FIVE NEW SPECIES OF *BRUNFELSIA*
FROM SOUTH AMERICA (SOLANACEAE)

TIMOTHY PLOWMAN
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Accepted for publication January 27, 1981
July 27, 1981
Publication 1322
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Continuing taxonomic studies in the genus *Brunfelsia* have revealed the existence of five previously undescribed species. Although some of these taxa were recognized earlier (Plowman, 1973, 1979), a full assessment of their status was not possible due to insufficient materials available for study. Since many new collections from South America have been received and critical specimens in European and South American herbaria have been discovered, it is now possible to circumscribe correctly the new taxa that are presented herein.

The species of *Brunfelsia* in South America and adjacent eastern Panama, comprising sections *Franciscea* and *Guianenses*, now number 24. Eleven of these have been described within the past decade.

1. *Brunfelsia boliviana* Plowman, sp. nov. Sect. *Franciscea*. Figure 1.


Shrub 1–2 m tall (fide Cárdenas). Bark on branches thin, yellowish to grayish brown, longitudinally rugose, not exfoliating. Branchlets 2–3 mm in diameter, more or less villous, becoming glabrous. Leaves scattered along branchlets or crowded at tips of lateral short shoots, short petiolate, blade obovate, rarely elliptico-obovate, apically rounded with a short acumen, the acumen itself blunt to acute, 5–10 mm long, somewhat revolute at margin, basally attenuate, 40–135 mm long, 23–58 mm wide, glabrescent on both surfaces except at the midrib which bears villous and glandular hairs, ciliate-villous on the adaxial surface of the revolute margin, firmly membranaceous or somewhat coriaceous, dull green above, paler, yellowish green beneath, the lateral nerves 4–9, straight, arcuately anastomosing towards the margin, prominulous beneath; petiole 2–6 mm long, more or less villous, more densely so on upper side. Inflorescence corymbiform, terminal on last season's branchlets, short pedunculate, branched, with 6–15 flowers. Peduncle 5–12 mm long, more or less villous. Bracteoles small, lanceolate or cymbiform, 1–4 mm long, sparsely to densely villous especially at margin, caducous. Flowers light violet fading to white (fide Cárdenas). Pedicell short, 2–6 mm long, 1 mm in diameter, scarcely thickened at apex, glabrous or with sparse glandular hairs. Calyx tubular, truncate at base, five-angled in cross-section, appearing plicate in pressed specimens, 9–15 mm long, 3–4 mm in diameter, glabrous or with scattered glandular hairs, teeth subequal, 2–4 mm long, ovate, apically short acuminate, the acumen itself blunt and glandular-papilllose, fruiting calyx persistent, withering. Corolla tube about twice as long as calyx, straight, 21–25 mm long, 2–3 mm in diameter; limb spreading, 18–30 mm in diameter, lobes subequal, rounded, 8–14 mm
long. Stamens inserted in upper part of corolla tube; filaments strap-shaped, the longer anterior pair suberect, briefly exserted from mouth of corolla tube, 3 mm long, the shorter posterior pair included, 2 mm long; anthers orbicular-reiniform, subequal or the upper pair slightly larger, 1–1.2 mm in diameter. Ovary narrowly ovoid, 2–3 mm long, 1.8–2.2 mm in diameter, with about 30 ovules; style incurved at apex, 19 mm long; stigma briefly bifid, 2 mm long. Capsules 3–6 per infructescence, dry at maturity, subglobose, 20–25 mm long, 20–25 mm in diameter, smooth, green; pericarp thin, 1–1.5 mm thick, endocarp thin-crustaceous, with 22–28 seeds per capsule. Seeds oblong to subeniform, suberete, 5–8 mm long, 2–3 mm in diameter, reticulate-pitted, dark brown. Embryo straight, 4 mm long; cotyledons ovate, 1.5 mm long; radicle 2.5 mm long.

Type.—BOLIVIA. Dept. Santa Cruz: Prov. de la Cordillera, region of Lagunillas, Cordillera of Incahuasi. Altitude 900 m, “at dry and sandy slopes; shrub 1–2 m; flowers white or light violet; when cattle eat the leaves of this plant (they) die.” N.v. bella unión. August 1934. M. Cárdenas 2813 (holotype, F 756420).

Etymology.—From Latin bolivianus, “Bolivian,” referring to the country of origin where the species appears to be endemic.

