, coriacea, glabra, basi truncato vel cordato sed ut videtur breviter angustato, apice obtuso vel rotundato, margine glanduloso-crenulato versus apicem, ad basim valde revoluta, glandibus utroque latere 4-7, costa infra prominenti, supra leviter impressa, venis lateralibus venulisque infra prominulis, supra inconspicuis. Inflorescentiae laterales, fasciculatae, sessiles, floribus (1-)2-4. Bractee circiter 3, glabrae. Calyx glaber, tubo 1.5 mm longo, lobis perlate ovatis, 3-4 × 3-5 mm, marginibus integris. Corolla violacea, glabra, 6-7 mm longa, lobis 5, late oblongis, 4-5 mm latis, marginibus integris. Stamina 60-70, quadrifaria, tubo 3 mm longo, filamentis liberis 0.5-2 × 0.4-0.5 mm, papillosis, antheris 0.5 × 0.6 mm. Discus tholiformis, sparsim strigulosus. Stylus glaber, 3.5-4 mm longus, stigmatibus subcapitato, obscure lobato. Ovarium quinqueloculare, ovulis in quoque loculo 3. Fructus ignotus.

Shrub or tree to 5 m high; young shoots and branchlets glabrous, reddish brown, the bark smooth, older parts exfoliating. Leaves sessile or subsessile, greenish brown when dried; blade obovate, 3.5-6 × 1.8-2.5 cm, coriaceous, glabrous, base truncate or cordate but seemingly short-attenuate, apex obtuse or rounded, margins glandular-crenulate towards apex, strongly revolute

at base, glands 4-7 per side; midvein prominent beneath, slightly impressed above, towards base above usually \pm verrucose, lateral veins and veinlets prominulous beneath, in level with surface and inconspicuous above. Inflorescences lateral, borne among the foliage, fasciculate, sessile. Bracts ca. 3, glabrous, broadly ovate, $2-3 \times 2-3.5$ mm, keeled, gland-tipped. Flowers (1-)2-4. Calyx glabrous, tube 1.5 mm long, lobes very broadly ovate, $3-4 \times 3-5$ mm, margins ciliolate. Corolla violet red, glabrous, 6-7 mm long including tube ca. 1.5 mm long, lobes 5, broadly oblong, 4-5 mm wide, margins entire. Stamens 60-70 in 4 whorls, tube 3 mm long, free filaments $0.5-2 \times 0.4-0.5$ mm, papillose; anthers 0.5×0.6 mm. Disc dome-shaped, sparsely strigulose; style glabrous, 3.5-4 mm long, stigma subcapitate, indistinctly lobed. Ovary 5-locular with ca. 3 ovules in each locule. Fruits not seen.

Symplocos decorticans is distinguished by its smooth, glabrous branchlets with the bark peeling off on older parts, rather small, sessile leaves with the margins strongly revolute at base, and robust flowers with some rather unusual features, such as dome-shaped disc and 5-locular ovary. It is very similar to *S. rigidissima*, but differs from that species in more robust, 5-merous flowers with broader corolla lobes, and by having the disc strigulose and the ovary 5-locular.

It is known only from a restricted area in northern Colombia where few collections of *Symplocos* have been made.

Specimen examined. – **Norte de Santander:** Cerro Oroque, 41 km S of Abrego on road towards La María, ca. $73^{\circ}10'W$, $07^{\circ}50'N$, 2800-3000 m, 16 Apr 1984 (fl.), *Pipoly & Monje 6948* (COL).

9. *Symplocos venulosa* Cuatrec., Fieldiana, Bot. 27: 111. 1950. **Type:** Colombia, Dept. Huila, Cordillera Oriental, between Gabinete and Andalucía, 2200-2300 m, 24 Mar 1940 (fl.), *Cuatrecasas 8579* (holotype, F; isotypes, COL, US).

Tree to 8 m high, stem to 10 cm diam; young shoots and branchlets glabrous, terete, smooth, dark brown. Leaves petiolate, when dried reddish-brown beneath, dark green above, the midvein on both sides \pm brown; blade obovate to oblanceolate or elliptic to broadly elliptic, $2.5-8.5 \times 1.5-5$ cm, cartilaginous, glabrous, base truncate or short-attenuate, apex obtuse or rounded, usually somewhat retuse, margins glandular-crenate along upper half with 5-10 glands per side, entire and often revolute from middle to base; midvein and lateral veins prominent beneath, midvein and often lateral veins impressed above, veinlets prominulous, at least beneath; petiole (0.2-)0.5-1.2 cm long, glabrous, canaliculate, somewhat winged. Flowers solitary or in groups of 2 or 3, solitary flowers sessile, when in groups these sessile or with peduncle to 3 mm long; bracts 3 or 4, very broadly ovate, ca. 2×3 mm, sparsely strigulose, margins ciliate. Calyx strigulose on midvein, otherwise glabrous, tube 1.5 mm long, lobes broadly ovate, 2×3 mm, margins ciliate. Corolla deep red, glabrous, 7 mm long including tube 1.5 mm long, lobes 7-9, oblong, 3 mm wide, margins entire. Stamens ca. 40 in 2(3) rows, filament tube 2.5 mm long, free filaments $1-2 \times 0.4-0.5$ mm, smooth; anthers 0.3×0.4 mm. Disc annular, strigulose; style 3 mm long, glabrous; stigma capitate, 3-lobed; ovary 3-locular with 3 ovules in each locule. Fruit on short peduncle to 2 mm long, cylindrical or narrowly ellipsoid, $9-11 \times 6$ mm, somewhat rugose when dry, glabrous, strigulose on style base, otherwise glabrous, persisting calyx lobes erect.

This species is superficially similar to *S. rigidissima*, but is readily distinguished from that species by its distinctly petiolate leaves with a reddish brownish coloration of the lower surfaces and slightly raised venation on the upper. In addition, the flowers are somewhat larger and the stamens fewer than those of *S. rigidissima*.

It is distributed in the Cordillera Oriental in Central Colombia where it grows in upper montane forest.

Vernacular name. – injerto (Huila).

Specimens examined. – **Cundinamarca:** Páramo Tablazo, $74^{\circ}14'W$, $05^{\circ}00'N$, 3000-3200 m, 6 Jul 1990 (immature fr.), *Pipoly & Orozco 12070* (S). – **Huila:** 15 km NE of Algeciras, near Campamento La Jirona, 2600 m, 26 Mar 1944 (fr.), *Little 7484* (COL, NY, US). Mule trail from

La Jironda to El Salado, 15 km NE of Algeciras, 2600 m, 28 Mar 1944 (fl.), *Little 7500* (COL, US). – **Meta:** On trail along Huila-Meta divide, ca. 30 km ESE of Baraya, 2950 m, 26 Oct 1944 (fl.), *Little 8845* (US). – **Putumayo:** Cerro Portachuelo, Puento Sibiria, 2700 m, 28 Jul 1964 (immature fr.), *Soejarto 1152* (COL, ECON, GH).

The following two collections should possibly be referred to *S. venulosa*. They differ from the above material in broader leaves and larger flowers, although the extant material is too incomplete for a correct evaluation of the latter character. – **Putumayo:** S of Laguna de la Cocha, Quebrada de Santa Lucia, 2850 m, 8 Jan 1941 (fl.), *Cuatrecasas 11798* (F, US). – **Cauca [?]:** Páramo de Achupallas, 2900 m, Jun 1853 (fl.), *Triana "8239"* (COL).

10. *Symplocos cundinamarzensis* B. Ståhl, spec. nova

Type: Colombia, Dept. Cundinamarca, Páramo de San Miguel, western slope, 3000 m, 19 Apr 1946 (fl.), *Duque Jaramillo 3450* (holotype, COL).

– *Symplocos lutescens* auct. non Brand: García Barriga, Fl. Med. Colombia 2: 382. 1992, p.p.

Frutex vel arbor parva ad 4(-6) m alta, caule ad 10 cm diametro, surculis glabris, laevibus, fuscis. Folia petiolis 0.4-1 cm longis; lamina oblanceolata vel obovata, 3-6 × 1.5-2.5 cm, cartilaginea, glabra, basi breviter angustata vel angustata, apice rotundato, interdum obtuso vel parum retuso, margine subintegro vel obscure glanduloso-crenato, glandibus utroque latere 4-9, costa infra prominenti, supra impressa, utrinque venis lateralibus venulisque leviter prominulis. Flores solitarii, axillares, pedicellis 5-6 mm longis, vulgo recurvatis. Bractee 5, glabrae, marginibus ciliolatis. Calyx glaber, tubo 2.5 mm longo, lobis late ovatis, 3.5 × 3.5 mm, marginibus ciliolatis. Corolla rubra, glabra, 11 mm longa, lobis 5, oblongis, 5.5 mm latis, marginibus ciliolatis. Stamina 65-75, quadrifaria, tubo 5 mm longo, filamentis liberis 1-3 × 0.4-0.7 mm, nonnihil papillosis, antheris 0.3 × 0.4 mm. Discus annularis, dense hirsutus. Stylus 6-7 mm longus, versus basim strigosus, stigmatate capitato, trilobato. Ovarium triloculare, ovulis in quoque loculo 3. Fructus ellipsoideus, 11-15 × 7-9 mm, laevis, preter apicem strigulosum glaber.

Shrub or small tree, to 4(-6) m high, stem to 10 cm diam.; young shoots and branchlets glabrous, smooth, dark brown. Leaves petiolate, when dried brownish beneath and dark green above; blade oblanceolate or obovate, 3-6 × 1.5-2.5 cm, cartilaginous, glabrous, base attenuate, usually shortly so, apex rounded or sometimes obtuse or slightly retuse, margins subentire or vaguely glandular-crenate, glands 4-9 per side; midvein prominent beneath, impressed above, lateral veins and veinlets prominulous on both sides; petiole 0.4-1 cm long, subcanaliculate, glabrous. Flowers solitary, borne among and beneath the foliage, pedicels 5-6 mm long, mostly recurved. Bracts 5, inserted just beneath the calyx, ca. 4 × 4 mm, glabrous, margins ciliate. Calyx glabrous, tube 2.5 mm long, lobes broadly ovate, 3.5 × 3.5 mm, margins ciliate. Corolla red, glabrous, 11 mm long including tube ca. 2.5 mm long, lobes 5, oblong, 5.5 mm wide, margins ciliate. Stamens 65-70 in 4 rows, filament tube 5 mm long, free filaments 1-3 × 0.4-0.7 mm, slightly papillose; anthers 0.3 × 0.4 mm. Disc annular, densely hirsute; style 6-7 mm long, sparsely strigose at base; stigma capitate, 3-lobed; ovary 3-locular with 3 ovules in each locule. Fruits ellipsoid, 11-15 × 7-9 mm, smooth, strigulose at style base, otherwise glabrous, persisting calyx lobes erect or spreading.

This new species is in many respects similar to *S. venulosa* but differs in having the flowers solitary and distinctly larger. Furthermore, in *S. cundinamarzensis* the flowers are borne on reflexed pedicels, the stamens are more numerous and arranged in 4 rows, the fruits are larger, and the corolla margins are ciliate (vs. entire).

The species has been collected in upper montane forests southwest of Bogotá.

Vernacular name. – estoraque de páramo.

Specimens examined. – **Cundinamarca:** Alto del Cuchuco, near San Miguel, 2800 m, 5 Nov 1973 (fl.), *Chaparro 167* (COL). Mpio. de Subachoque, Cerro el Tablazo, 3400-3450 m, 1

Sep 1983 (fr.), *Diaz & Regueiro 4236* (COL). Mpio. Sibaté, Sabaneta, Telecom tower, 3000 m, 30 Oct 1987 (fl.), *Morales & al. 1136* (COL). – **Without locality:** no date (fl.), *Mutis 3698* (US).

11. *Symplocos crassulacea* B. Ståhl, *spec. nova*

Type: Colombia, Dept. Santander, Mesa de los Santos, 1500 m, 11-15 Dec 1926 (fl.), *Killip & Smith 15166* (holotype, A; isotypes, GH, NY, US). (Fig. 6).

