
New Species of *Scutellaria* (Lamiaceae) from Mesoamerica

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ABSTRACT. Ten new species of *Scutellaria* L. (Lamiaceae) from Mesoamerica, *Scutellaria albituba* A. Pool, *S. aurantiaca* A. Pool, *S. lactea* A. Pool, *S. molinarum* A. Pool, *S. multiramosa* A. Pool, *S. oblongifolia* A. Pool, *S. saslayensis* A. Pool, *S. talamancana* A. Pool, *S. tucurriquensis* A. Pool, and *S. tutensis* A. Pool, are described and their relationships with allied species are discussed. *Scutellaria oblongifolia* (Panama), and *S. albituba*, *S. lactea*, and *S. talamancana* (Costa Rica) belong to section *Uliginosae* (Epling) Epling and are herbs with small, pallid flowers, the corolla tubes with galeas not exceeding 20 mm in length. *Scutellaria molinarum* (Honduras and Guatemala), in section *Speciosae* (Epling) Epling, is a large herb to 1 m with large reddish purple flowers, the corolla tubes with galea to 26 mm in length. The five remaining new species are members of section *Cardinales* Epling. *Scutellaria multiramosa* (Panama) is a shrub with reddish violet medium-sized flowers, the corolla tubes with galeas 21–27 mm in length. *S. tutensis* (Panama) is a suffrutescent herb with large pale lavender flowers, the corolla tubes with galeas to 28 mm in length. *S. saslayensis* (Nicaragua) and *S. tucurriquensis* (Costa Rica) are tall herbs, over 0.5 m tall, with medium to large red flowers, the corolla tubes with galeas 27–29 mm and 21–23 mm, respectively, and *S. aurantiaca* (Honduras) is a tall herb exceeding 0.4 m with orange flowers, the corolla tubes with galeas ca. 32 mm.

Key words: Lamiaceae, Mesoamerica, *Scutellaria*.

Scutellaria L. is a well-defined, sub-cosmopolitan genus in the Lamiaceae with approximately 360 species (Paton, 1990), with 39 species known from Mesoamerica (Pool, in an upcoming volume in the *Flora Mesoamericana* series). The Mesoamerican species, as most species in the genus, are easily recognized by their unusual calyx. The calyx has a short tube and two entire, rounded lips that are equal in length, the upper lip with a transverse sail-like fold, or scutellum. The lips are closed following anthesis, forming a small pouch, until ultimately the lips cleanly separate along sutures to the very base of the calyx, releasing the nutlets. The upper lip is lost while the lower is retained. There is little variation in

calyx shape or size in the Mesoamerican species of *Scutellaria*.

The corolla of the Mesoamerican species of *Scutellaria* (and most species in the genus) is also distinctive for the genus. The corolla consists of a long tube with a bi-lipped limb, the lower lip weakly to strongly tri-lobed and the upper lip with two short lateral lobes, and an upper, central lobe, which is more or less strongly galeate, and somewhat bifid. The corolla may be straight at the base of the tube or curved upward, more or less abruptly, a few millimeters above the base. Above this curve, the tube is straight and consistently narrow and cylindrical for a length before expanding, either gradually or abruptly, to the mouth of the tube. This expanded section of the corolla tube may be straight or curved to various degrees. These corolla characteristics, the curving or lack of curving of the tube proximally and/or distally, the length and width of the narrow cylindrical portion of the tube, and the abrupt or gradual expansion to the mouth, have been previously underutilized by investigators of Central American *Scutellaria* (Epling, 1942; Leonard, 1927; Standley & Williams, 1973; Nowicke & Epling, 1969). These characteristics, in addition to corolla length (galea and tube ranging from 4.5 mm to 65 mm) and color (white, yellow, blue, white and blue, blue-purple, red-purple, red-purple and white, red, or orange), are helpful in defining Mesoamerican species. Epling (1942) found the level of insertion of the lower pair of stamens in the corolla tube and the distribution of trichomes within the corolla to be useful species-level characters. In Mesoamerica, the lower of the two pairs of stamens is always inserted at or above the halfway point of the corolla tube, and all but two species (*S. saslayensis* A. Pool and *S. racemosa* Persoon) are similar in the internal corolla trichome distribution: trichomes are found in a wide band in the narrow straight cylindrical portion of the tube, between the proximal curve (when present) and the point at which the corolla expands. In *S. saslayensis*, the corolla is internally glabrous, and in *S. racemosa* trichomes are distributed internally near the base of the tube and on the lip.

Inflorescence characters are useful in delimiting the Mesoamerican species of *Scutellaria*. In some

species, the flowers are exclusively in the axils of leaves, with these leaves similar to the cauline ones to gradually reduced. Most species of Mesoamerican *Scutellaria* have their flowers arranged in terminal, or terminal and axillary, racemes; the lowermost flowers are subtended by reduced leaves and the upper by bracts. The proximal flowers are usually opposite, but the distal flowers can be inserted opposite, alternate and spiraled, or tightly pseudo-whorled, and the flowers can be held erect, spreading, ascending or descending. At anthesis, in Mesoamerican species, the inflorescence is secund and one-sided, except in *S. costaricana* H. Wendland, in which the flowers radiate in all directions in a sub-corymbose raceme. The floral bracts may be sessile or petiolate, caducous or persistent into fruiting, and either appressed to the pedicel or deflexed.