Common name.—Bella unión, “beautiful union,” referring to the occurrence of both violet and white flowers on the same plant. This name is applied to other brunfelsias in Bolivia.

Distribution.—The eastern Andes of southern Bolivia.


Brunfelsia boliviana is known from only four collections, all from a relatively small area in the foothills of the Andes in southern Bolivia. The early collection of Weddell in 1845 is labeled merely “Provincia de la Cordillera,” referring to the large province in the Department of Santa Cruz. However, Urban (1906) mentions that in the months given, Weddell traveled and collected from Santa Cruz da la Sierra in Santa Cruz south to Sauces (now Monteagudo) in Chuquisaca Department. His collection was probably made near the border between the two departments.

Brunfelsia boliviana is most closely related to B. cuneifolia J. A. Schmidt, which occurs in southern Brazil from the State of Paraná south to Rio Grande do Sul. Like the present species, it is known from only a few specimens. Brunfelsia boliviana differs in both leaf and inflorescence characters as summarized in the following:

<table>
<thead>
<tr>
<th>Character</th>
<th>B. boliviana</th>
<th>B. cuneifolia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf shape</td>
<td>Obovate to elliptic-ovobvate</td>
<td>Oblong-ovobvate to elliptic-lanceolate</td>
</tr>
<tr>
<td>Leaf apex</td>
<td>Rounded with a short acumen</td>
<td>Cuneate to blunt</td>
</tr>
<tr>
<td>Leaf indument</td>
<td>Villous-ciliate at margin</td>
<td>Glabrous at margin</td>
</tr>
<tr>
<td>Location of inflorescence</td>
<td>On last season’s growth</td>
<td>On current season’s growth</td>
</tr>
<tr>
<td>Number of flowers per inflorescence</td>
<td>6–16</td>
<td>1–3</td>
</tr>
<tr>
<td>Distribution</td>
<td>Southern Bolivia</td>
<td>Southern Brazil</td>
</tr>
</tbody>
</table>
BRUNFELSIA boliviana Plowman

Fig. 1. Brunfelsia boliviana Plowman. 1, flowering branch; 2, inflorescence in bud; 3, excised apical portion of corolla tube showing anthers and stigma; 4, leaf margin showing indument. (From Cárdenas 2813.)
The geographical distribution of these two closely related species deserves some comment because it exemplifies further a pattern observed in other brunfelsias in which vicarious species pairs are found in southeastern Brazil and the eastern Bolivian Andes, respectively. These include *B. bonodora* (Vell.) Macbr.–*B. grandiflora* subsp. *schultesii* Plowman and *B. hydrangeiformis* (Pohl) Benth.–*B. mire* Monachino. In addition, disjunct and somewhat distinct populations of *B. uniflora* (Pohl) D. Don, a species primarily of eastern Brazil, have also been found in the Bolivian Andes. In each of these cases, vicarious species or populations are now separated by over 2,000 km in which no intervening populations are known to occur. This phytogeographic pattern has been discussed by Smith (1962) and by Plowman (1979).

Interestingly, the leaves of *B. boliviana* are reputed to be lethal to cattle, a feature that has been reported for other *Brunfelsia* species (Plowman, 1977).

2. *Brunfelsia imatacana* Plowman, sp. nov. Sect. *Franciscea*. Figure 2.


A *Brunfelsia pauciflora* follis elliptico-oblongis vel elliptico-ovatis, nervis lateralisibus 5–7, floribus fragrantiis 1–2, pedicellis brevioribus, capsula breviori et seminibus 6–10 majoribus differt.