Frutex ad 2 m altus, surculis glabris, laevis, atro-brunneis. Folia petiolis 0.3-0.5 mm longis; lamina late elliptica vel obovata, 4-11 × 2.5-5.5 cm, coriacea, glabra, pagina superiore nitida, basi breviter angustata, apice rotundato vel retuso, margine integro, eglanduloso, leviter revoluto, costa infra prominenti, supra leviter impressa, venis lateralibus utrinque prominulis, venulis inconspicuis. Inflorescentiae laterale, fasciculatae, brevissimae pedunculatae vel sessiles, floribus 3-8. Bracteeae 3, caducae, strigulosae. Calyx sparsim strigosus, tubo 1.5 mm longo, lobis perlate ovatis, 2 × 2.5 mm, marginibus ciliolatis. Corolla alba, glabra, 3.5-4 mm longa, lobis 5, late oblongis, 2-2.5 mm latis, marginibus integro vel obscure erosis. Stamina circiter 40, bifaria, tubo 1 mm longo, filamentis liberis 0.5-1.2 × 0.3-0.4 mm, papillosis, antheris 0.4 × 0.5 mm. Discus annularis, puberulo-strigosus. Stylus 1.5 mm longus, glaber, stigmatate capitato. Ovarium triloculare, ovulis in quoque loculo circiter 2. Fructus ignotus.

Shrub to ca. 2 m high; young shoots and branchlets glabrous, dark brown, the bark smooth. Leaves petiolate, greenish brown when dried; blade broadly elliptic or obovate, 4-11 × 2.5-5.5 cm, coriaceous, glabrous, nitidous above, base short-attenuate, apex rounded or retuse, margins somewhat revolute, entire, eglandular; midvein prominent beneath, slightly immersed above, lateral veins prominent on both sides, veinlets inconspicuous; petiole 0.3-0.5 cm long, plane or subcanaliculate, glabrous. Inflorescences lateral, borne among the foliage, fasciculate, very short-pedunculate or sessile; bracts 3, caducous, strigulose, broadly ovate to ovate, 1.5-3 × 1.5-2 mm. Flowers 3-8. Calyx sparsely strigulose, tube 1.5 mm long, lobes very broadly ovate, 2 × 2.5 mm, margins ciliate. Corolla white, glabrous, 3.5-4 mm long including tube ca. 0.7 mm long, lobes 5, broadly oblong, 2-2.5 mm wide, margins entire to vaguely erose. Stamens ca. 40 in 2 rows, tube 1 mm long, free filaments 0.5-1.2 × 0.3-0.4 mm, papillose; anthers 0.4 × 0.5 mm. Disc annular, puberulous-strigulose; style 1.5 mm long, glabrous; stigma capitate; ovary 3-locular with ca. 2 ovules in each locule. Fruits not seen.

Vegetatively this new species is distinguished by smooth, thick leaves with glossy upper surfaces and entire, eglandular margins, as well as by its rather small, fasciculate flowers.

Known only from the type collection.

12. *Symplocos silverstonei* B. Ståhl, *spec. nova*

Type: Colombia, Dept. Chocó, Mun. San José de Palmar, Cordillera San Miguel, between Cerró de Torrá and Cerro Panamá, 2500-2600 m, 18 Aug 1988 (fl.), *Silverstone-Sopkin & al. 4553* (holotype, GB). (Fig. 7).

Frutex vel arbor ad 4 m alta, surculis glabris, leavibus, brunneis pallidis. Folia petiolis 0.3-0.5 cm longis; lamina late vel perlate elliptica, 3-6.5 × 2-4.5 cm, cartilaginea, glabra, basi truncata vel cordata, apice rotundato, raro obtuso vel retuso, margine interdum leviter revoluto, dimidio distale glanduloso-crenato, glandibus utroque latere 10-20, costa venis lateralibusque infra prominentibus, supra nonnihil impressis, venulis inconspicuis vel invisibilibus. Inflorescentiae laterales, fasciculatae, sessiles vel pedunculis ad 0.5 cm longis, floribus 2-4. Bracteeae 4, glabrae. Calyx glaber, tubo 2 mm longo, lobis perlate ovatis, 3-3.5 × 3.5-4 mm, marginibus ciliolatis. Corolla rosea, glabra, 8-9 mm longa, lobis 5 vel 6, oblongis, 3-4 mm latis, marginibus integris. Stamina 70-80, quadri- vel quinquefaria, tubo 3 mm longo, filamentis liberis 0.5-2.5 × 0.3-0.5 mm, laevibus, antheris 0.3 × 0.3 mm. Discus annularis, pilulosus. Stylus 4 mm longus, glaber, stigmatate capitato, obscure quadrilobato. Ovarium quadriloculare, ovulis in quoque loculo 3. Fructus ignotus.



Fig. 6. – *Symplocos crassulacea* B. Ståhl
Photo of holotype, Killip & Smith 15166 (A). Scale: 2 cm.

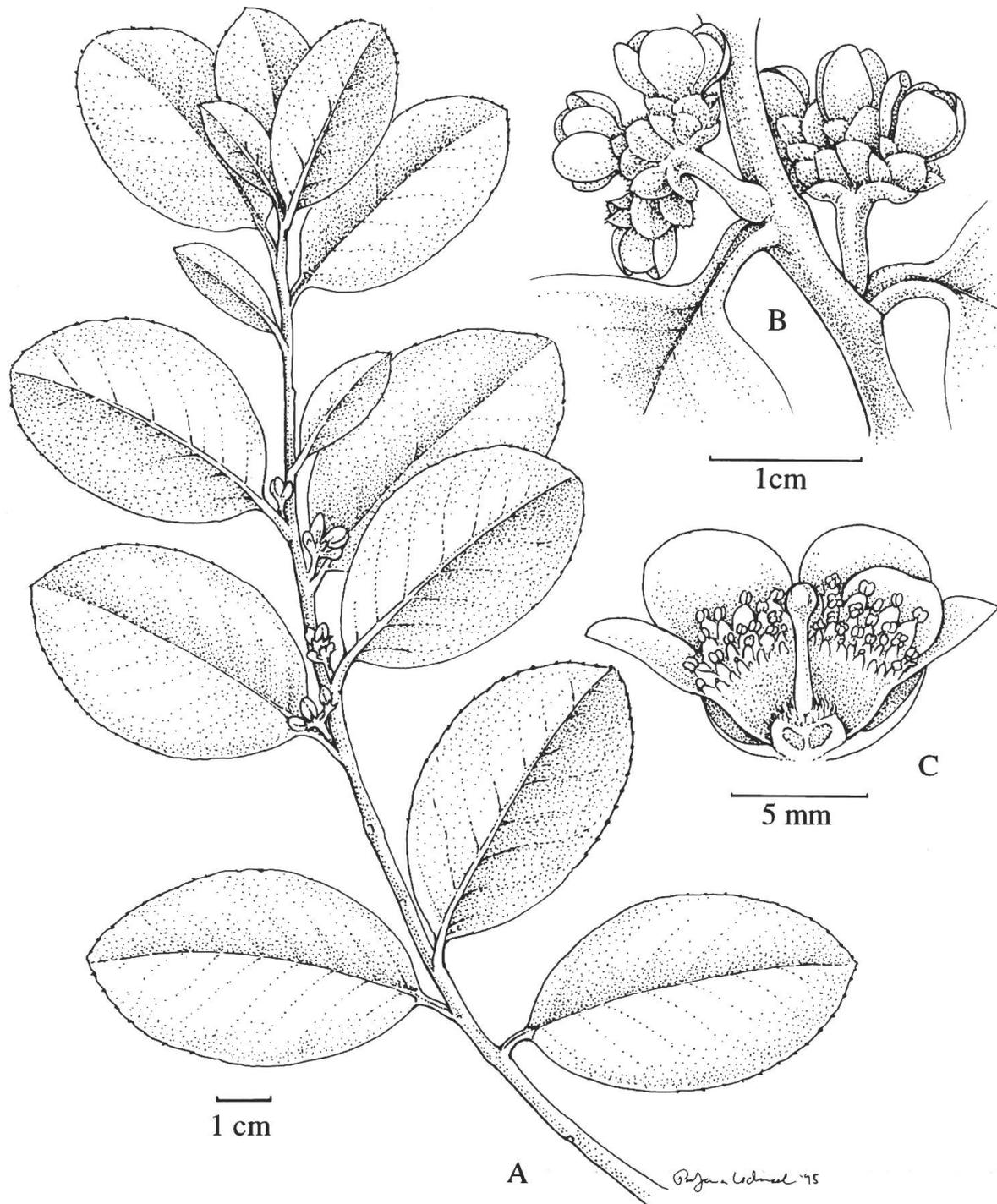


Fig. 7. – *Symplocos silverstonei* B. Stahl
 A, flowering branch; B, inflorescences; C, flower in longitudinal section (A, *Silverstone-Sopkin & al.* 4553, type; B, *Silverstone-Sopkin & al.* 4636; C, *Silverstone-Sopkin & al.* 4479).

Shrub or tree to 4 m high; young shoots and branchlets terete, glabrous, the bark smooth, pale brown. Leaves short-petiolate, brownish-green when dried; blade broadly to very broadly elliptic, 3-6.5 × 2-4.5 cm, cartilaginous, glabrous, base truncate or cordate, apex rounded, rarely obtuse or retuse, margins plane or very slightly revolute, from middle to apex glandular-crenate, glands 10-20 per side; midvein and lateral veins prominent beneath, somewhat impressed above, veinlets inconspicuous or invisible; petiole 0.3-0.5 cm long, subcanaliculate, glabrous. Inflorescences lateral, borne among the foliage, fasciculate, sessile or short-pedunculate with peduncles to 0.5 cm long, glabrous. Flowers 2-4; bracts 4 inserted just beneath the calyx, very broadly ovate, 3.5 × 3-3.5 mm, glabrous, margins ciliolate. Calyx glabrous, tube 2 mm long, lobes very broadly ovate, 3-3.5 × 3.5-4 mm, margins ciliolate. Corolla pink, glabrous, 8-9 mm long including tube ca. 2 mm long, lobes 5 or 6, oblong, 3-4 mm wide, margins entire. Stamens 70-80 in 4 or 5 rows, tube 3 mm long, free filaments 0.5-2.5 × 0.3-0.5 mm, smooth; anthers 0.3 × 0.3 mm. Disc annular, pilulose; style 4 mm long, glabrous; stigma capitate, obscurely 4-lobed; ovary 4-locular with 3 ovules in each locule. Fruits not seen.

Apart from the 4-locular ovary, *S. silverstonei* lacks obvious features to distinguish it from other species of *Symplocos* with broad, medium-sized leaves and fasciculate inflorescences. In comparison to *S. rigidissima* and *S. decorticans*, the two species it superficially resembles most, it has generally broader leaves with more marginal glands, and larger flowers; from *S. rigidissima* it differs also in lacking channelled adaxial venation and by having the disc pilulose, and from *S. decorticans* in distinctly petiolate leaves (vs. sessile or subsessile). In leaf shape *S. silverstonei* also resembles *S. crassulacea*, but that species has eglandular leaf margins and much smaller flowers.

Symplocos silverstonei was collected during one of three expeditions to Cerro Torrá, an isolated and phytogeographically interesting mountain west of Cordillera Occidental (SILVERSTONE-SOPKIN & RAMOS-PÉREZ, 1995).

Specimens examined. – **Chocó:** Mun. San José de Palmar, Cordillera San Miguel, Cerro de Torrá, 2700-2800 m, 21 Aug 1988 (fl.), *Silverstone-Sopkin & al.* 4636 (GB); E slope of Cerro de Torrá, 17 Aug 1988 (fl.), *Silverstone-Sopkin & al.* 4479 (GB).

13. *Symplocos ramuliflora* B. Ståhl, spec. nova

Type: Colombia, Dept. Cauca, Macizo Colombiano, near Lago Cusiyaco, 3200 m, 7-12 Oct 1958 (fl.), *Idrobo & al.* 3891 (holotype, COL; isotype, P). (Fig. 8).

Arbor ad 6 m alta, surculis glabris, laevibus, rubro-brunneis. Folia petiolis 0.8-1.3 cm longis; lamina elliptica, 5-7.5 × 2.2-3.4 cm, cartilaginea, basi breviter angustata, apice breviter obtuso-acuminato, margine nonnihil revoluta, dimidio distale obscure crenato, glandibus utroque latere 7-14, pagina inferiore sparsim strigosa, pagina superiore glabra, costa infra prominenti, supra impressa, venis lateralibus venulisque prominulis. Inflorescentiae laterales, sessiles, fasciculatae, floribus 3-10. Bractae 5, glabrae. Calyx glaber, tubo 1.2 mm longo, lobis perlate ovatis, 1.2 × 1.2 mm, marginibus ciliatis. Corolla alba, glabra, 4.5 mm longa, lobis 5(6), oblongis, 1.5-2.5 mm latis, marginibus integris. Stamina circiter 35, bifaria, tubo 1.5 mm longo, filamentis liberis 0.5-1.5 × 0.4-0.5 mm, laevibus, antheris 0.3 × 0.4 mm. Discus annularis, dense strigosus. Stylus glaber, 1.5 mm longus, stigmatibus capitato, trilobato. Ovarium triloculare, ovulis in quoque loculo 3. Fructus ignotus.