The type, orientation, and length of trichomes found on the inflorescence axis, pedicels, and upper stem internodes are also useful characteristics in *Scutellaria* and were greatly emphasized by Epling (1942). A number of trichome types may be found in any combination in most species; however, the orientation (antrorse vs. retrorse) of the small eglandular trichomes is consistent within a species. In addition, some species of *Scutellaria* (e.g., *S. galerita* Epling and *S. splendens* Link, Klotzsch & Otto) have at least a few gland-tipped patent trichomes always present, while in others they are never found.

Nutlets in Mesoamerican *Scutellaria* can be diverse in surface ornamentation and color, varying from long-pointed papillae with hook-like appendages, to rounded and nearly smooth, and from yellowish brown to black, or sometimes with the papillae of a different color than the background, but unfortunately, the nutlets are rarely retained on herbarium sheets.

Mesoamerican *Scutellaria* vary in habit from woody and greatly branched shrubs to perennial, or rarely, annual herbs. The roots are usually fasciculate and proximally thickened, but can be fibrous or fusiform thickened. The rhizome is often short, thick, and vertical, but in some species (e.g., *S. macer* Epling) is elongate, slender, and horizontal.

Epling's (1942) treatment of the American species of *Scutellaria* is the most recent comprehensive revision to encompass Mesoamerica. In this, he recognizes a number of sections, seven of which apply to Mesoamerican species: *Scutellaria* sect. *Galericularia* A. Hamilton, section *Uliginosae* (Epling) Epling, section *Pallidiflorae* Epling, section *Luteae* Epling, section *Speciosae* (Epling) Epling, section *Cardinales* Epling, and section *Coccineae* Epling. Paton (1990: 426) places these seven sections in synonymy of section *Scutellaria*, but informally recognizes eight species groups that pertain to Mesoamerica: "*S.*

uliginosa" (Paton, 1990: 432), "*S. speciosa*" (Paton, 1990: 432), "*S. costaricana*" (Paton, 1990: 433), "*S. coerulea*" (Paton, 1990: 433), "*S. lutea*" (Paton, 1990: 433), "*S. seleriana*" (Paton, 1990: 433), "*S. racemosa*" (Paton, 1990: 436), and "*S. havanensis*" (Paton, 1990: 435). Mesoamerican species with small blue or blue-purple flowers fit into Epling's (1942) *Scutellaria* sect. *Galericularia* (one species, *S. racemosa*) and section *Uliginosae* (17 species). Paton (1990: 436) treats *S. racemosa* in his group "*S. racemosa*" and divides Epling's section *Uliginosae* into his species groups: "*S. uliginosa*" (Paton, 1990: 432), "*S. coerulea*" (Paton, 1990: 433), "*S. seleriana*" (Paton, 1990: 433), and "*S. havanensis*" (Paton, 1990: 435). Members of Paton's (1990) *S. uliginosa* species group are small herbs with a small woody rhizome and small blue, purple or pallid flowers, spirally inserted in a raceme. The new species described herein, *S. albituba* A. Pool, *S. lactea* A. Pool, *S. oblongifolia* A. Pool, and *S. talamancana* A. Pool, fit within Epling's section *Uliginosae* and Paton's *S. uliginosa* species group. The one species from Mesoamerica with white corollas and yellowish green lips (*S. orichalcea* Donnell Smith) is treated by Epling (1942) in section *Pallidiflorae* and probably would fit in Paton's (1990) *S. uliginosa* species group. The only truly yellow-flowered Mesoamerican *Scutellaria* (*S. lutea* Donnell Smith) is treated by Epling (1942) in section *Luteae* and by Paton (1990: 433) in his species group *S. lutea*. Epling (1942) treats Mesoamerican *Scutellaria* species with red, red-purple, or orange flowers as section *Speciosae* (3 species), section *Cardinales* (14 species), and section *Coccineae* (2 species). Members of section *Speciosae* are distinguished as herbs with leaves softly pubescent on both surfaces (Epling, 1942), and the new species, *S. molinarum* A. Pool, fits here. Sections *Cardinales* and *Coccineae* both have leaves with, usually, a few coarse trichomes on the adaxial surface and are hirtellous on abaxial veins, or are glabrous (Epling, 1942). Members of section *Cardinales* are sub-shrubs with the corollas mainly arcuate, while those of section *Coccineae* are herbs with fasciculate, fleshy roots and usually straight corolla tubes (Epling, 1942). The new species *S. aurantiaca* A. Pool, *S. multiramosa* A. Pool, *S. saslayensis*, *S. tucurriquensis* A. Pool, and *S. tutensis* A. Pool fit into Epling's section *Cardinales*. Paton places most species of sections *Speciosae*, *Cardinales*, and *Coccineae* into his species group *S. speciosa*, the members of which are tall herbs or sub-shrubs, with red-colored corollas, the tubes with galeas longer than 2.5 cm, secund in a one-sided inflorescence at anthesis (Paton, 1990: 427, 432), while those with flowers radiating in all directions were placed in his *S. costaricana* species group (Paton, 1990: 433). Harley and Paton (1999)