Shrub or treelet 3–5 m tall. Bark reddish or grayish brown, longitudinally and transversely cracked, shedding in thin flakes. Branchlets about 2 mm in diameter, grayish brown, longitudinally cracked, pubescent or glabrate. Leaves scattered along branchlets, short petiolate, blade oblong-elliptic or elliptic-obovate, short to long acuminate, the apex itself acute to blunt, cuneate to narrowed at base, 65–150 mm long, 20–65 mm wide, glabrous or sparsely glandular-pubescent beneath, especially at midrib, firmly chartaceous to subcoriaceous, dull dark green above, dull paler green beneath, the lateral nerves 6–10, spreading, straight to somewhat arching, indistinct; petiole 5–10 mm long, 1.5 mm in diameter, pubescent. Inflorescence terminal, 1- or 2-flowered, subsessile. Bracteoles linear-lanceolate or squamiform, 1–3 mm long, pubescent, caducous. Flowers light violet with a white spot at orifice, fading to pure white with age, fragrant with odor resembling jasmine. Pedicel 8–9 mm long, 1 mm in diameter, glabrous, becoming thickened, warty in fruit. Calyx tubular, terete, 15–21 mm long, 7–10 mm in diameter, glabrous or with scattered glandular hairs, teeth subequal, ovate, acuminate, 4–5 mm long, calyx in fruit 18–25 mm long, campanulate, thickly coriaceous, dotted with lenticels. Corolla tube twice as long as calyx, straight, 30–38 mm long, 1–2 mm in diameter, with scattered glandular hairs, orifice 3 mm across, lobes subequal, rounded, 13–23 mm long. Stamens inserted in upper part of corolla tube; filaments strap-shaped, 1 mm wide; the longer anterior pair suberect, included in mouth of corolla tube, 5 mm long, the shorter posterior pair 3 mm long; anthers orbicular-reniform, upper pair slightly smaller, 1.5 mm across; lower pair 1.8 mm across. Ovary broadly ovoid, 1.8 mm long, 2 mm in diameter, with 7–8 ovules per locule; style 22–23 mm long; stigma briefly bifid, 1.5–2 mm long. Capsule dry at maturity and completely enclosed by coriaceous calyx, ovoid to subglobose, 12–17 mm long, 14–16 mm in diameter, smooth, light green, pericarp 0.5 mm thick, crustaceous, containing 6–10 seeds. Seeds oblong-ellipsoid, somewhat angular, 6–9 mm long, 2–5 mm in diameter, reticulate-pitted, reddish brown.
Type.—VENEZUELA. State of Bolívar: About 20 km northeast of Guasipati on road to El Miamo along side road just before Río Cabeza Mala, altitude 200 m, open woodland with white sandy soil. Treelot 4–5 m tall, flowers violet fading pure white with age, odor of jasmine. N.v. Jazmín del monte, Juan de la Calle. Used for baños by healers. 25 Sept. 1968. T. Plowman 1918 (holotype, F 1813259; isotypes, F 1746565, GH, K, NY, P, UC, US, VEN).

Etymology.—From Latin imatac anus, referring to the Serranía de Imataca to which the species apparently is confined.

Common names.—Jazmín del monte, “wild jasmine”; Juan de la Calle, “John of the street.” The former refers to the jasmine-like fragrance of the flowers.

Distribution.—Restricted to the region of the Serranía de Imataca and Serranía de Núria in the northeastern part of the State of Bolívar, Venezuela.

Additional specimens studied.—VENEZUELA. BOLÍVAR: Reserva Forestal de Imataca, along logging road to Campamento Paraíso, 28 km N.E. of Upata, altitude ca. 100 m, 26 Sept. 1968, Plowman 1919 (ECON, F, GH, K, S, US, VEN); low, flat woodland east of Río Cabeza Mala, 15 km N.E. of Guasipati, on road to Miamo, 2 June 1960, Steyermark 86244 (US, VEN); Altiplanicie del Núria, 5 km from Hato de Núria, east of Miamo, altitude 400 m, 10 Jan. 1961, Steyermark 88290 (NY, VEN); more or less level forest along pica 105, 40 km south of Tumeremo, east of highway between Tumeremo and El Dorado, 29 km north of El Dorado, altitude 220 m, 23 July 1960, Steyermark 86574 (NY, US, VEN); Reserva Forestal “La Paragua,” márgenes del río Asa, June 1970, Blanco 826 (F, VEN); El Dorado, cultivated, Aug. 1957, Trujillo 3488 (MY).

Previously, I considered Brunfelsia imatacana to be a subspecies of the related species B. pauciflora (Cham. & Schlecht.) Benth. of southeastern Brazil (Plowman, 1973, 1979). Although the two species are superficially similar, B. imatacana can be readily distinguished by the leaf shape, number of lateral nerves, fragrant flowers, shorter pedicel, calyx and capsule, and by the smaller number and larger size of the seeds. In addition the two species are widely disjunct by a distance of 3,800 km.