Tree to 6 m high; young shoots and branchlets glabrous, reddish brown, the bark smooth. Leaves long-petiolate, brownish green when dried; blade elliptic, 5-7.5 × 2.2-3.4 cm, cartilaginous, sparsely strigose beneath, glabrous and nitidous above, base short-attenuate, apex shortly obtuse-acuminate, margins slightly revolute, distally vaguely crenate, glands 7-14 per side; midvein prominent beneath, impressed above, lateral veins and veinlets prominulous on both sides; petiole 0.8-1.3 cm long, glabrous, plane or subcanaliculate above. Inflorescences fasciculate, sessile, lateral, borne mainly on branches beneath the foliage. Flowers 3-10, slightly fragrant. Bracteoles 5, broadly ovate, 1.5-2.2 × 1.5-2.2 mm, glabrous, margins ciliate. Calyx glabrous,



Fig. 8. – *Symplocos ramuliflora* B. Stahl
Photo of holotype, *Idrobo & al.* 3891 (COL).

tube 1.2 mm long, lobes very broadly ovate, 1.2×2 mm, margins ciliate. Corolla white, glabrous, 4.5 mm long including tube ca. 1 mm long, lobes 5(6), oblong, 1.5-2.5 mm wide, margins entire. Stamens ca. 35 in 2 whorls, tube 1.5 mm long, free filaments $0.5-1.5 \times 0.4-0.5$ mm, smooth; anthers 0.3×0.4 mm. Disc annular, densely strigose, style glabrous, 1.5 mm long, stigma capitate, 3-lobed, ovary 3-locular with 3 ovules in each locule. Fruits not seen.

Symplocos ramuliflora is somewhat reminiscent of *S. rigidissima*, but is easily distinguished from that species by its long-petiolate leaves with strigulose lower sides, fewer stamens, and more flowers per fascicle. In addition, although some inflorescences occur in the leaf axils, most of them are borne along the branchlets beneath the foliage.

The species is known only from the type collection made in montane forest east of the divide in Cordillera Central.

14. *Symplocos flosfragrans* Chaparro, *Mutisia* 40: 1-4, figs. 1-2. 1976. **Type:** Colombia, Dept. Cundinamarca, Mpio. Junín, 60-61 km on road from Guasca to Sueva, 2700 m, 26 Apr 1975 (fl.), *Chaparro 177* (holotype, COL; isotypes, COL, F, G, GH, MO).

Tree to 11 m high; young shoots and branchlets glabrous, brown, smooth. Leaves petiolate, brownish beneath, dull green with brownish veins above; blade obovate or elliptic, $4-10 \times 2.5-6$

cm, glabrous, coriaceous or chartaceous, base short-attenuate or cuneate, apex rounded or obtuse, usually minutely retuse, margins \pm glandular-crenate along upper half, glands 5-13 on each side, caducous; midvein and lateral veins prominent beneath, impressed and \pm channelled above, veinlets prominent but rather inconspicuous beneath, usually conspicuous and somewhat impressed above; petiole 0.4-0.8(-1.0) cm, glabrous or slightly puberulous above, upper surface plane or subcanaliculate. Inflorescences lateral, fasciculate, pedunculate except towards apex, the peduncle 4-8 mm long, glabrous. Bracts 4, very broadly ovate, persistent, the basal bract 5×5 mm, glabrous and somewhat keeled, with margins ciliolate, the inner bracts strigose except towards margins. Flowers 3-5, very fragrant. Calyx tube 1.5 mm long, densely hispid at base, lobes very broadly ovate, 4.5×4.5 mm, densely strigose in centre, margins ciliolate. Corolla white, glabrous, 10 mm long including tube ca. 3 mm, lobes 10, arranged in two rather distinct whorls of 5 each, those of the outer whorl broadly ovate to oblong, 4-5 mm wide, those of the inner whorl oblong, 3-3.5 mm wide, margins sparsely and irregularly ciliolate. Stamens 80-90 in 4(5) whorls, tube 4 mm long, free filaments $0.5-1.5 \times 0.4-0.7$ mm, smooth, constricted part 0.1-0.4 mm long; anthers 0.3×0.4 mm. Disc densely strigose, annular. Style 4 mm long, gradually broadening towards apex, glabrous; stigma capitate, indistinctly 3-lobed. Ovary 3-locular with 3 or 4 ovules in each locule. Fruits ellipsoid $12-14 \times 10$ mm, puberulous, glabrescent, persistent calyx lobes erect.

Symplocos flosfragrans shows some vegetative similarities with *S. rigidissima* and *S. venosa*, although the leaves of *S. flosfragrans* are generally larger and much coarser; from these two species it differs also by having pedunculate inflorescences, larger flowers, and strigulose corollas. The description of the fruit was drawn from information in CHAPARRO (1976).

The species was described from material collected in Cordillera Oriental in Colombia, but has also been recorded from the Tachira State in southern Venezuela [*Steyermark & Dunsterville 101990* (NY)].

Specimens examined. – **Norte de Santander:** Mpio Herrán, Tama National Park, the Orocus Sector, towards Alto del Pesebre, 2650-3020 m, 2 Apr 1987 (fl.), *Lozano & al. 5514* (COL). Alto de Majuey, on road between Chinácoto and Toledo, $72^{\circ}35'W$, $07^{\circ}30'N$, 2400-2600 m, 8 Mar 1986 (fl.), *Stein 3634* (S). – **Cundinamarca:** Los Andes, E slope towards Río Blanco, 14 km WSW of Junín, 2900 m, 19 Apr 1944 (fl.), *Grant 9060* (NY, US). – **Meta:** Mpio. El Calvario, N of San Francisco, 2500 m, 5 Mar 1981 (fl.), *Camargo & Huertas 7891* (COL).

15. *Symplocos sararensis* Cuatrec., Fieldiana, Bot. 27: 112. 1950. **Type:** Colombia, Dept. Norte de Santander, environs of El Sarare, Quebrada de Sararito, 1900-1950 m, 22 Oct 1941 (fr.), *Cuatrecasas & al. 12580* (holotype, F; isotypes, COL, GH). (Fig. 9).

Shrub or small tree; young shoots and branchlets glabrous, reddish brown, the bark smooth. Leaves distinctly petiolate, reddish brown when dried, at least beneath; blade obovate or oblanceolate, $3.5-9.5 \times 1.5-4.5$ cm, glabrous, coriaceous, base narrowly attenuate, apex obtuse or shortly obtuse-acuminate with acumen to 0.5 cm long, margins glandular-denticulate or glandular-crenulate, entire towards base, glands 10-40 per side; midvein prominent beneath, deeply immersed above, lateral veins and veinlets prominulous beneath, in level with surface above; petiole 0.7-1 cm long, winged, canaliculate, glabrous. Inflorescences lateral, borne among the foliage, fasciculate, pedunculate or sessile; peduncle to 6 mm long, 1 mm thick, glabrous; bracts 3, strigulose-puberulous, ovate to broadly ovate, $2 \times 2-3$ mm, keeled, margins ciliolate. Flowers 2-4. Calyx tube glabrous, 1 mm long, lobes very broadly ovate, 1.7×2.2 mm, strigulose in the middle, margins ciliolate. Corolla white, glabrous, 5-6 mm long including tube ca. 1 mm long, lobes 6, broadly oblong to broadly ovate, 2-3.5 mm wide, margins entire. Stamens 50-60 in 3 rows, tube 2 mm long, free filaments $0.5-1.5 \times 0.4$ mm, smooth; anthers ca. 0.3×0.3 mm. Disc annular, densely strigulose; style 1.5 mm long, glabrous, stigma capitate, obscurely lobed; ovary 3-locular with 3 ovules in each locule. Fruits broadly ellipsoid to subglobose, $5-6.5 \times 4-5$ mm, glabrous.

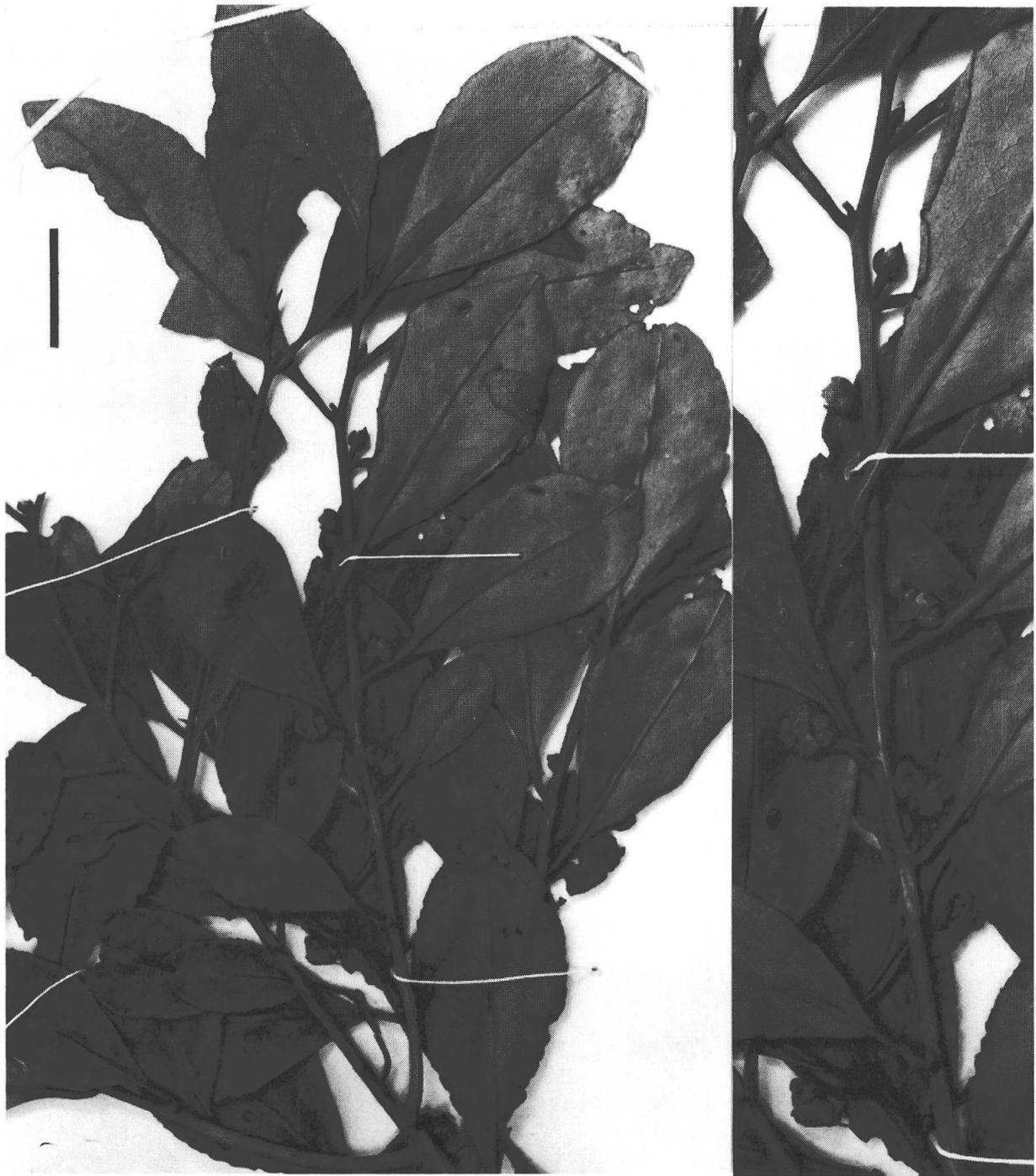


Fig. 9. – *Symplocos sararensis* Cuatrec.
Photos of Lozano & Días 3714 (COL). Scale: 2 cm.

This is a poorly known species, the three available collections being rather incomplete. Vegetatively it is easily distinguished by the comparatively long-petiolate, obovate to oblanceolate, reddish brown leaves with usually numerous marginal glands, as well as by its pedunculate inflorescences and small fruits and flowers.

Symplocos sararensis has been collected in montane forest in Cordillera Oriental in northern Colombia.