recognize the section *Speciosae* with reservation, place section *Coccineae* in its synonymy, and suggest that the relationships between sections *Speciosae* and *Cardinales* require further study. While Epling's sections seem unsatisfactory, the informal species groups of Paton (1990) also deserve further refinement. A key to all of the Mesoamerican species of *Scutellaria* will be published by Pool as part of the Lamiaceae in an upcoming volume in the *Flora Mesoamericana* series. Separate keys to species in Epling's (1942) sections or Paton's species groups are impractical here given the uncertainty in defining these groups and, while the new species published herein are organized following Epling's (1942) sections as a practical tool, this is not meant to imply either acceptance or rejection of these sections.

In the following descriptions, the section of the stem described is the internode between the first and second node below the lowest flower. Leaf descriptions are from the leaf at the second node below the lowest flower, excluding those associated with branching; color is the dried condition. Small leafy structures with toothed margins subtending flowers are considered reduced leaves, while those with entire margins are referred to as bracts. Corolla color is as described by collectors as indicated on herbarium labels.

1. *Scutellaria* sect. *Uliginosae* (Epling) Epling. Lilloa 4: 232. 1939. *Scutellaria* sect. *Heteranthesia* subsect. *Uliginosae* Epling, Repert. Spec. Nov. Regni Veg., Beih. 85: 173. 1936. TYPE SPECIES: *Scutellaria purpurascens* Swartz, Prodr. 89. 1788.

1. *Scutellaria albituba* A. Pool, sp. nov. TYPE: Costa Rica. Monteverde Reserve, 1500 m, 16 May 1981, W. Haber 535 (holotype, MO; isotype, CR not seen). Figure 1A.

Species nova *Scutellariae orichalceae* Donnell Smith similis sed ab ea corollae tubo basi stricta cum galea 16–18 mm longo, labio infero atroviolaceo macula alba notato atque foliis lanceolatis differt.

Perennial herbs, 0.3–0.5 m; roots proximally thickened; rhizomes short and vertical with 1 or 2 stems; stems often with several long branches, strongly quadrangular, with rounded angles, pubescent, the indumentum of eglandular trichomes, weakly to strongly antrorse, 0.05–0.25 mm. Leaves 3.5–6.6 × 1.5–3 cm, narrowly lanceolate, membranaceous, olive-green above and grayish or purplish green below, glands ca. 0.05 mm, orange, adaxial blade surface with few trichomes 0.05–0.6 mm, abaxial surface with trichomes 0.05–0.1 mm and dense on veins, sparse or absent on blade surface, the base cuneate or oblique

(rarely rounded), the margins serrate to serrulate from apex to 3/4 or more of length, the apex acuminate; petioles (rarely 0.9) 1.4–2.5 cm × 0.5–0.75 mm, shorter than adjacent stem internodes. Inflorescence as racemes, 3–8.7 cm, terminal, or terminal and axillary in upper leaf axils, the peduncle 0.5–1.8 cm, flowers at lower nodes subtended by reduced leaves, the inflorescence axis and pedicels pubescent, the trichomes dull white, eglandular, weakly to strongly antrorse, 0.05–0.25 mm, the flowers opposite below, alternate and spiraled above, secund at anthesis, evenly spaced, spreading; bracts strongly deflexed at anthesis, persistent past fruiting, sessile or shortly petiolate, bract blades 3–6 × 0.4–2.25 mm, oblong or lanceolate, the apex rounded or acuminate; pedicels 2.25–3.75 mm, bracteoles near base to 1/3 length from base of pedicel. Flowering calyces 2.75–3 × 2.5–2.75 mm at mouth, pubescent with eglandular trichomes 0.05–0.25 mm, the scutellum 0.5–1 mm high; corolla tube white, lower lip blue or dark bluish purple with white spot in center, tube with galea 16–18 mm, externally pubescent; tube straight and cylindrical at base for 8–10.5 × 1–1.25 mm, pubescent internally, then straight and gradually expanding to 2.5–3.5 mm at mouth; lower lip 3–4.5 mm, parallel to and extending beyond galea, weakly to moderately tri-lobed; upper lip 3–5 mm high, strongly galeate, lateral lobes 1–1.75 mm, acute, upper lobe 1–1.6 mm; lower pair of stamens adnate to corolla tube at 9–11 mm from base, anthers exposed or concealed in the galea. Fruiting calyces 4.5–5.25 mm, the scutellum 4.5–5.5 mm high; nutlets 1.8–2.25 mm, remotely papillate, red-brown; the papillae 0.01–0.05 mm high, broadly conical and apiculate, the papillae and surface between covered with translucent glands.

Distribution. *Scutellaria albituba* has been collected in Costa Rica and Guatemala in forest understory or along forest trails, between 1400 and 1800 m elevation.