Brunfelsia imatacana is endemic in the northeasternmost part of Bolívar state in Venezuela, in the range of low hills known as the Serranía de Imataca and Serranía de Núria. This area occupies the northern rim of the Venezuelan section of the Guayana Shield. This region has recently been recognized by Steyermark as a distinct phytogeographic unit of the flora of Venezuela. Most of the flora found here represents species of the Guianas at their western limits as well as various eastern Amazonian species at their northeastern limits of dispersal (Steyermark, 1968, 1979). Steyermark (1968) lists 278 plant species known only from the Serranía de Imataca and another 514 species that are restricted to the even more limited area of the Altiplanicie de Núria. The Imataca region has been documented as a major center of both plant and animal species endemism and has been proposed as a Pleistocene forest refuge area (Prance, 1973; Brown, 1979; Steyermark, 1979).

During the collection of the type material, local guides informed the author that the foliage of Brunfelsia imatacana was used by healers (brujos) for herbal baths. Although this use of the plant was not observed, bulk samples of roots, stems, and leaves were collected for chemical analysis. The freshly air-dried leaves and stems were sent to Dr. John Leary of the Massachusetts College of Pharmacy for testing. Dr. Leary (personal communication, 1973) reported that
extraction of this material yielded alkaloid-positive precipitates based on six different precipitating agents. In addition he obtained a positive test for phytosteroids but negative tests for flavonoids, tannins, and saponins. Dried root, stem, and leaf material of this same sample were also sent to Mr. Jan-Erik Lindgren of the Karolinska Institutet, Stockholm, Sweden. Mr. Lindgren (personal communication, 1973) prepared methanol extracts of the samples, which were examined by thin-layer chromatography. He also performed a complete alkaloid extraction on the material, followed by gas and thin-layer chromatography on the extracts. Mr. Lindgren was unable to detect the presence of any alkaloids in the samples. It remains uncertain what, if any, active constituents may be present in this species. However, isolation and identification of the active constituents in other brunfelsias with demonstrated pharmacologic activity have proved to be similarly difficult (Plowman, 1977).

3. Brunfelsia rupestris Plowman, sp. nov. Sect. Franciscea. Figure 3.


A Brunfelsia brasiliensi folii congestis, coriaceis, valde revolutis, sparse pubescentibus, nervis lateralis 4–5 indistinctis, et pedicellis calycibusque glaberrimis differt. Much-branched shrub 1–2 m tall. Bark on branches yellowish to reddish brown, cracked longitudinally and transversely, exfoliating in thin flakes. Branchlets about 2 mm in diameter, glabrous or puberulent. Leaves usually congested near branch tips, short petiolate, blade lanceolate to oblong, apically acute, sometimes blunt or emarginate, strongly revolute at margin, basally cuneate, 10–40 mm long, 6–17 mm wide, glabrous above, puberulent beneath with short curved glandular or eglandular hairs, thickly coriaceous, shiny, medium green above, dull beneath, drying ochraceous brown, the lateral nerves 4–5, straight, scarcely distinct; petiole 1–3 mm long, glabrous. Inflorescence terminal on current season’s branchlets, short pedunculate, with 2–5 (8) flowers. Peduncle 1–5 mm long, short-branched, the branches articulating with the pedicels, persistent, puberulent. Bracteoles linear-lanceolate or cymbiform, 1–6 mm long, sparsely villous, ciliolate at margin, caducous. Flowers deep violet with a white “eye” at orifice, fading to lavender with age. Pedicel 4–12 mm long, 1–1.5 mm in diameter, glabrous. Calyx tubular-campanulate, terete, 10–15 mm long, 3–6 mm in diameter, glabrous, light green, teeth subequal, 2–3 mm long, ovate to triangular, apically acute, the tip itself sometimes blunt or truncate. Corolla tube about 1½ times as long as calyx, straight, 15–18 mm long, 1.5–2 mm in diameter, glabrous, orifice 2–3 mm in diameter; limb spreading, slightly thickened at mouth of tube, 15–22 mm in diameter, lobes subequal, rounded, 5–10 mm long. Stamens inserted in upper part of corolla tube; filaments strap-shaped, the longer anterior pair apically incurved, included, 2–3 mm long, the shorter posterior pair 1–2 mm long; anthers orbicular-reniform, 1.5 mm in diameter. Ovary ovoid, 1.5 mm long; stigma briefly bifid, 1 mm long. Capsule enclosed by persistent calyx, ovoid to globose, apiculate at apex, 16 mm long, 14 mm in diameter, smooth, pericarp thin, crustaceous, dry at maturity. Seeds oblong-ellipsoid, somewhat angular, 5 mm long, 2.5–3 mm in diameter, reticulate-pitted, brown. Embryo straight, 4 mm long; cotyledons ovate, 2 mm long.