Specimens examined. – **Santander:** Mpio. Gámbita, El Volcán, 2100 m, 11 Nov 1981 (bud), Villamil 59 (COL). – **Boyacá:** Mpio. Arcabuco, La Cumbre, Bosque de Robles, 2300 m, 8 Oct 1980 (fl.), Lozano & Días 3714 (COL).

16. *Symplocos rimosa* B. Ståhl, *spec. nova*

Type: Colombia, Dept. Magdalena, Mpio. Santa Marta, San Lorenzo, on slopes toward television tower, 2750 m, 12 May 1983 (fl.), Escobar & Santa 3565 (holotype, MO). (Fig. 10).

Arbor parva saltem ad 3 m alta, surculis glabris, brunneis pallidis, aliquantum angularibus, cortice fissuratis. Folia petiolis 0.2-0.5 cm longis; lamina late obovata vel subelliptica, 4-9 × 2.5-5 cm, cartilaginea vel coriacea, glabra, basi breviter angusta vel angustata, apice rotundato vel retuso, margine glanduloso-denticulato, glandibus utroque latere 15-25, ad basim absentes, costa infra prominenti, atro-brunnea, supra impressis, venis lateralibus venulisque consicuis, utrinque vulgo prominulis, infra saepe fusco-brunneis. Flores solitarii, praecipue sub foliis portati, sessiles vel pedicellis ad 5 mm longis. Bractee 5, strigulosae, marginibus ciliolatis. Calyx tubo 2.5 mm longo, glabro, lobis perlate ovatis, 3.5-4 × 4-4.5 mm, plus minusve strigulosus, marginibus sparsim ciliolatis. Corolla rubra, glabra, 6-7 mm longa, lobis circiter 7, late ovatis, 3.5-5 mm latis, marginibus obscure ciliolatis. Stamina 80-90, quadri- vel quinquefaria, tubo 3.5 mm longo, filamentis liberis 0.5-1.5 × 0.4-0.5 mm, laevibus, antheris 0.3 × 0.4 mm. Discus annularis, glaber. Stylus 4 mm longus, glaber, nonnihil complatus, stigmatate capitato, obscure trilobato. Ovarium triloculare, ovulis in quoque loculo 3. Fructus ignotus.

Small tree to at least 3 m high; young shoots and branchlets glabrous, pale brown, somewhat angular, the bark fissured. Leaves short-petiolate, brownish or yellowish brown when dried; blade broadly obovate or almost elliptic, 4-9 × 2.5-5 cm, cartilaginous or coriaceous, glabrous, base short-attenuate or attenuate, apex rounded or retuse, margins plane or revolute, glandular-denticulate, glands 15-25 per side, absent at base, midvein prominent and dark brown beneath, impressed above, lateral veins and veinlets conspicuous, usually prominulous on both sides, often dark brown beneath; petiole 0.2-0.5 cm long, glabrous, plane above. Flowers solitary, borne mainly on branchlets just beneath the foliage, sessile or with pedicels to 5 mm long, these strigulose or glabrous; bracts 5, inserted just beneath the calyx, strigulose, the outermost oblong to ovate, 2.5 × 3.5 mm, keeled and gland-tipped, the innermost broadly ovate, 4 × 4.5 mm, margins ciliolate. Calyx tube 2.5 mm long, glabrous, lobes very broadly ovate, 3.5-4 × 4-4.5 mm, sparsely to densely strigulose, margins sparsely ciliolate. Corolla red, glabrous, 6-7 mm long including tube ca. 1 mm long, lobes ca. 7, broadly ovate, 3.5-5 mm wide, margins vaguely ciliolate. Stamens 80-90 in 4 or 5 rows, tube 3.5 mm long, free filaments 0.5-1.5 × 0.4-0.5 mm, smooth; anthers 0.3 × 0.4 mm. Disc annular, glabrous; style 4 mm long, glabrous, somewhat flattened; stigma capitate, obscurely 3-lobed; ovary 3-locular with 3 ovules in each locule. Fruits not seen.

This new species is distinguished by broad, tough leaves with denticulate margins, solitary, sessile or short-pedicellate flowers, and by having the bark on young branchlets more or less fissured.

The species is evidently endemic to Sierra Nevada de Santa Marta.

Specimens examined. – **Magdalena:** Mpio. Santa Marta, Cerro Quemado, 2600-2800 m, 15 Apr 1959 (fl.), Romero-Catañeda 7701 (COL). Alto Buritaca, 2900 m, 13 Aug 1977 (ster. or fruits lost), Rangel & Cleef 911 (COL).



Fig. 10. – *Symplocos rimosa* B. Stahl
Photo of holotype, Escobar & Santa 3565 (MO). Scale: 2 cm.

- 17. *Symplocos fimbriata*** B. Ståhl, Fl. Ecuador 43: 37, fig. 18B-C. 1991. **Type:** Ecuador, Prov. Pichincha, SW slope of Loma Tablarumi, 9 km E of Olmedo on road to Laguna San Marcos, 78°02'W, 00°08'N, 3400-3500 m, 18 Dec 1987 (fl. & fr.), *Molau & Eriksen 2095* (holotype, GB; isotypes, AAU, QCA).

The collection cited below is tentatively referred to *S. fimbriata*, a species described from central Ecuador (STÄHL, 1991) and also recorded from north-central Peru (STÄHL, 1993). It is characterised by rather large and long-petiolate leaves with densely glandular-denticulate margins and large, solitary flowers borne on long and usually recurved pedicels. The sole Colombian collection differs from the Ecuadorian and Peruvian material in having the lower leaf surface glabrous and the filaments papillose.

Specimen examined. – **Valle:** Cordillera Central, Cerro Pan de Azúcar, 3600 m, 26 Feb 1969 (fl.), *Cuatrecasas & al. 27540* (US).

- 18. *Symplocos fuliginosa*** B. Ståhl, Fl. Ecuador 43: 9, fig. 3. 1991; *Candollea* 48: 375, fig. 11. 1993. **Type:** Ecuador, Prov. Pichincha, 15 km from Alóag on road to Santo Domingo, 1100-1400 m, 78°30'W, 00°25'S, 15 Apr 1988 (fl.), *Zak & Jaramillo 3451* (holotype, GB).

Symplocos fuliginosa is easily recognised by its unusually large leaves and fruits. However, lacking flowers the single specimen available from Colombia is here tentatively referred to that species. The material agrees perfectly in fruit morphology and leaf shape, but differs from material from Ecuador and Peru by having the leaves even larger (15-23 × 9-11 cm). Furthermore, the Colombian specimen has branchlets with decurrent wings, a feature that also sets it apart. Having been collected in a protected forest, more and better material of this population is expected and should be sought for.

Specimen examined. – **Nariño:** Mpio. Ricaurte, Reserva Natural La Planada, 1800 m, 31 May 1989 (fr.), *Beltrán WB-019* (MO).

- 19. *Symplocos lutescens*** Brand, Pflanzenr. IV.242: 76. 1901. **Type:** Colombia, “oak forest at Chorrera [?]”, possibly Aug 1845 (fl.), *Purdie s.n.* (K, two specimens, F fragment; B, destroyed, photo in F, GH, NY). (Fig. 11).

Shrub or tree; young shoots hirsute, branches greyish. Leaves petiolate, brownish beneath and dark green above when dried; broadly elliptic, 1.5-3 × 1.5-2 cm, coriaceous, strigose on midvein beneath, glabrous above, base short-attenuate, apex obtuse and minutely retuse, margins somewhat revolute, crenate except towards base; midvein and lateral veins prominent beneath, midvein impressed above, veinlets prominulous on both sides, conspicuous above; petiole 0.2-0.6 cm long, slightly hirsute, canaliculate. Flowers solitary, not studied in detail, sessile or borne on short, somewhat recurved pedicels. Fruits not seen.

A poorly known and possibly extinct species known from the type collection only. It is distinguished by strigose young shoots, greyish branchlets, small coriaceous leaves with distinctly crenate margins and a conspicuous adaxial venation, and rather small, solitary flowers.

- 20. *Symplocos pichindensis*** Cuatrec., Fieldiana, Bot. 27: 110. 1950. **Type:** Colombia, Dept. El Valle, E slope of Cordillera Occidental, valley of Río Cali, near Río Pichindé, ridge of Los Cárpatos, 2250-2350 m, 24 May 1946 (fl.), *Cuatrecasas 21662* (lectotype, F, selected here; isolectotypes, COL, F, P). (Fig. 12).

Tree to at least 10 m high, stem to ca. 25 cm diam.; young shoots and branchlets densely brownish-pilose or tomentose, the bark more or less verrucose, pale to dark brown. Leaves petiolate, brown when dry; blade narrowly ovate to lanceolate or elliptic to narrowly elliptic, 4-7.5(-10) × 1.5-3(-4) cm, coriaceous, pilose or tomentose beneath, densely so on midveins and lateral veins, the upper side glossy, pilose on midvein, otherwise glabrous, base truncate or subcordate, rarely short-attenuate, apex obtuse or shortly obtuse-acuminate, margins entire, eglandular,



Fig. 11. – *Symplocos lutescens* Brand
Photo of type, Purdie s.n. (K). Scale: 2 cm.

somewhat revolute; midvein and lateral veins prominent beneath, impressed above, veinlets rather conspicuous beneath, less so above; petiole 0.3-0.6 cm, canaliculate, densely brownish-pilose. Inflorescences lateral, subsessile, composed of 2-5 densely set fascicles with 3-5 flowers each. Bracteoles 3, densely strigose-tomentose, the outermost one very broadly ovate, 3×3.5 mm, the innermost ovate, $2.5 \times 2-2.5$ mm. Calyx densely strigose, tube 1 mm long, lobes ovate, 1.8×1.8 mm. Corolla white, glabrous, 3.5-4 mm long, including tube 1 mm long; lobes 5, narrowly oblong, margins vaguely erose. Stamens 30-35 in 3 rows, tube 2 mm long, free filaments $0.2-1 \times 0.2-0.3$ mm, papillose; anthers 0.2×0.2 mm. Disc annular, densely pilulose; style 1.5 mm long, glabrous; stigma capitate, 3-lobed. Ovary 3-locular with 1-3 ovules in each locule. Fruits not seen.

This is a very distinctive species characterised by dense, axillary inflorescences, minute flowers, a dense brownish indumentum on vegetative and floral parts, and though leaves with glossy upper surfaces. It has been collected only twice and may well be a threatened species. In vestiture and some floral features it somewhat resembles *S. lehmannii*, but differs from that species in inflorescence architecture and larger leaves with glandular margins.

Known only from two collections made in the Valle Department.

Specimen examined. – **Valle:** Cordillera Occidental, above Alto de Mira, between Tabor and Carrizales, 2100-2350 m, 23 Oct 1946 (ster.), *Cuatrecasas* 22457 (F).



Fig. 12. – *Symplocos pichindensis* Cuatrec.
Photos of lectotype, Cuatrecasas 21662 (F). Scale: 2 cm.

- 21. *Symplocos mucronata*** Bonpl. in Humb. & Bonpl., Pl. Aequin. 1: 196. 1805. **Type:** Colombia, no date (fl.), *Mutis s.n.* (holotype, P). (Fig. 13).
 ≡ *Praealstonia mucronata* (Bonpl.) Miers, J. Linn. Soc. London 17: 292. 1879.

Tree to 15 m, sometimes higher, stem to at least 20 cm diam.; young shoots and branchlets flattened, glabrous, dark brown, smooth. Leaves petiolate, brownish-green when dried, at least below; blade elliptic or oblanceolate, 6-13 × 4-5 cm, subcoriaceous, glabrous, base attenuate, apex acute, obtuse or short-acuminate, the acumen to 10 mm long, margins densely glandular-denticulate with 20-35 glands per side, towards base usually strongly revolute and eglandular; midvein and lateral veins prominent beneath, midvein usually impressed above, veinlets rather conspicuous; petiole 0.4-0.8 cm long, seemingly longer because of revolute leaf margins, subcanaliculate or plane above, glabrous. Inflorescences little-branched panicles, lateral, borne on branchlets among and beneath the foliage, 0.5-1.5 cm long, glabrous throughout. Flowers 3-6(-9), fragrant. Bracts 3, glabrous, ovate, 1.5-2 × 1.5-2 mm, margins ciliolate. Calyx glabrous, tube 1.5 mm long, lobes very broadly ovate, 1.5 × 2 mm, margins ciliolate. Corolla white, glabrous, 8-10 cm long, including tube ca. 3 mm long, lobes 5, broadly to narrowly oblong, 3-3.5 mm wide, margins entire or faintly erose. Stamens 35-45 in 4 rows, tube 4 mm long, free filaments 0.5-3 × 0.5-3 mm, faintly papillose; anthers 0.5 × 0.4 mm. Disc annular, glabrous; style 6-7 mm long; stigma capitate, 5-lobed; ovary 5-locular with 2 ovules in each locule. Fruits broadly ellipsoid to subglobose, 10-12 × 7-10 mm, glabrous, smooth, black or brown when dried, persistent calyx lobes involute or erect.