Phenology. Collected in flower May, July, November, and December.

Epling (1942), Leonard (1927), and Pool (1998) include this in their concepts of *Scutellaria orichalcea* Donnell Smith. *Scutellaria orichalcea* differs in having corollas totally white or with lips pale yellow or pale green, and corolla tubes relatively longer and narrower (the straight and cylindrical portion of the tube 9–16 × 0.75–1.5 mm), curving strongly upward above base, densely papillate nutlets, and leaves usually oblong with acute apices. Material has also been previously identified as *S. purpurascens* Swartz or *S. breviflora* Benthham, a synonym of *S. purpurascens* (Pool, in an upcoming volume in the *Flora Mesoamer-*



Figure 1. —A. *Scutellaria albituba* A. Pool. Portion of stem with inflorescence and leaves (W. Haber 535 (MO), holotype). B & C. *Scutellaria lactea* A. Pool. —B. Portion of stem with inflorescence and leaves. —C. Portion of inflorescence. (Both from J. Utley & K. Utley 3081 (F), holotype).

icana series). *Scutellaria purpurascens* differs in its smaller (tube with galea 11–14 mm) purple corollas, the tube of which curves up strongly proximally, densely papillate nutlets, ovate leaves, and retrorse trichomes on the stem and inflorescence. *Scutellaria*

albituba is probably most easily confused with *S. lactea*, described below, which differs in its corolla, which curves upward a few millimeters above the base and has white lips, densely papillate nutlets, and retrorse stem trichomes.

Scutellaria albituba would key to *Scutellaria* sect. *Uliginosae* following Epling (1942).

Paratypes. GUATEMALA. **Quiché:** Cerro Putul, "Zona Reyna," A. F. Skutch 1828 (F, GH). COSTA RICA. [**Puntarenas**]: Res. Monteverde, vert. Pacífico, filo de Cerro Amigos, V. J. Dryer 1675 (CR not seen, F, MO); filo al sur del camino, V. J. Dryer 1303 (CR not seen, F). **Guanacaste:** La Cruz de Abangares, W. A. Haber & E. Bello C. 2055 (MO).

2. *Scutellaria lactea* A. Pool, sp. nov. TYPE: Costa Rica. "San José?": San Gerardo de Dota, ca. 8–10 km from Interamerican Highway, 18 Sep. 1975, J. Utley & K. Utley 3081 (holotype, F). Figure 1B, C.

Species nova *Scutellariae orichalceae* Donnell Smith similis sed ab ea corollae tubo ore 3–4 mm diam. cum galea 15–18.5 mm longo, caule trichomatibus retrorsis vestito atque foliis lanceolatis subcoriaceis differt.

Perennial herbs, 0.3–0.6 m; roots proximally thickened; rhizomes short and vertical with 3 stems; stems often with several long branches, strongly quadrangular, pubescent, the indumentum of eglandular trichomes, loosely retrorse, 0.25–0.4 mm, and strongly retrorse, 0.05–0.15 mm. Leaves 3.5–9.5 × 2–4.6 cm, lanceolate, subcoriaceous, dull to dark green above and yellowish green or purple mottled below, glands 0.05–0.15 mm, brown (rarely dull white), adaxial surface with trichomes on midrib ca. 0.05 mm, blade surface nearly glabrous to sparsely pubescent, trichomes 0.03–0.15 mm, abaxial surface with trichomes 0.05–0.25 mm on veins and abundant on blade surface, the base rounded to subcordate, the margins indistinctly serrulate to serrulate from apex to 3/4 or more of length, the apex acuminate to acute; petioles 1.3–3 cm × 0.75–1.5 mm, shorter than adjacent stem internodes. Inflorescence as racemes, 4–8.5 cm, terminal, or terminal and axillary in upper leaf axils, the peduncle 1.3–2 cm, flowers at lower nodes subtended by greatly reduced leaves, the inflorescence axis and pedicels villous, the trichomes dull white, glandular-capitate, patent, 0.25–0.5 mm, or these missing, eglandular, spreading to spreading downward and/or upward, often tangled, 0.05–0.5 mm, the flowers opposite below, subopposite above, secund at anthesis, evenly spaced, erect or ascending; bracts appressed to pedicel to spreading at anthesis, at least some persistent past fruiting, sessile, 2.25–3 × 0.5–1 mm, elliptic, the apex blunt-acuminate; pedicels 3.5–5 mm, bracteoles from near base of pedicel. Flowering calyces 3–3.5 × 3–3.5 mm at mouth, pubescent with eglandular trichomes 0.05–0.1 mm, the scutellum 1.5–2.1 mm high; corolla white or white lightly suffused with purple lines in throat, tube with galea 15–18.5 mm,

externally pubescent; tube strongly curved upward at 3–3.5 mm from base, tube above curve straight and cylindrical for 4–6 × 1.25–1.75 mm, pubescent internally, then straight and gradually expanding to 3–4 mm at mouth; lower lip 2.25–6 mm, parallel to and extending beyond galea, strongly tri-lobed; upper lip 2.5–4.5 mm high, weakly galeate, lateral lobes 1–1.25 mm, acute, the upper lobe 1.5–2.5 mm; lower pair of stamens adnate to corolla tube at 8–11 mm from base, anthers concealed in the galea. Fruiting calyces 5–6 mm, the scutellum 4.5–6 mm high; nutlets 1.6–1.9 mm, densely papillate, black, the papillae 0.05–0.1 mm high, broadly conical and apiculate, papillae and surface between with translucent glands.