BRUNFELSKIA
rupestris
Plowman

Etymology.—From Latin rupestris, “rock-dwelling, of rocks,” referring to the habitat preference of the species for rocky outcrop areas.

Distribution.—Restricted to the “campo rupestre” community in the Serra do Espinhago, Minas Gerais, Brazil.

Additional specimens studied.—BRAZIL. MINAS GERAIS: Serra do Espinhaço, Município Diamantina: Guinda, 5 Nov. 1937, Mello Barreto 9479 (F, RB), altitude 1,300 m, 14 Nov. 1971, Hatschbach & Pelanda 27941 (GH); ca. 25 km S.W. of Diamantina on road to Gouveia, altitude 1,300 m, 16 Jan. 1969, Irwin et al. 22077 (F, MO, NY, UB); ca. 12 km S.W. of Diamantina, altitude 1,350 m, 23 Jan. 1969,
Irwin et al. 22465 (NY, UB); Serra do Cruzeiro, 5 Nov. 1979, V. F. Ferreira et al. 887 (RB).

Brunfelsia rupestris is a very distinct species that is restricted to the campos rupestres at higher elevations in the Serra do Espinhaço of central Minas Gerais. It is most closely related to and probably derived from the widespread and polymorphic species B. brasiliensis (Spreng.) Smith & Downs. Brunfelsia rupestris differs in having the leaves more congested, thickly coriaceous, strongly revolute at the margins, sparsely pubescent and with only four to five lateral nerves, and in having glandous pedicels and calyces.

4. Brunfelsia burchelli Plowman, sp. nov. Sect. Guianenses. Figure 4.


A Brunfelsia guianensis folii ovatis acutissime acuminatis basi rotundatis, calycibus tubulosocampanulatis, pedicellis et calycibus longioribus differt.

Shrub. Mature branchlets spreading, 2–3 mm in diameter, with shiny yellowish to dark brownish, longitudinally cracked bark. Leaves scattered along stem, short petiolate, blade broadly to narrowly ovate, apically acuminate with a long, pointed, often falcate acumen, minutely ciliolate at margin, basally rounded to obtuse, sometimes abruptly acuminate, 70–180 mm long, 30–75 mm wide, glabrous on both sides, firmly membranaceous to chartaceous, medium green above, paler green beneath, dull or somewhat shiny above, dull beneath, the lateral nerves 5–9, strongly arcuate, anastomosing near margin, nerves prominent on lower surface; petiole 1–6 mm long, with a few scattered glandular hairs, glabrescent. Inflorescence terminal on current year’s branchlets, very briefly pedunculate, with 1–3 flowers. Peduncle 1–4 mm long, persistent, sparsely glandular-pubescent, glabrescent. Bracteoles 1–3 per flower, linear to lanceolate, apically acuminate, 4–20 mm long, glabrous or villous at nerves and margin, caducous. Flower color unknown. Pedicel 4–8 mm long, 1 mm in diameter, sparsely glandular-pubescent, glabrescent. Calyx tubular or tubular-campanulate, terete, 11–20 mm long, 5–9 mm in diameter, with scattered glandular hairs, glabrescent, striately nerved, teeth unequal, 2–6 mm long, triangular-ovate, apically acute to acuminate, minutely gland-tipped. Corolla tube 1½ to 2 times as long as calyx, straight, 24–28 mm long, 1.5–2 mm in diameter, glabrous or bearing few scattered glandular hairs, orifice 5 mm in diameter; limb spreading, 18–30 mm in diameter, lobes subequal, rounded, over-lapping at the lateral margins. Stamens inserted in upper part of corolla tube; filaments straplike, 1 mm wide, the longer anterior pair 3.5–6 mm long, apically slightly incurved or suberect, the shorter posterior pair 3–4 mm long; anthers orbicular-reniform, 1 mm in diameter. Ovary conical-ovoid, 1.5 mm long; style broadened and incurved at apex, 20–21 mm long; stigma included between pairs of anthers, briefly bifid, 1 mm long, upper lobe slightly larger. Fruit and seed unknown.