This species is easily distinguished vegetatively because of its dark, often more or less flexuose branchlets, densely glandular-denticulate leaf margins which usually are strongly revolute towards base, and clusters of rather large axillary flowers. It somewhat resembles *S. fuliginosa* B. Ståhl of Ecuador and Peru, a species with larger flowers and pubescent (vs. glabrous) leaves and floral parts. The revolute lower leaf margins make it also similar to *S. andicola* B. Ståhl of central Peru, but that species has the leaves sessile and villous or pilose beneath; in addition, the flowers of *S. andicola* are larger and have more stamens. Its closest relative may well be *S. amplifolia* Brand from Andean Venezuela. This species differs in its sparsely strigulose lower leaf surfaces and inflorescences, and somewhat broader leaves.

Symplocos mucronata has a comparatively wide distribution, having been collected in montane forests throughout most of central and southern Colombia.

Specimens examined. – **Antioquia:** San Pedro, Dec 1937 (bud), *Bro. Daniel 2100* (F); same locality, Mar 1939 (fl.), *Bro Tomas 489* (US). Mpio. Urrao, on path to Páramo de Frontino, near Finca El Quince, 76°10'W, 06°30'N, 2900 m, 18 Nov 1988 (fr.), *McPherson & al. 13108* (S). Mpio. Jardín, S of Jardín, 75°50'W, 05°30'N, 2750 m, 29 Oct 1988, *McPherson & al. 12884* (S); 15 km SW of Jardín on road towards Riosucio, 2400-2800 m, 9 Jun 1987 (fr.), *Callejas & al. 3911* (COL, MO). Mpio. Sonsón, 12 km from Sonsón on road to Nariño, 75°15'W, 05°40'N, 2650 m, 12 Nov 1988 (fl.), *McPherson & Roldán 13052* (S). – **Boyacá:** Arcabuco, 2600 m, 20 Oct 1963 (fr.), *Espinal & Montenegro 1423* (COL). Duitama, El Huerto, 3000 m, 5 Mar 1964 (fl.), *Espinal & Montenegro 1565* (COL). – **Cundinamarca:** Chocontá, Páramo del Sisga, 2600-2850 m, 5 Nov 1960 (fr.), *García Barriga 17299* (NY). – **Huila:** Fortecillas, SE of Yucales, SE of San Antonio, 2000 m, 26 May 1944 (fl.), *Little 7953* (NY, P, US). La Plata, 2600 m, 23 Mar 1939 (fl.), *von Sneider 2852* (S). – **Cauca:** Road Belalcazar-Tacueyó, Km 35, 2475 m, 12 Sep 1980 (fr.), *Rangel 2545* (COL). Munchique National Park, La Romelia, 2650 m, 10 May 1979 (fr.), *Lobo 65* (COL).

- 22. *Symplocos quindiuensis*** Brand, Pflanzenr. IV.242: 77. 1901. **Type:** Colombia, Dept. Quindío, El Roble, 24 Nov 1853 (fl.), *Holton 620* (lectotype, G, selected here; isolecotypes, F fragment, GH, K; photo of G in F, GH). (Fig. 14).

Tree to 10 m high; young shoots and branchlets glabrous, smooth. Leaves greenish when dried, petiolate; blade elliptic or oblanceolate, 6-11 × 1.8-4 cm, coriaceous, glabrous, base attenuate, apex acuminate with acumen 0.5-1.5 cm long, margins minutely glandular-denticulate,

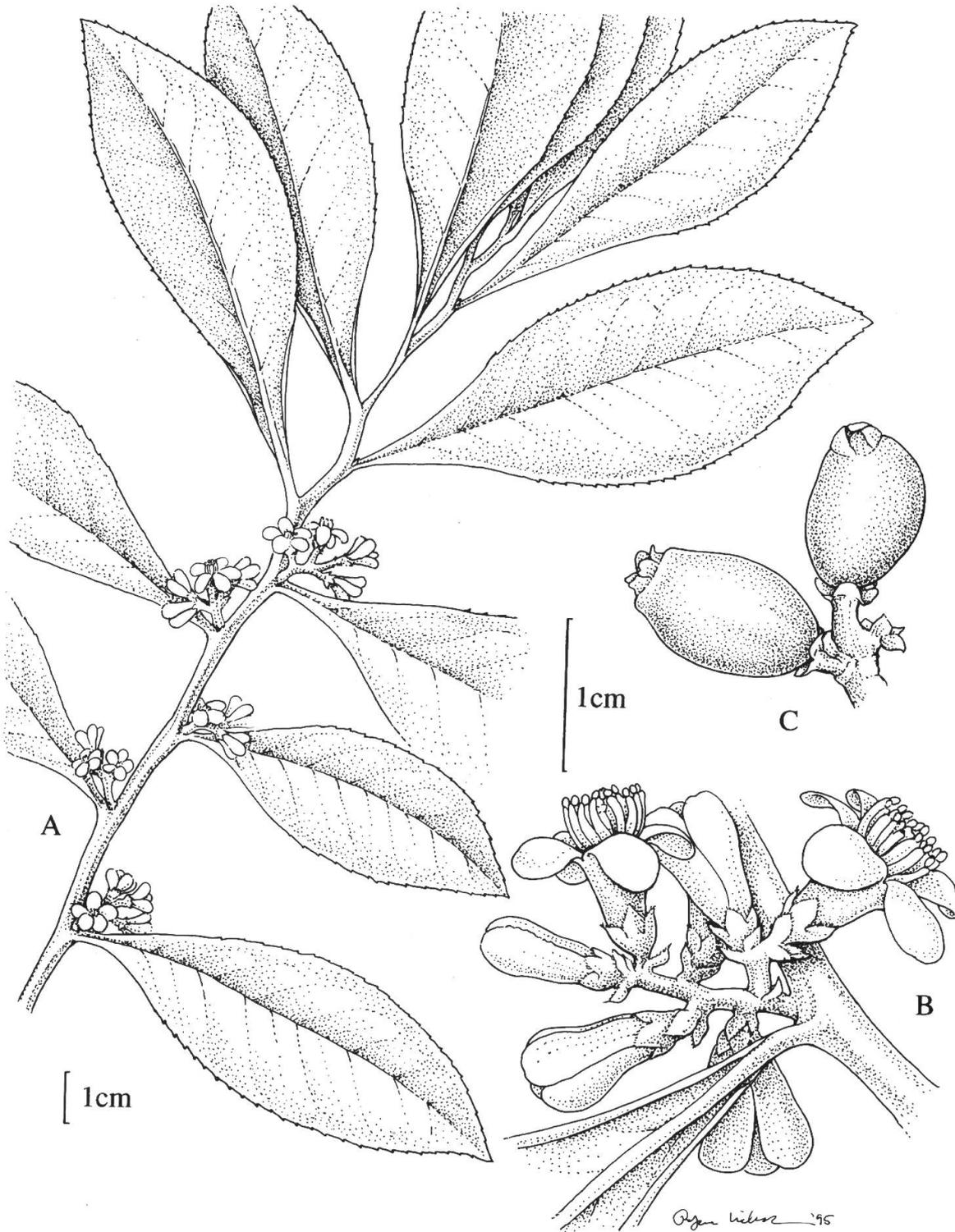


Fig. 13. – *Symplocos mucronata* Bonpl.
A, flowering branch; B, inflorescence; C, fruits (A, B, McPherson & Roldán 13052; C, McPherson & al. 12884).



Fig. 14. – *Symplocos quindiuensis* Brand
Photos of Lehmann 451. Scale: 2 cm.

sometimes vaguely glandular-crenulate, often revolute, with 8-16 pairs of glands; midvein prominent beneath, distinctly impressed above, lateral veins and veinlets inconspicuous; petiole 0.4-0.8 cm long, subcanaliculate, glabrous. Inflorescence a little-branched panicle or fascicle, borne among and beneath the leaves, if fasciculate then sessile or with peduncle to 0.5 cm long. Flowers 4-8, fragrant. Bracteoles 5, inserted just beneath the calyx, ovate, glabrous or strigulose on the midvein, margins ciliolate or subentire. Calyx glabrous, tube 1 mm long, lobes very broadly ovate, 1.2-1.5 × 2 mm, margins ciliolate. Corolla glabrous, white, 7-8 mm long including tube ca. 2 mm long, lobes 5(6), oblong, 3 mm wide, margins very faintly ciliolate. Stamens 50-60 in 3(4) rows, filament tube 2-2.5 mm long, free filaments 0.5-2.5(-3) × 0.4-0.7 mm, smooth; anthers 0.3 × 0.4 mm. Disc annular, strigulose; style 4-5 mm long, glabrous; stigma subcapitate, indistinctly 3-lobed. Ovary 3-locular with 2 or 3 ovules in each locule. Fruits not seen.

Symplocos quindiuensis is similar to *S. mucronata*, particularly in being glabrous throughout and by having short, axillary inflorescences. It differs from that species in considerably smaller flowers and straight, not flexuous branches; generally it has also narrower and coarser leaves with indistinctly glandular margins. In addition, the leaves of *S. quindiuensis* dry greenish whereas those of *S. mucronata* become more or less brownish upon drying.

The species is restricted to the Cauca Valley, where it has been gathered in montane forests between 1500 and 2250 m altitude.

Specimens examined. – **Quindío:** Mpio. Filandia, Quebrada Buenavista, 1775 m, 16 Nov 1989 (fl.), Vélez & al. 666 (COL). – **Valle:** Quebradahonda, above La Glorieta on road to Miralindo, 2100-2250 m, 31 Oct-1 Nov 1944 (bud), Cuatrecasas 18399 (F, US). Río Cali, 1800 m, no date (fl.), Duque Jaramillo 1087 (F). – **Cauca:** El Rosario, near Río Huangubio, in highlands of Popayan, 1500-1800 m, May 1886 (fl.), Lehmann 451 (A, F, GH, K, L, NY, W). Río Damiau, 1800 m, Feb 1938 (fl.), Dryander 2083 (US).

23. *Symplocos serrulata* Bonpl. in Humb. & Bonpl., Pl. Aequin. 1: 190-193, tab. 54. 1805; García Barriga, Fl. Med. Colombia 2: fig. 282. **Type:** Colombia, Popayan, *Bonpland s.n.* (P-HBK). (Fig. 15).

- ≡ *Praealstonia serrulata* (Bonpl.) Miers, J. Linn. Soc. London 17: 292. 1879.
- = *Symplocos rufescens* Bonpl. in Humb. & Bonpl., Pl. Aequin. 1: 192-194, tab. 55. 1805. **Type:** Colombia, Quindío, *Bonpland s.n.* (not seen).
- ≡ *Praealstonia rufescens* (Bonpl.) Miers, J. Linn. Soc. London 17: 292. 1879.
- = *Symplocos tomentosa* Bonpl. in Humb. & Bonpl., Pl. Aequin. 1: 195. 1805. **Type:** Colombia, Ibagué, *Bonpland s.n.* (P-HBK, photo in F, GH).
- ≡ *Praealstonia tomentosa* (Bonpl.) Miers, J. Linn. Soc. London 17: 292. 1879.
- = *Symplocos gibraltarica* Cuatrec., Fieldiana, Bot. 27: 109-110. 1950. **Type:** Colombia, Valle, Cordillera Occidental, Gibraltar, N of Las Brisas between Cartago and Albán, 2100-2200 m, 25 May 1946 (fl.), Cuatrecasas 22524 (lectotype, F, selected here; islectotypes, COL, F).