Distribution. *Scutellaria lactea* is endemic to Costa Rica, found in oak and bamboo forest, between 900 and 2200 m elevation.

Phenology. Collected in flower September and December.

Known from only four collections, two flowering and two fruiting, this has been previously identified as *Scutellaria orichalcea* or *S. purpurascens*. *Scutellaria purpurascens* differs in its leaves, which are membranaceous with cuneate bases, and flowers, which are tightly spiraled in whorl-like groups, the upper subtended by very narrow bracts, with corollas smaller, the tube with galea 11–14 mm long, and more intensely purple colored. *Scutellaria orichalcea* has membranaceous leaves, which are usually oblong and cuneate; corollas longer (the galea with tube 20–25 mm), relatively narrower (cylindrical portion of tube 9–16 × 0.75–1.5 mm and expanded portion of tube 1.5–3.5 mm wide at mouth), and white with greenish white lips; and stem trichomes antrorse and spreading. *Scutellaria lactea* is most similar to *S. albituba*, which differs in its corolla, which is straight at the base and has dark-colored lips, nutlets with remote papillae, and stems with antrorse trichomes.

Scutellaria lactea would key to *Scutellaria* sect. *Uliginosae* following Epling (1942).

Paratypes. COSTA RICA. **San José:** Near Laguna de la Escudra, NE of El Copey, P. C. Standley 41989 (US); basin of El General, A. F. Skutch 4743 (F, MO); Cantón de Pérez Zeledón, R. F. Los Santos, cuenca del Savegre, a orilla de la carretera y márgenes del Río Savegre, A. Rodríguez, L. D. Vargas & P. Hurtado 3298 (INB not seen, MO).

3. *Scutellaria oblongifolia* A. Pool, sp. nov. TYPE: Panama. Panamá: Region of Cerro Jefe, ca. 1000 m, 3 Oct. 1969, M. D. Correa A., R. L. Dressler, N. Escobar & W. H. Lewis 1622 (holotype, MO; isotype, GH). Figure 2A.