Type.—BRAZIL. State of Goiás: Porto Real (now Porto Nacional), ford of Igarapé, 1828–1830, W. J. Burchell 8527 (holotype, P; isotypes, K, L).¹

Etymology.—Named in honor of the collector William John Burchell, British botanist who collected extensively in Brazil in the early 19th century.

Distribution.—Basin of the upper Rio Tocantins (Goiás State) and adjacent Maranhão State, Brazil.

¹All Burchell localities are taken from his itinerary published by L. B. Smith and R. B. Smith, Phytologia, 14: 492–506. 1967.
BRUNFELSIA

burchellii Plowman

FIG. 4. Brunfelsia burchellii Plowman. Flowering branch. (From Burchell 8527.)

Additional specimens studied.—BRAZIL. GOIÁS: Porto Real, Porto Real to Igarapé, 1828–1830, Burchell 8415 (L), about village, Burchell 8494 (K), at entrance to village, Burchell 8653 (K); "about the Manga" (cf. Rio dos Mangues, where it meets the Tocantins), Burchell 8752 (GH). MARANHÃO: Island of São Luiz, Estrada do Barreto, Feb.–March 1939, Frôes 11620 (A, F, NY, S, US).

Brunfelsia burchellii is known from only a few collections by William J. Burchell in the vicinity of Porto Real (now called Porto Nacional) on the upper Rio Tocantins 150 years ago. Unfortunately, these specimens bear no field data, and the plant has not been recollected in this region. A modern collection by Frôes from São Luiz Island, more than 1,000 km north of Porto Nacional, is tentatively
assigned to *B. burchellii* but lacks mature flowers or fruits and differs somewhat in leaf venation.

*Brunfelsia burchellii* appears to be most closely related to *B. guianensis* Benth. from which it differs by the ovate, acuminate leaves, longer tubular calyx, and the broadly rounded corolla lobes. With *B. guianensis*, *B. burchellii* is provisionally placed in Sect. *Guianenses* based on the gradually dilated and not apically constricted corolla tube.

Two additional collections with ovate acuminate leaves appear to be related to *B. burchellii* but cannot be placed with certainty. One of these, *Ducke s.n. (RB 18141)*, was collected at Bragança in Pará and bears small, white, terminal, solitary flowers and immature leaves. The other, *Sucre & da Silva 9204 (F, RB)*, was collected at Buriti dos Lopes, Piauí, and has rather shiny, thick leaves and immature fruits completely enclosed in persistent, accrescent calyces.

5. *Brunfelsia clandestina* Plowman, sp. nov. Sect. *Guianenses*. Figure 5.


A *Brunfelsia* martiana follis multo minoribus, nervis paucis et inflorescentiis uni- vel bifloris differt.

**Shrub** or treelet to 6 m tall, trunk to 8 cm in diameter. **Bark** on trunk and branches yellowish brown, cracking longitudinally and transversely, shedding in thin, irregular flakes. **Branchlets** 1.5–2 mm in diameter, glabrous, grayish to dark reddish brown, more or less shiny, cracked longitudinally. **Leaves** short petiolate, the blade elliptic to oblong-lanceolate, rarely lanceolate or obovate, apically acute to acuminate, the apex itself obtuse, basally acute or obtuse, 35–120 mm long, 15–50 mm wide, glabrous or rarely sparsely puberulent on the costa beneath, chartaceous to subcoriaceous, rarely coriaceous, medium green above, somewhat lighter green beneath, shiny on both surfaces, the lateral nerves 6–8, mostly straight, forming an angle of 45–70° with midrib, anastomosing with the arcuate marginal nerve 3–6 mm from margin; petiole 2–6 mm long, glabrous or with scattered glandular hairs. **Inflorescence** terminal or subterminal on mature or newly formed twigs of current season, with or without a short peduncle, one- or two-flowered. **Bracetees** none to 3, linear or cymbiform, truncate at apex, 2–6 mm long, sparsely pubescent or glandular-pubescent, caducous. **Flowers** white. **Pedicel** 3–9 mm long, 1 mm in diameter, glabrous, becoming thicker, warty-lenticellate in fruit, to 3 mm in diameter. Calyx tubular or tubuloso-campanulate, terete, 8–16 mm long, 3–7 mm in diameter, glabrous, light green, membranaceous, teeth subequal, 2–5 mm long, triangular-ovate, apically acute or acuminate, the apex itself blunt and minutely glandular-papilllose; calyx in fruit persistent, 11–16 mm long, shiny, coriaceous, striately nervet, tightly enclosing basal half of capsule. **Corolla** tube 1.5 to 2 times as long as calyx, straight, 18–25 mm long, 1–3 mm in diameter, glabrous, rarely with a few glandular hairs, orifice 3–5 mm across; limb spreading, inclined, 15–26 mm in diameter, lobes subequal, expanding somewhat with age, broadly obovate to rounded, 6–10 mm long. **Stamens** inserted in upper part of corolla tube; filaments strap-shaped, 0.6–1 mm wide, the longer anterior pair incurved at apex, included, 3–5 mm long, the shorter posterior pair 1.5–3 mm long; anthers orbicular-reniform, 1 mm in diameter.
Ovary conical-ovoid, 1–1.5 mm long, 0.8–1.2 mm in diameter, with about 10–12 ovules per locule; style incurved at apex, 16–20 mm long; stigma briefly bifid, upper lobe slightly larger, 1–1.5 mm long. Capsule dry at maturity, ovoid to subglobose, apiculate, 13–20 mm long, 13–15 mm in diameter, smooth, shiny, dark green at maturity; pericarp thin, 0.5–1 mm thick, crustaceous, with about 9–15 seeds per capsule. Seeds oblong-reniform, terete, or somewhat flattened on one side, 5–7 mm long, 2.5–3 mm in diameter, reticulate-pitted, dark brown. Embryo straight, 3–6 mm long; cotyledons ovate to elliptic, 1–2 mm long, radicle 2–4 mm long.