Tree to 10 m high, stem to 25 cm diam.; young branches and shoots sparsely to densely brownish-pilose or tomentose, buds and undeveloped leaves very densely so, the bark usually somewhat verrucose, greyish to brown. Leaves short-petiolate, brownish or dark green when dried; blade narrowly to broadly oblanceolate or oblong, in small leaves often elliptic, 5-16(-18) × (2-)3.5-6(-8) cm, membranaceous to subcoriaceous or sometimes coriaceous, sparsely to densely pilose or tomentose beneath, densely so on veins, the upper surface pilose or tomentose in young leaves, eventually glabrous, base truncate to short-attenuate, apex acuminate with acumen 5-15(-20) mm long, sometimes acute or obtuse, margins sometimes slightly revolute, entire, denticulate, serrulate, or serrate, glandular, the glands 15-35 per side, caducous and often lacking in mature leaves; midvein and lateral veins prominent beneath, midvein impressed above, lateral veins in level with surface or sometimes somewhat impressed, veinlets inconspicuous to rather conspicuous; petioles 0.5-0.8 cm long, ± tomentose. Inflorescences lateral, borne among the foliage, fasciculate or paniculate with condensed lateral branches, sessile or with peduncle to 3.5 cm long, densely brownish-pilose. Flowers fragrant, 2-5 in each fascicle. Bracteoles ovate, 3-6 × 3-4 mm, caducous, strigose except along margins. Calyx densely strigose, tube 2-3 mm long, lobes broadly ovate, 4-5 × 4-5 mm, margins long-ciliate. Corolla pink to whitish, densely strigose in the middle, 15-17 mm long including tube 3-5 mm long, lobes 5, oblong to narrowly obovate, 6-7 mm wide, margins entire or sparsely ciliolate. Stamens 70-90 in 5-7 rows, filament tube 8-10 mm long, free filaments (0.5-)1.5-5 × 0.5-0.7 mm, papillose, at least on upper free part; anthers 0.6-0.8 × 0.4-0.7 mm. Disc annular, densely strigose; style 13-15 mm long, strigose on lower half; stigma capitate, 5-lobed. Ovary 5-locular with 3(-5) ovules in each locule. Fruits obovoid, sometimes ellipsoid or ovoid, (15-)18-26 × 9-14 mm, often rather irregular and obscurely 5-angled, ± brownish-tomentulose, at least at base and apex, style base mostly ± impressed.

An easily recognised species because of its large, brownish-pubescent leaves, shoots, and flowers. However, the leaves exhibit an extraordinary variation with regard to texture, amount of pubescence, and margin dentation. This variation is not, or poorly, correlated with the distribution of the species. The only exception are plants from Department Antioquia which have a tomentose rather than pilose kind of pubescence. However, being very similar in floral morpho-

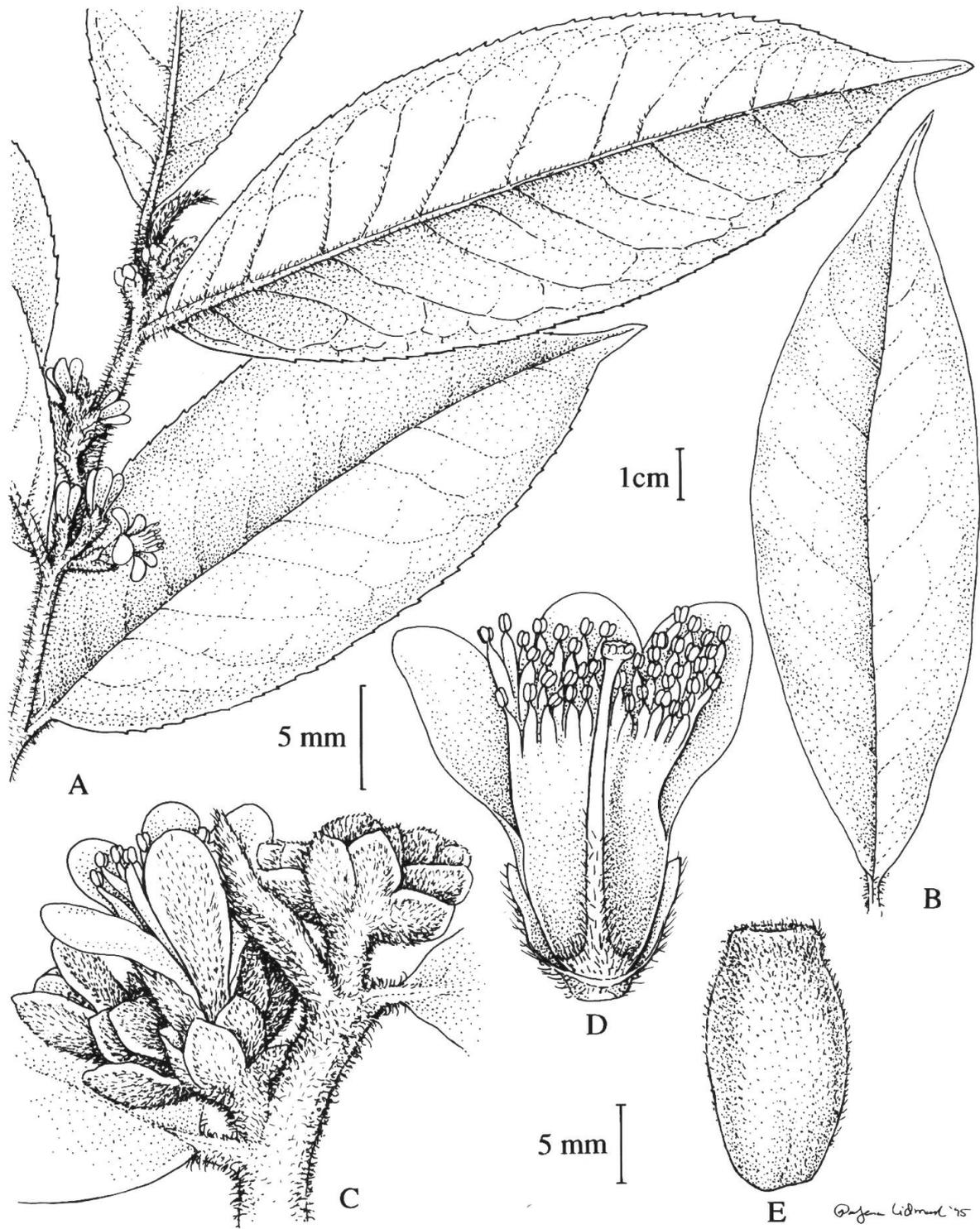


Fig. 15. – *Symplocos serrulata* Bonpl.
 A, flowering branch; B, leaf; C, inflorescence; D, flower cut open to show pistil and stamens; E, fruit (A, D, Core 1125;
 B, C, Killip & Hazen 9026; E, Fosberg 20325).

logy I am here following the broad taxonomic concept advocated by BRAND (1901), who merged three species described simultaneously by HUMBOLDT & BONPLAND (1805). Unfortunately Brand chose the name with the least suitable epithet.

Symplocos serrulata has been collected in wet montane forest throughout most of Colombia.

Vernacular names. – Pavas, fruto de pava (Antioquia); palo yanaconas (Valle); pepa de pavo (GARCÍA BARRIGA, 1992).

Specimens examined. – **Norte de Santander:** Vicinity of Ocaña, 1300 m, Feb 1850 (fl.), *Schlim 20* (K). “Ipotaré”, 1500-1800 m, Apr 1846-52 (fl.), *Schlim 522* (K). – **Antioquia:** La Ceja, 2250 m, Jul 1960 (fl.), *Espinal & Montenegro 113* (COL). San Antonio, Dec 1937 (fr.), *Bro. Daniel 2231* (US). Río Negro, 1800 m, Jul 1853 (fl.), *Triana “2623”* (K, NY); 2200 m, no date (fl.), *Triana s.n.* (P). Cerros de Alta Vista, above Belén, 2200 m, 1978 (fl.), *Espinal 4213* (COL). Mpio. Frontino, Murri, ca. 13 km from Nutibara, 76°20’W, 06°40’N, 2000 m, 10 Dec 1988 (fl.), *McPherson & al. 13423* (S). – **Tolima:** Prov. de Mariquita, 1200 m, no date (fl.), *Triana “4259-9”* (COL). – **Quindío:** Salento, Río Santa Rita, 1700-1900 m, 29 Jul 1922 (fl.), *Killip & Hazen 9026* (GH, K, NY, US). Mpio. Salento, Vereda Río Arriba, Hda. El Cairo, 2000 m, 2 Jun 1988 (fl.), *Arbeláez & al. 2585* (COL, MO). – **Cundinamarca:** Mpio de Soacha, Salto de Tequendama, 2400-2450 m, 18 Mar 1974 (fl.), *Chaparro 174* (NY); same locality, no date (fr. & fl.), *Triana s.n.* (NY); 2622 (K). Mpio de Tena, near Laguna de Pedropalo, 2050 m, 9 Jun 1967 (fr.), *Majia & al. 2703* (COL); same locality, 6 Jun 1983 (fl.), *Ayala 47* (COL). – **Huila:** Finca Encanto, 30 km NW of Palermo, 2200 m, 10 Oct 1944 (fl.), *Little 8790* (COL, US). E of La Silencia along Río Negro, 30 km ESE of Baraya, 2100 m, 30 Oct 1944 (fr.), *Little 8884* (US). Mpio. La Argentina, abov Finca Palmira, 2100-2350 m, 28 Sep 1984 (fl.), *Lozano & al. 4240* (COL). Below Gabinete in the Abra de San Andrés Valley, 1900-2100 m, 24 Mar 1940 (fl.), *Cuatrecasas 8660* (COL, F, US). San Agustín, 28 Mar 1899 (fl.), *Sprague 324* (K, US). – **Valle:** Valley of Río Cali, Pichindé, 1700 m, Jul 1938 (fl.), *Duque-Jaramillo 4156* (COL). Alto de las Brisas, 2150 m, 27 Oct 1944 (fl.), *Cuatrecasas 18244* (F). Yanaconas, 1500 m, no date (fl.), *Duque 1684* (US). – **Cauca:** Mpio. El Tambo, Guazabarita, 14 Jan 1965 (fl.), *Idrobo 5635* (COL). Between Quebrada Obscuridad and La Isla, headwaters of Río Dinde, 2000 m, 28 Aug 1944 (fl.), *Core 1125* (G, NY, US). Finca El Salado, Río Machete near confluence with Río Piendama, 25 km N of Popayan, 76°34’W, 02°40’N, 1750-1800 m, 19 Mar 1943 (fr.), *Fosberg 20325* (NY, US). “Highlands of Popayan”, 1600-2000 m, Jan (fl. & fr.), *Lehmann 425* (A, F, G, GH, K, L, NY, W). Tuza, 1600-2000 m, no date (fl.), *Lehmann 6631* (F, K). W of Popayan, 1500-2000 m, Jun-Jul (fl.), *Lehmann 8527* (F, GH, K, S, US). – **Department unknown:** no locality, no date (fr.), *Mutis 3713, 4538* (US); no date (fl.), *Mutis 2479, 3703, 4365, 4606, 5210* (US); no date (fl.), *Mutis s.n.* (K).

24. *Symplocos quitensis* Brand, Pflanzenr. IV.242: 76. 1901; Ståhl, Fl. Ecuador 43: 13, fig. 5. **Type:** Ecuador, Prov. Tungurahua, Pilahuín, 3600-4000 m, *Jameson s.n.* (lectotype, K, selected in Ståhl, 1991)

Symplocos quitensis is characterised by rather small, broadly obovate, more or less pubescent leaves with mostly glandular-serrate margins, and short lateral racemes or little-branched panicles with small (5-7 mm long), pink or red flowers. It is one of the most widely distributed species of *Symplocos* in the Andes, reaching from southern Colombia to Bolivia. The Colombian material is referable to subspecies *quitensis* (STÅHL, 1993).

Specimens examined. – **Cauca:** Torotó, 1700 m, 4 Maj 1968 (postfl.), *Idrobo 6182* (COL). – **Huila:** Puracé National Park, 147-148 km from Popayan on road to Neiva, 76°21’W, 02°22’N, 3300 m, 6 Dec 1980 (fr.), *Croat 51960* (MO).

25. *Symplocos phaeoneura* B. Ståhl, spec. nova

Type: Colombia, Dept. Antioquia, Mpio. Guatapé, Vereda Santa Rita, Finca Montepinar, 1850 m, 5 Sep 1982 (fl.), *Linda Escobar & al.* 2326 (holotype, MO). (Fig. 16).