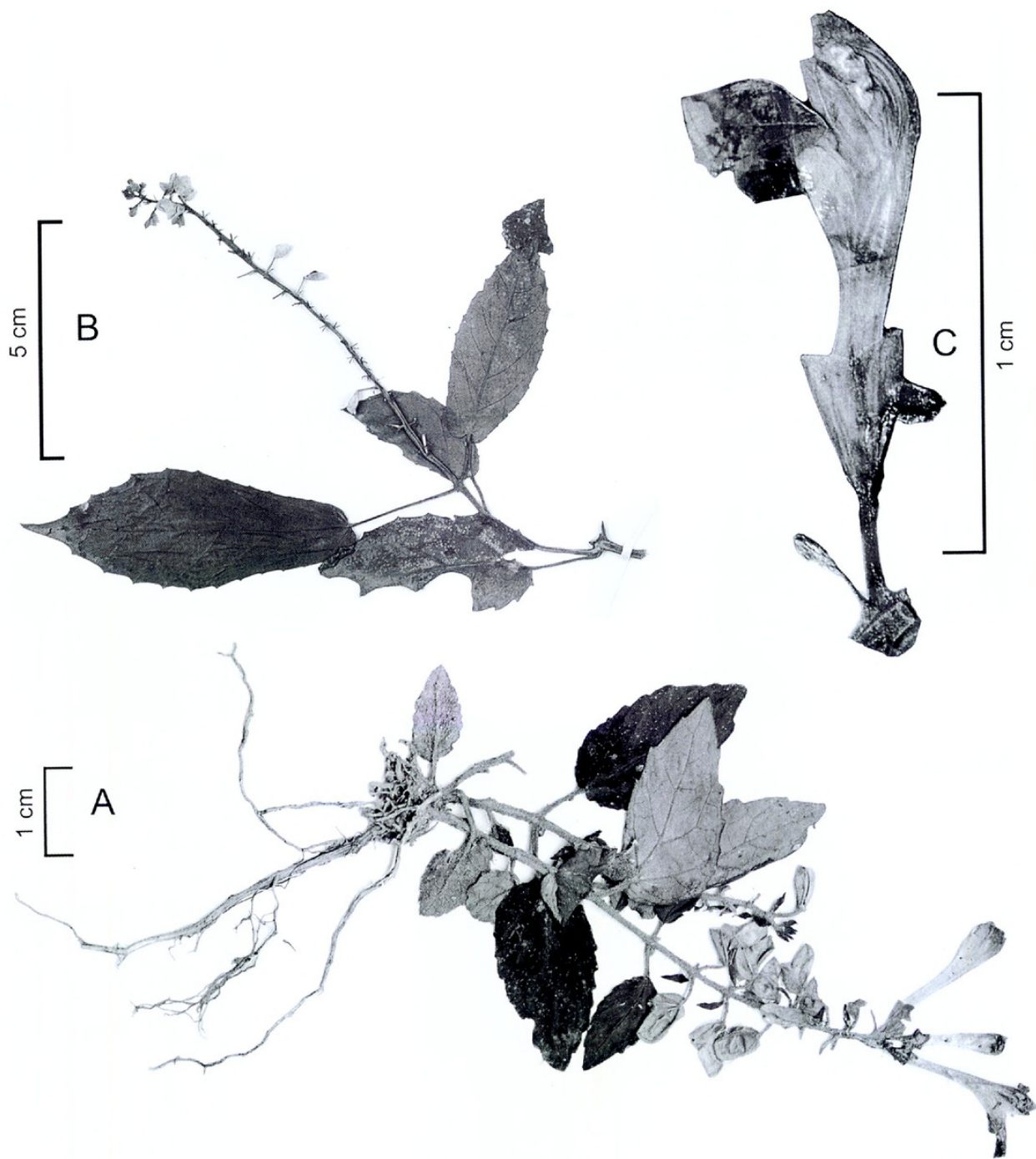


Figure 2. —A. *Scutellaria oblongifolia* A. Pool. Habit (*M. D. Correa A. et al. 1622* (MO), holotype). B & C. *Scutellaria talamancana* A. Pool. —B. Branch with inflorescence and leaves. —C. Flower. (Both from *M. Grayum 10909* (MO), holotype.)

Species nova *Scutellariae tenuipetiolatae* A. Pool similis sed ab ea foliis oblongis basim truncatam vel non profunde cordatam versus valde angustatis, corollae tubo cum galea (15)16–18 mm longo atque nuculis nigris papillis acutis ornatis differt.

Perennial herbs, 0.04–0.2 (rarely 0.3) m; roots slightly fusiform; rhizomes short and vertical with 1 to 3 stems; stems not branched or branching from distal nodes, quadrangular, pubescent, the indumentum of eglandular trichomes, strongly retrorse, 0.05–0.3 mm. Leaves 1.8–8.4 × 1–4.6 cm, oblong, membranaceous,

blackish green above, dull green below, glands inconspicuous, adaxial blade surface with scattered trichomes, few to numerous, 0.2–0.6 mm, or glabrous, abaxial surface with trichomes 0.02–0.1 mm, dense on veins and dense to few on blade surface, the base markedly narrowed and then truncate or cordate, sinus 0.05–2.5 mm deep, the margins serrulate from apex to 3/4 or more of length, the apex blunt-acute or obtuse; petioles 0.5–2.2 cm × 0.5–1.5 mm, shorter than to equal to adjacent stem internodes. Inflorescence as racemes, 1.7–8.5 cm, terminal, or terminal and axillary

in upper leaf axils, the peduncle 0.6–2.4 cm, sometimes with a pair of reduced leaves along length, the leaves subtending flowers, or not, the inflorescence axis and pedicels pubescent, the trichomes pale brown, glandular-capitate, patent, 0.05–0.1 mm, or these missing, and eglandular, spreading and loosely curving downward, 0.05–0.25 mm, and strongly retrorse, 0.02–0.15 mm, the flowers opposite below, alternate and loosely spiraled above, secund at anthesis, evenly spaced, ascending; bracts appressed to pedicel at anthesis, persistent through fruiting, sessile, 2–3 × 0.5–1.2 mm, elliptic, the apex acute; pedicels 1.25–2 mm, bracteoles at about 1/3 length from base of pedicel. Flowering calyces 2.2–3 × 1.5–2.5 mm at mouth, pubescent with a mixture of glandular-capitate trichomes 0.05–0.1 mm, or these missing, and eglandular trichomes 0.02–0.25 mm, the scutellum 1–1.3 mm high; corolla tube white, lips blue or purple, tube with galea (rarely 15) 16–18 mm, externally pubescent; tube strongly curved upward at 2–3 mm from base, tube above curve straight and cylindrical for 4–7.5 × 0.75–1.5 mm, pubescent internally, then straight and abruptly expanding to (rarely 2.5) 3.3–4.75 mm at mouth; lower lip 2.5–5.1 mm, parallel to and extending beyond galea, strongly tri-lobed; upper lip 2.5–4 mm high, weakly galeate, lateral lobes 1–2 mm, acute, the upper lobe 1.25–2 mm; lower pair of stamens adnate to corolla tube at 7.5–9.5 mm from base, anthers concealed in the galea or slightly exposed. Fruiting calyces 4.5–5 mm, the scutellum 4.5–5 mm high; nutlets (rarely 1.5 mm, perhaps immature) 1.75–2 mm, moderately to abundantly papillate, black, the papillae ca. 0.05 mm high, narrowly to broadly conical and apiculate, crowned by a translucent gland, the papillae and surface between covered with translucent glands.

Distribution. *Scutellaria oblongifolia* is endemic to Panama, mainly in the vicinity of Cerro Jefe, and is found in tropical wet forests, between 30 and 1000 m elevation.