Etymology.—From Latin clandestinus, "secret" or "hidden," referring to the fact that the species remained unrecognized for over a century owing to its superficial resemblance to Brunfelsia uniflora.

Distribution.—States of Bahia and Espirito Santo, Brazil.

Additional specimens studied.—BRAZIL. BAHIA: "Prov. Jacobina," 1841, Blanchet 3354 (G, LE, W), 1843, Blanchet s.n. (C, G, W); "Igreja Velha," 1841, Blanchet 3352 (BM, BR, G, P); Serra de Sincorá, Brejão a Iracema, 17 Feb. 1943, Frôes 20210 (IAN, NY, US); Município Jaguaquara, Jaguaquara a Apurama, 4 Oct. 1972, Pinheiro 1980 (CEPEC, F, NY); Município Itacaré, Itacaré-Úbaitaba, 14 April 1980, dos Santos 689 (CEPEC, F); rodovia BA 654, km 6 ao oeste de Itacaré, approx. 14° 18' S., 39° 02' W., altitude ca. 60 m, 12 April 1980, Plowman, Mattos Silva & dos Santos 10066 (CEPEC, F, four duplicates to be distributed), Plowman, Mattos Silva & dos Santos 10087 (CEPEC, F, 18 duplicates to be distributed); Município Itambé, Itambé, 24 Nov. 1942, Frôes 20067 (IAN, NY); Município Itaju do Colônia, 12 km da estrada em direção a Feirinha ao lado oeste, margem esquerda do Rio Corrêa, 23 Oct. 1969, dos Santos 433 (CEPEC, F); Município Belmonte, Estação Experimental Gregório Bondar, km 58 da rodovia Belmonte/Itapé, 16 May 1979, Mattos Silva et al. 357 (CEPEC); Município Santa Cruz de Cabrália, Reserva Biológica do Pau-Brasil, 18 Sept. 1971, dos Santos 1964 (CEPEC, F), cerca de 16 km a oeste de Porto Seguro, 21 March 1978, Mori et al. 9775 (CEPEC, F), antig a rodovia que liga a Estação Ecológica de Pau-Brasil a Santa Cruz, 5–7 km ao N.E. da Estação, ca. 12 km ao N.W. de Porto Seguro, 16° 23' S., 39° 8' W., ca. 80–100 m altitude, 5 July 1979, Mori et al. 12082 (CEPEC, F, US); Município Guaratinga, rodovia Guaratinga/São Paulinho, km 25, 2 April 1973, Pinheiro 2086 (CEPEC, F); without locality, 1857, Blanchet s.n. (G, L, LE); without locality or date, Blanchet 1455 (F), Blanchet s.n. (F, MG, NY). ESPIRITU SANTO: Linhares, Vale do Rio Doce, km 6 da rodovia BR 101, lado sul, 30 Sept. 1971, dos Santos 2015 (CEPEC, F, NY).