Arbol ad 8 m alta, surculis hirsutis, cortice laevi atro-brunnei. Folia petiolis 0.3-0.6 cm longis; lamina angusto obovata, obovata vel elliptica, 5-8.5 × 2-4 cm, coriacea, basi breviter angustata vel truncata, apice rotundato vel obtuso, margine sparsim glanduloso-crenulato vel integro, pagina inferiore ad costam dense strigosa, cetera sparsim strigosa, pagina superiore glabra, costa, venis lateralibus, venulisque infra prominentibus, fuscatis, costa supra impressa, venis lateralibus venulisque supra prominulis. Inflorescentiae laterales vel subterminales, paniculatae, sparsim ramosae, 2-3 cm longae, rhachidibus et rami floriferi confertim fusco-hirsutis, floribus ad apices ramorum aggregatis. Bracteeae 3, strigosae. Calyx tubo 1 mm longo, sparsim strigoso, lobis ovatis, 1.5 × 1.2 mm, strigulosus, marginibus ciliatis. Corolla viridi-alba, glabra, 4 mm longa, lobis late oblongis, 2-2.5 mm latis, marginibus obscure erosis. Stamina 20-25, bifaria, tubo 1 mm longo, filamentis liberis 0.5-1.5 × 0.3-0.4 mm, papillois, antheris 0.3 × 0.3 mm. Discus annularis vel planis, glaber. Stylus 1.5-1.7 mm longus, glaber; stigmatate subcapitato, trilobato. Ovarium triloculare, ovulis in quoque loculo 3 vel 4. Fructus ellipsoideus vel ovoideus, 7-8 × 5 mm, glaber vel versus apicem brunneo-strigosus, in sicco ater.

Tree to 8 m high; young shoots and branchlets brownish-hirsute, the bark smooth, dark brown. Leaves petiolate, brownish when dried; blade narrowly obovate, obovate, or elliptic, 5-8.5 × 2-4 cm, coriaceous, the lower side strigose, densely so on midvein, sparsely but evenly so on other areas, the upper side glabrous, base short-attenuate or truncate, apex rounded or obtuse, margins vaguely crenate, sparsely glandular or eglandular, slightly revolute or plane; veins and veinlets of the lower side prominent, darkened, the upper side with midvein impressed, lateral veins and veinlets prominulous; petiole 0.3-0.6 cm long, plane or canaliculate, brownish-hirsute. Inflorescences lateral or subterminal, little-branched panicles 2-3 cm long, rachis and inflorescence branches densely brownish-hirsute, the flowers aggregated in groups of 3-6 at tips of the inflorescence branches. Bracteoles 3, inserted just beneath the calyx, narrowly ovate, 2.5-4 × 1.5-2 mm, strigose. Calyx tube 1 mm long, sparsely strigose, lobes ovate, 1.5 × 1.2 mm, strigulose, margins ciliate. Corolla greenish-white, glabrous, 4 mm long including tube 0.5 mm long, lobes broadly oblong, 2-2.5 mm wide, margins vaguely erose. Stamens 20-25 in two rows, tube 1 mm long, free filaments 0.5-1.5 × 0.3-0.4 mm, papillose; anthers 0.3 × 0.3 mm. Disc annular or plane, glabrous; style 1.5-1.7 mm long, glabrous; stigma subcapitate, 3-lobed. Ovary 3-locular with 3 or 4 ovules in each locule. Fruits ellipsoid or ovoid, 7-8 × 5 mm, glabrous or brownish-strigose towards apex, black when dried.

This is a highly distinctive new species of *Symplocos*, being distinguished from other species of the genus by a number of features, such as tough, dark-veined leaves, brownish-hirsute shoots and young branches, paniculate inflorescences, relatively small flowers with few stamens, glabrous disc, and small fruits.

Symplocos phaeoneura is known from two localities in the northern parts of Cordillera Central.

Specimens examined. – **Antioquia:** Mpio. Sonsón, 32 km from Sonsón to La Unión, 75°18'W, 05°51'N, 2375 m, 2 Apr 1987 (fr.), *Zarucchi & al.* 5263 (S). Same locality as type, 30 Jan 1986 (fr.), *Linda Escobar & al.* 6160 (COL); 10 Feb 1986 (young fr.), *Stein* 3422 (S).

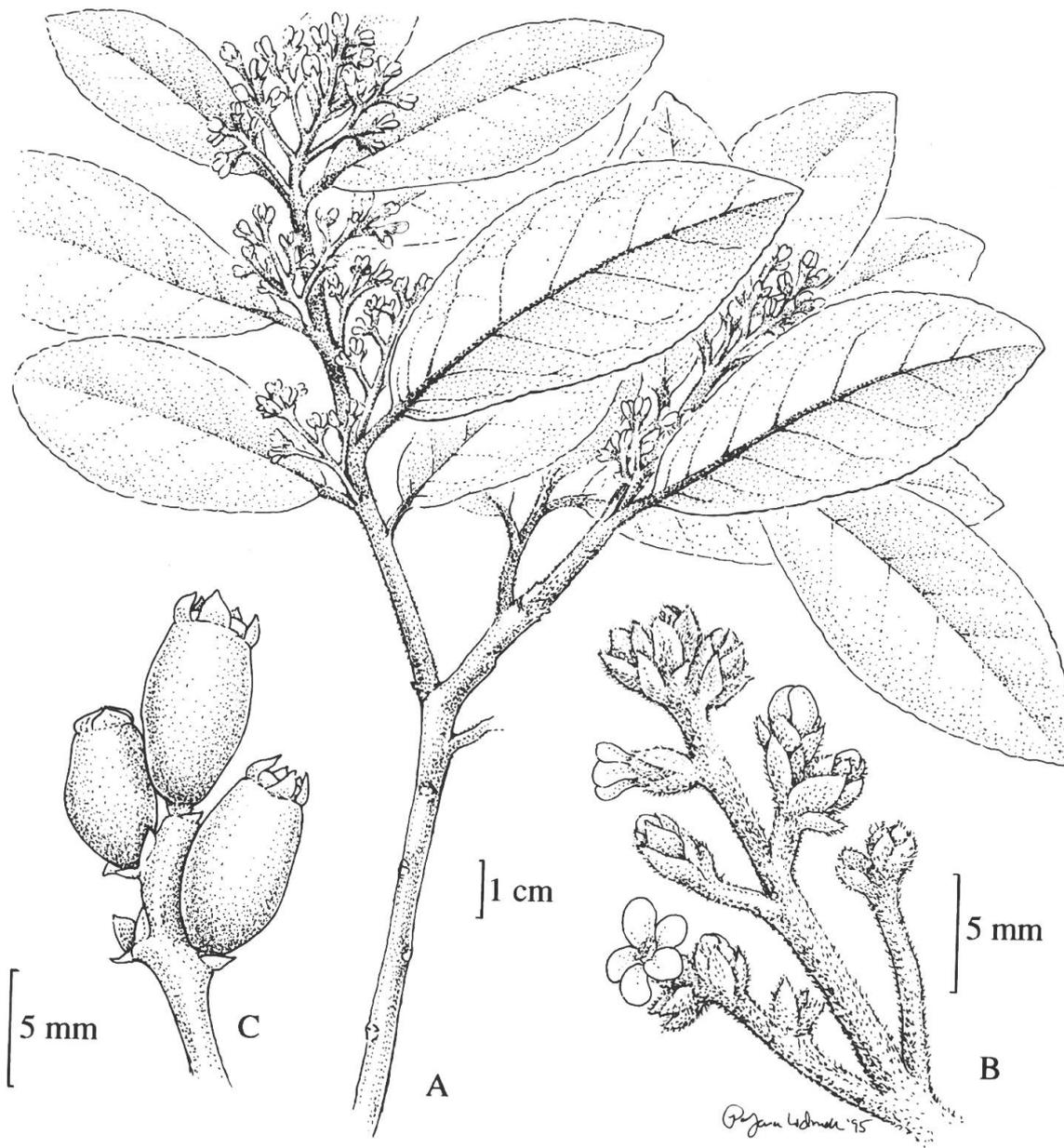


Fig. 16. – *Symplocos phaeoneura* B. Stahl
A, flowering branch; B, inflorescence; C, fruits (A, B, Escobar & al. 2326, type; C, Zarucchi & al. 5263).

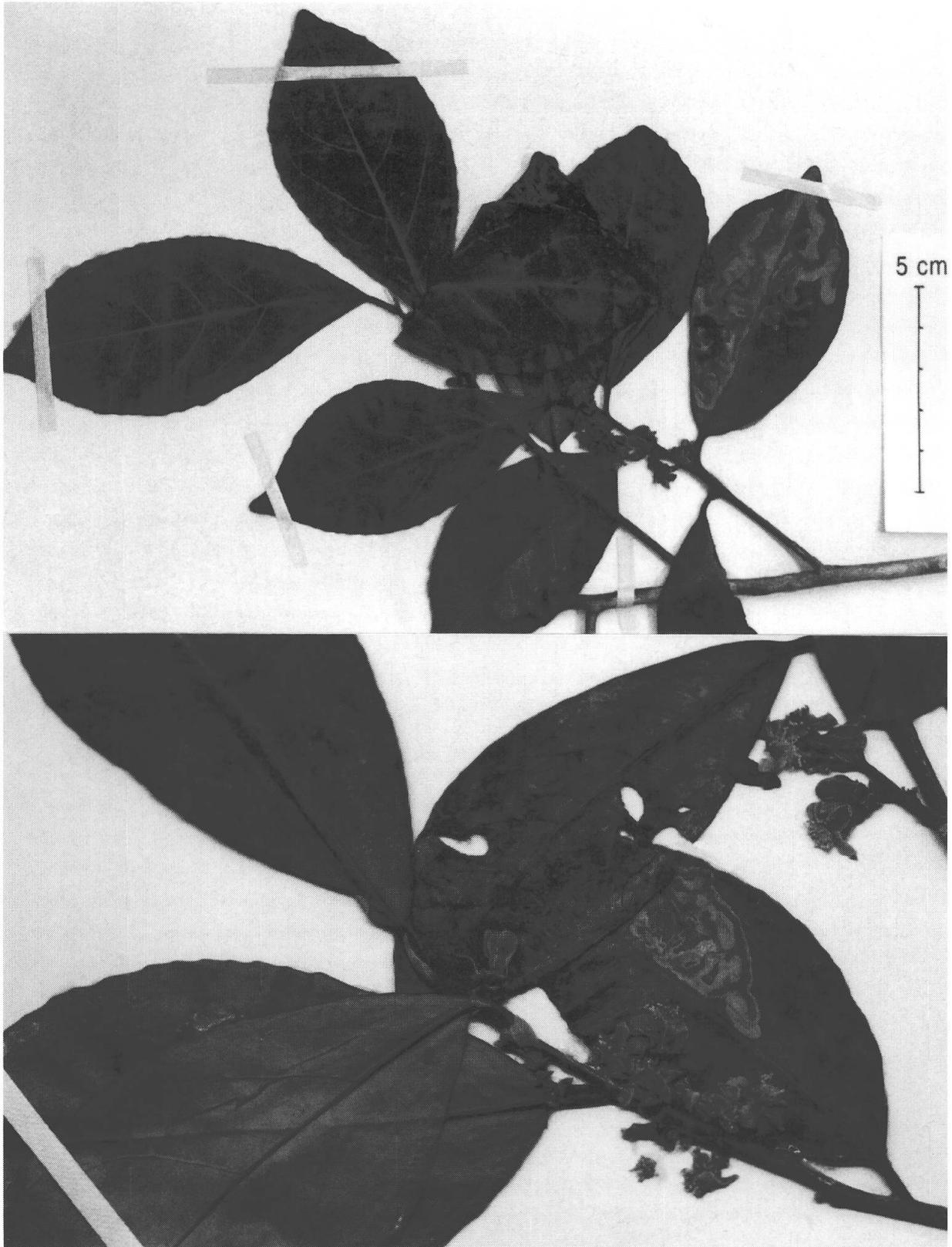


Fig. 17. – *Symlocos trianae* Brand
Photos of Haught 2606.

26. *Symplocos trianae* Brand, Pflanzenr. VI.242: 82. 1901 (“trianaei”). **Type:** Colombia. Dept. Meta, “Llano de San Martín, Paraiso, Acasias, 300 m”, Jan 1856 (fl. & fr.), *Triana* “8259” (lectotype, COL, selected here; isolectotypes, BM, F fragment, G, K; photo of G in F, GH). (Fig. 17).

- *Symplocos suaveolens* auct. non Klotsch: García Barriga, Fl. Med. Colombia 2: 384. 1992.
- *Symplocos arechea* auct. non L’Hérit.: García Barriga, Fl. Med. Colombia 2: 381. 1992.