Phenology. Collected in flower January, March, April–June, August, October, and November.

Specimens of *Scutellaria oblongifolia* have been previously identified as *S. purpurascens*, which differs most markedly in its ovate leaves with shortly cuneate leaf bases and dark purple corollas (the tube with galea 11–15 mm long) that gradually expand above the narrow cylindrical part of the tube. *Scutellaria oblongifolia* appears to be most similar to *S. tenuipetiolata* A. Pool. *Scutellaria tenuipetiolata* differs from *S. oblongifolia* in leaf shape, ovate with cordate base (vs. oblong with the base markedly narrowed and then truncate or cordate); smaller corollas (tube with galea 12–16 mm or rarely

16.5 mm long); and the nutlet color and ornamentation, light to medium red-brown and remotely papillate to nearly smooth.

Scutellaria oblongifolia would key to *Scutellaria* sect. *Uliginosae* following Epling (1942).

Paratypes. PANAMA. **Panamá:** on rd. near slopes of Cerro Jefe, T. M. Antonio, H. E. Moore & F. E. Putz 3430 (MO); Cerro Jefe, 6 mi. past Cerro Azul on rd. to Altos Pacora, K. Sytsma & W. G. D'Arcy 3684 (MO); forest & path, Finca Indio beside Río Cascadas, W. G. & J. J. D'Arcy 6236 (MO); Finca El Indio, at headwaters of Río Indio, slopes of Cerro Jefe, T. Antonio 2429 (MO); Cerro Jefe area, near Altos de Pacora, W. G. D'Arcy & K. Sytsma 14739 (MO); vic. of Cerro Jefe, Altas de Pacora, T. Antonio 3219 (MO); Gorgas Memorial Labs yellow fever res. camp, ca. 25 km NE of Cerro Azul on Río Piedras, S. Mori & J. Kallunki 3368 (MO); Altos del Río Pacora, W. H. Lewis, B. MacBride & R. Solís 2303 (MO). **Colón:** Along Río Escandaloso near Mina Boquerón, Número 2, above Río Boquerón, T. Antonio 1341 (MO, NY). **Comarca de San Blas:** Río Taindí, 6 km above confluence with Río Mandinga, G. de Nevers & H. Herrera 7653 (MO); Cerro Brewster, headwaters of Río Cangandí, G. de Nevers, H. Herrera, B. Hammel & S. Charnley 5512 (MO); Río Cangandí, pueblo Cangandí, camino nuevo hacia Mandi Yala, H. Herrera 160 (MO).

Scutellaria oblongifolia fits within Epling's (1942) delimitation of *Scutellaria* sect. *Uliginosae* and within this group is associated with the Mesoamerican species *S. galerita* and *S. tenuipetiolata* and the South American species *S. leucantha* Loesener, all of which differ from other members of this section in having corollas that expand abruptly from the top of the narrow cylindrical portion of the tube to the mouth. This corolla type is beautifully illustrated for *S. tenuipetiolata* by J. Myers in Pool (1998). A key to the members of this group is presented below.

KEY TO *SCUTELLARIA* SPECIES IN SECTION *ULIGINOSAE* (TROPICAL AMERICA) WITH COROLLA TUBES THAT EXPAND ABRUPTLY ABOVE THE NARROW CYLINDRICAL PORTION OF THE TUBE TO COROLLA MOUTH

- 1a. Floral bracts widely elliptic, length less than 2 times width; nutlets pale greenish yellow to pale yellow-brown (Peru, Brazil). *S. leucantha*
- 1b. Floral bracts narrowly elliptic, length more than 2 times width; nutlets reddish brown to black (Central America).
 - 2a. Floral bracts deflexed; scutellum 1.5–2.1 mm high (Nicaragua, Costa Rica) *S. galerita*
 - 2b. Floral bracts appressed to spreading parallel to pedicels; scutellum 0.6–1.3 mm high.
 - 3a. Leaves oblong, markedly narrowed at base; galea and tube (rarely 15) 16–18 mm long; nutlets black, moderately to abundantly papillate; stem trichomes strongly retrorse *S. oblongifolia*
 - 3b. Leaves ovate, not markedly narrowed at base; galea and tube 12–16.5 mm long; nutlets reddish brown, remotely papillate to nearly smooth; stem trichomes spreading to downward curving . . . *S. tenuipetiolata*

4. *Scutellaria talamancana* A. Pool, sp. nov. TYPE: Costa Rica. Limón: Cantón de Limón, Cordillera de Talamanca, along divide betw. Río Xikiari & Río Boyei above Cabécar village of Almirante, 9°46'30"N, 83°20'00"W, 1100–1150 m, 13 Aug. 1995, *M. Grayum 10909* (holotype, MO; isotype, INB not seen). Figure 2B, C.

Haec species quoad habitum et corollae formam ad *Scutellariam purpurascentem* Swartz accedit, sed ab ea foliis 7.2–11 cm longis oblongo- vel elliptico-subpanduriformibus, corolla pallida ca. 10 mm longa atque nuculis 2.2–2.5 mm longis revera differt.