Brunfelsia clandestina was first collected by the Swiss collector Blanchet in the state of Bahia over 100 years ago. Following earlier authors, I originally assigned Blanchet's several collections of the species to Brunfelsia uniflora (Pohl) D. Don, although I pointed out certain differences between typical B. uniflora and the Blanchet material (Plowman, 1973). These early collections lacked adequate field data and fruiting material. Recently, several excellent collections of B. clandestina have been made by the staff at the CEPEC herbarium, Itabuna, Bahia. Accompanied by important field notes, these collections provided the basis for describing the plant as a distinct species of Brunfelsia Sect. Guianenses.

Brunfelsia clandestina superficially resembles several other brunfelsias and may be confused with them. Complete specimens, including field data and flower color, are essential for making positive identifications. Brunfelsia clandestina ap-
BRUNFELSIA clandestina  *Plowman*

**Fig. 5.** *Brunfelsia clandestina* Plowman. 1, flowering branch; 2, fruiting branch; 3, excised apical portion of corolla tube showing anthers and stigma; 4, adaxial view of corolla limb; 5, seed. (1 drawn from dos Santos 1777, 2 from Pinheiro 1980, 3 and 4 from Pinheiro 2086 and 5 from dos Santos 1964.)
Fig. 6. Geographical distribution of new taxa described. ○ Brumfalia inacacca. ▲ B. turchelli. ● B. clandestina. □ B. rupestris. △ B. boliviana.
pears to be most closely related to *B. martiana* Plowman, a species that also grows in the moist forests of Bahia. *Brunfelsia clandestina* differs in having much smaller leaves with fewer lateral nerves and one- or two-flowered inflorescences that are borne terminally. In dried specimens, *B. clandestina* may also be confused with *B. uniflora*, a species known from Bahia but belonging to a different section of the genus (Sect. *Franciscana*). *Brunfelsia clandestina* differs mainly in having dark brown or reddish brown branchlets, glabrous or nearly glabrous leaves and twigs, and a tubular-campanulate rather than narrowly tubular calyx. The flowers of *B. clandestina* are white; those of *B. uniflora* are violet fading to white with age.

*Brunfelsia clandestina* grows in the moist coastal forests of southern Bahia and Espiritu Santo. Earlier collectors in Bahia also found this species further inland in areas formerly covered with mesophytic forest. Most of these areas have now been converted to pastures (Mori & Mattos Silva, 1979). The last collection in the drier, interior part of Bahia was made in 1943.

ACKNOWLEDGMENTS

Research reported in this paper was supported in part by a National Institutes of Health Training Grant (T T01 GM 00036-13, Harvard University) and by a National Science Foundation Evolutionary Biology Training Grant (GB 7346, Reed Rollins, Principal Investigator, Harvard University). Publication was supported in part by a grant from the National Institutes of Drug Abuse (1-R01 DA 02210-01, R. E. Schultes, principal investigator). This support is gratefully acknowledged. I am also grateful to Field Museum of Natural History for financial assistance for field work in Brazil in 1980.

I would like to thank the following persons who assisted in the collection, preparation, or forwarding of herbarium materials for this study: Pedrito Silva (Salvador, Brazil), Paulo Alvim, Luis A. Mattos Silva, Sergio da Vinha and Talmon S. dos Santos (CEPLAC, Itabuna, Brazil), Scott Mori (New York Botanical Garden), Craig Greene (Harvard University), and Julian A. Steyermark and Carlos Blanco (Caracas, Venezuela). I would also like to thank the curators of the following herbaria who kindly lent specimens cited in this work: BM, BR, C, CEPEC, ECON, F, G, GH, IAN, K, L, LE, MG, MY, NY, P, RB, S, UB, UC, UEC, US, VEN.

I am grateful to John Leary and Jan-Erik Lindgren, who performed the chemical analyses, and to Bo Holmstedt for authorizing phytochemical work on *Brunfelsia* in his laboratories at the Karolinska Institutet, Stockholm. I also wish to thank Peter Paterson and Joan Ulrich, volunteers at Field Museum, who prepared the line drawings for Figures 1 and 5 and Figures 3 and 4, respectively; to Rolf Singer who corrected the Latin diagnoses; and to Michael Nee and Julian Steyermark who offered comments on the manuscript.

LITERATURE CITED