Tree to 10 m high; young shoots and branchlets dark reddish brown, sparsely strigulose, the bark smooth, older branches greyish. Leaves petiolate, in dried condition brownish beneath, dark green and often glossy above; blade obovate or elliptic, 5-11 × 2-5 cm, coriaceous, the lower side sparsely but evenly strigose, sometimes subglabrous, the upper side glabrous, base attenuate, often shortly so, apex shortly obtuse-acuminate with acumen to 10 mm long, rarely obtuse, margins vaguely crenate, sometimes subentire, eglandular, slightly revolute to plane; midvein prominent beneath, impressed above, lateral veins prominulous on both sides, veinlets rather inconspicuous; petiole 0.5-1.5 cm long, canaliculate, sparsely strigulose. Inflorescences lateral, borne among the foliage, little-branched panicles 0.3-0.8 cm long, rachis sparsely strigulose to subglabrous; bracteoles 3, the basal bract oblong or ovate, 0.7-1.2 × 1 mm, strigulose, the inner bracteoles inserted just beneath the calyx, broadly ovate, 1 × 1-1.2 mm, strigulose, margins ciliolate; pedicel absent or to 0.5 mm long, sparsely strigulose. Calyx tube 1.2 mm long, glabrous, lobes very broadly ovate, 1 × 1.2-1.8 mm, sparsely strigulose, margins ciliolate. Corolla white, glabrous, ca. 8 mm long including tube ca. 4 mm long, lobes 5, broadly oblong, 2.5-3.5 mm wide, margins sparsely ciliolate. Stamens 35-40 in 3 rows, tube 4 mm long, free filaments 1-3 × 0.3-0.4 mm, smooth; anthers 0.3 × 0.4 mm. Disc annular, strigulose; style 6 mm long, hirsute, at least below the middle; stigma capitate, obscurely 4- or 5-lobed; ovary 5-locular with 3 ovules in each locule. Fruits narrowly ellipsoid or cylindrical, 10-12 × 6 mm, glabrous, slightly wrinkled and black when dried.

Symplocos trianae is distinguished by its rather coarse leaves with usually dark, glossy upper surfaces and crenulate, eglandular margins, few-flowered panicles, and rather large flowers. It is very similar to *S. nitens* (Pohl) Benth., a species distributed in central Brazil (BRAND, 1901; OCCHIONI, 1974) and Venezuela (ARISTEGUIETA, 1957). However, since the latter species appears from available descriptions to be rather variable I prefer, in this context, to retain *S. trianae* as a distinct species. In Colombia, *S. trianae* is possible confused with *S. arechea* (see that species).

Symplocos trianae has been collected in the western parts of Los Llanos in eastern Colombia, evidently growing in gallery forests.

Specimens examined. – **Boyacá:** El Guira, between Barranca de Upia and Mani, 250 m, 14 Feb 1939 (fl.), *Haught 2606* (A, COL, F, NY, US). – **Meta:** 0.5 km NE of San Martín, 400 m, 4 Feb 1944 (fl. & fr.), *Hermann 11200* (COL, GH, NY, US). “Plains d Sn Martin”, 300 m, 1866 (fr.), *Triana s.n.* (G, probably part of original material).

27. *Symplocos arechea* L’Hérit., Trans. Linn. Soc. Bot. 1: 176. 1791; Ståhl, Fl. Ecuador 43: 7, fig. 2. 1991. **Type:** Peru, Dept. Huánucu, Cuchero, *Dombey s.n.* (holotype, P).

- = *Symplocos longiflora* Brand, Pflanzenr. VI. 242: 85. 1901. **Type:** Colombia, Dept. Norte de Santander, Convención, 900 m, Jul 1846-52 (fl.), *Schlim 715* (lectotype, G, selected here; isolectotypes, G, US; photo of lectotype at F, GH, MO).

For further synonymy, see STÅHL (1991, 1993, 1994).

With its present circumscription, *S. arechea* is characterised by rather large, oblong, serrate-margined and long-acuminate leaves, and short lateral inflorescences with comparatively long (12-15 mm), fragrant flowers. However, the distinction between this species and *S. martinicensis*

sis Jacq. is obscure. In this limited context and before *S. martinicensis*, the most widely distributed of the two, has been studied in detail, I prefer to treat *S. arechea* as a separate species.

Symplocos arechea is distributed mainly along the foothills and lower east Andean slopes of Ecuador, Peru, Bolivia, and Colombia; in Colombia it has been recorded in the eastern Cauca Department and the Department of Norte de Santander.

Specimens examined. – **Cauca:** Popayan, 1500-1700 m, Mar (fl.), *Lehmann 5897* (F, GH, S, US).

28. *Symplocos ecuadoriensis* Little, J. Wash. Acad. Sci. 38: 105, fig. 11. 1948; Ståhl, Fl. Ecuador 43: 10. 1991. **Type:** Ecuador, Prov. Esmeraldas, just S of San Lorenzo, 22 Apr 1943 (fl.), *Little 6349* (holotype, US; isotypes, F, K, NY).

This species was described from the lowland rainforest of northwestern Ecuador. In my treatment of *Symplocaceae* for Flora of Ecuador (STÅHL, 1991) it was distinguished from *S. arechea*, the species it resembles most, by smaller flowers and fruits, a 3-locular ovary, and total size. However, preliminary studies of a larger material of *S. arechea* (and *S. martinicensis*) indicate that these characters may break down when further material is studied.

In Colombia, *S. ecuadoriensis* has been collected once near sea level in the Nariño Department.

Specimen examined. – **Nariño:** Tumaco, vicinity of Piñal Salado, 2 Mar 1956 (fl.), *Romero Castañeda 5567* (COL).

29. *Symplocos* sp.

Tree to 12 m high; young shoots and branchlets sparsely strigulose, the bark smooth, greyish or light brown. Leaves petiolate, brownish green when dried; blade obovate, 7.5-16.5 × 3-7.5 cm, very sparsely strigulose beneath, at least on midvein, glabrous above, membranaceous, base attenuate, apex acuminate with acumen 1-2 cm long, margins plane, vaguely glandular-crenate from middle to apex, the glands 5-15 per side; midvein slightly impressed above, prominent beneath, lateral veins prominent on both sides, veinlets rather conspicuous; petiole 0.5-1 cm long, subcanaliculate, strigulose. Flowers not seen. Fruits irregularly cylindrical, 25-30 × 8-9 cm, glabrous, somewhat rugose, persisting calyx lobes erect.

This species evidently belongs to the *S. arechea-martinicensis* complex, being similar to these species in leaf and fruit characters. It differs, however, in thinner leaves and the paler bark of young shoots. In addition, the fruits appear solitary, not from short racemes as in *S. arechea* and *S. martinicensis*, and the branches and lower leaf surfaces are sparsely strigulose rather than strigose-pilose as in these species. The extant material represent possibly an undescribed species, but the poor information on floral characters and the close resemblance to *S. arechea* and *S. martinicensis* in vegetative features prevent me from describing it here.

Specimens examined. – **Chocó:** Northern ridge of Alto de Buey, E to SW of El Valle, 500-1150 m, 8 Aug 1976 (fr.), *Gentry & Fallen 17380* (COL, MO). Urubá Region, Cerros del Cuchillo, Cumbre Noroeste, 200-400 m, 13 Feb 1988 (fr.), *Cárdenas 1265* (MO).

30. *Symplocos magdalenae* B. Ståhl, *spec. nova*

Type: Colombia, Dept. Magdalena, Sierra Nevada de Santa Marta, Cuchilla de San Lorenzo, near Centro Forestal, 18 Jun 1969 (fl.), *Santiago Díaz 119* (holotype, US).

Frutex vel arbor ad 15 m alta, caule 25-30 cm diametro, surculis glabris, laevibus, brunneis pallidis, argentibus. Folia petiolis 0.7-1.2 cm longis; lamina obovata vel interdum late obovata, 4-10.5 × 2.5-5 cm, coriacea, glabra, basi angustata, apice obtuso, subacuto vel breviter obtuso-acuminato, margine versus apicem glanduloso-crenulato vel serrato, glandibus utroque latere 5-10, costa infra prominenti, supra deplanata, venis lateralibus venulisque utrinque prominulis. Inflorescentiae laterales, fasciculatae, sessiles, floribus 2(-4). Bracteeae 5-8, glabrae vel

sparsim strigulosae, marginibus ciliolatis. Calyx tubo 1.5 mm longo, glabro, lobis late ovatis, 1.5 × 1.5 mm, in centro strigulosus, marginibus ciliolatis. Corolla alba, glabra, 4-5 mm longa, lobis 8, oblongis vel late ovatis, 1.5-2.5 mm latis, marginibus sparsim ciliolatis. Stamina 75-90, quadrifaria, tubo 1.5 mm longo, filamentis liberis 0.2-1.2 × 0.3-0.4 mm, papillois, antheris 0.2 × 0.3 mm. Discus annularis, strigulosus. Stylus 1.5 mm longus, glaber, stigmatibus capitatis, trilobato. Ovarium triloculare, ovulis in quoque locule 2 vel 3. Fructus anguste ellipsoideus vel cylindricus, 12-15 × 6-7 mm, preter apicem strigulosum glaber.

Shrub or tree to 15 m high, richly branched, stem 25-30 cm diam.; young shoots and branchlets glabrous, the bark smooth, light brown turning silvery grey. Leaves petiolate, greenish to brownish green when dried; blade obovate or sometimes broadly obovate, 4-10.5 × 2.5-5 cm, coriaceous, glabrous, base attenuate, apex obtuse, subacute, or shortly obtuse-acuminate, margins plane, entire for 2/3 of their length, the upper third glandular-crenulate or glandular-serrate with 5-10 glands per side; midvein prominent beneath, in level with surface above, lateral veins and veinlets prominulous on both sides; petiole 0.7-1.2 cm long, plane above, glabrous. Inflorescences fasciculate, sessile, borne in the leaf axils. Flowers 2(-4), faintly aromatic. Bracteoles 5-8, very broadly ovate, 1.5-2 × 2-3 mm, glabrous or sparsely strigose, margins ciliate. Calyx tube 1.5 mm long, glabrous, lobes broadly ovate, 1.5 × 1.5 mm, strigulose in centre, margins ciliate. Corolla white, glabrous, 4-5 mm long including tube 0.7-1 mm long, lobes 8, oblong to broadly ovate, the outer lobes 2.5 mm wide, the inner lobes 1.5 mm wide, margins sparsely ciliate. Stamens 75-90 in 4 rows, tube 1.5 long, free filaments 0.2-1.2 × 0.3-0.4 mm, papillose; anthers 0.2 × 0.3 mm. Disc annular, strigulose; style 1.5 mm long, glabrous; stigma capitate, 3-lobed; ovary 3-locular with 2 or 3 ovules in each locule. Fruits narrowly ellipsoid to cylindrical, 12-15 × 6-7 mm, sparsely strigulose on style base, otherwise glabrous, persisting calyx lobes erect.

Symplocos magdalena is easily recognised by its relatively long-petiolate leaves with only the upper third of the blades distinctly serrate or crenulate, silvery, glabrous young shoots, and tiny, fasciculate inflorescences of usually 2 flowers.

The species has been collected in cloud forest on the northern slopes of Sierra Nevada de Santa Marta.

Specimens examined. – **Magdalena:** Near San Lorenzo, 2500-2800 m, no date (ster.), Espina & Giacometto A174 (F, NY); no date (fr.), Espina & Giacometto A173 (F). Near Santa Marta, 2500-2800 m, no date (ster.), Espina & Giacometto A190 (A, F). Cerro Quemado, 2600-2800 m, 15 Apr 1959 (fr.), Romero-Castañeda 7698 (COL).

Excluded taxa

Symplocos aspera Brand, Pflanzenr. IV.242: 80. 1901. **Type:** “Columbia: auf dem Berge Warimu”, Schomburgk s.n. (K).

Incorrectly placed in Colombia by BRAND (1901), the origin of the type no doubt being the Guyanas.

Symplocos violacea Brand, Pflanzenr. IV.242: 81. 1901. **Type:** “Sierra Nevada, Columbia”, Moritz 1010 (B, destroyed, photo in GH; F fragment, K, L, P, S).

BRAND (1901) evidently treated the type of this species as originating from Sierra Nevada de Santa Marta. It seem clear, however, that the type was collected in Sierra Nevada de Mérida in southern Venezuela, where many collection of this species have been made. *Symplocos violacea* may, however, occur in northern Colombia.

ACKNOWLEDGEMENTS

The study was supported by a grant from the Swedish Natural Science Research Council (B-BU 06389-303). The excellent drawings were provided by Pollyanna Lidmark.

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