Perennial herbs, 0.25–0.5 m; roots proximally thickened; rhizomes short and vertical with 1 or 2 stems; branches developing from previous season's distal nodes, branches strongly quadrangular, angles rounded, puberulent, the indumentum of eglandular trichomes, spreading, or very slightly curving downward at tips, 0.02–0.03 mm, with a few trichomes to 0.05 mm. Leaves 7.2–11 × 3–5.5 cm, elliptic- or oblong-subpandurate, membranaceous, both surfaces light green, but darker above, glands inconspicuous, adaxial blade surface glabrous except for at or near margins, trichomes 0.1–0.25 mm, abaxial surface with trichomes 0.02–0.03 mm on veins and blade surface, or blade surface glabrous, the base deeply cordate, sinus 3–5 mm deep, the margins serrate from apex to 3/4 or more of length, the apex acuminate-caudate; petioles 2–3 cm × 0.8–1 mm, shorter (or rarely longer) than adjacent stem internodes. Inflorescence as racemes, 1.8–3.5 cm, terminal, or terminal and axillary in upper leaf axils, the peduncle 0.4–1.4 cm, flowers at lower nodes sometimes subtended by reduced leaves, the inflorescence axis and pedicels puberulent, the trichomes dull white, eglandular, spreading, 0.02–0.03 mm, the flowers opposite to subopposite below or all alternate and spiraled, appearing secund at anthesis, evenly spaced, spreading; bracts appressed to pedicel at base then spreading perpendicular to inflorescence axis at anthesis, persistent past fruiting, sessile, 2.25–2.75 × 0.5 mm, oblong, the apex acute to rounded; pedicels 2–2.25 mm, bracteoles near 1/3 length from base of pedicel. Flowering calyces 3–3.1 × ca. 2 mm at mouth, pubescent with eglandular trichomes 0.01–0.03 mm, or occasionally with longer trichomes to 0.1 mm at apex, the scutellum 1.1–1.25 mm high; corolla tube color not indicated by collector, assumed to be greenish white, upper lip greenish white, lower lip violet, tube with galea 10–10.3 mm, externally pubescent; tube slightly to strongly curved upward at 2.5–3 mm from base, above curve straight and cylindrical for 1.5–1.75 × 1 mm, pubescent internally, then straight and gradually expanding to

2 mm at mouth; lower lip 3–3.25 mm, deflexed and extending beyond galea, strongly tri-lobed; upper lip 2.75–3 mm high, weakly galeate, lateral lobes 1.1–1.25 mm, acute to acuminate, the upper lobe 1.5–1.75 mm; lower pair of stamens adnate to corolla tube at 5.5–6 mm from base, anthers slightly exposed or concealed in the galea. Fruiting calyces ca. 4.75 mm, the scutellum ca. 4.5 mm high; nutlets 2.2–2.5 mm, remotely papillate, light red-brown; the papillae ca. 0.05 mm high, conical and apiculate, the papillae and surface between covered with translucent glands.

Distribution. *Scutellaria talamancana* is known only from the type locality in Costa Rica.

Phenology. Collected in flower in August.

Scutellaria talamancana is unusual in its combination of very small flowers (tube with galea 10–10.3 mm) and large (7.2–11 cm) subpandurate leaves. It is one of only four species in Mesoamerica with corollas (tube with galea) smaller than 12 mm long, the others being *S. racemosa* (4.5–6 mm), *S. gaumeri* Leonard (10–13 mm), and *S. purpurascens* (11–14 mm), all of which are quite different from *S. talamancana*. *Scutellaria racemosa* has fibrous roots, elongate rhizomes, small hastate leaves (0.75–2.9 cm), and flowers solitary in the leaf axils. *Scutellaria gaumeri* has ovate to deltate leaves, flowers opposite in the axils of long-petiolate bracts, and nutlet papillae that are topped with a peltate scale. *Scutellaria purpurascens* has ovate leaves, which are basally rounded or truncate and then shortly cuneate, apical flowers tightly spiraled in whorl-like clusters, corollas purple, and nutlets 1–1.9 mm long. Five additional Mesoamerican species, *S. costaricana*, *S. ebracteata* A. Pool, *S. glabra* Leonard, *S. hookeri* Epling, and *S. tucurriquensis* A. Pool, have leaves of similar shape to those of *S. talamancana*, but they have much larger (tube with galea 19–65 mm) corollas, which are red, red-orange, red-purple, rose, or lavender.

Scutellaria talamancana would key to *Scutellaria* sect. *Uliginosae* following Epling (1942).

II. *Scutellaria* sect. *Speciosae* (Epling) Epling, Lilloa 4: 258. 1939. *Scutellaria* sect. *Heteranthesis* subsect. *Speciosae* Epling, Repert. Spec. Nov. Regni Veg., Beih. 85: 174. 1936. TYPE SPECIES: *Scutellaria ventenatii* Hooker, Bot. Mag. 72: t. 4271. 1846.

1. *Scutellaria molinarum* A. Pool, sp. nov. TYPE: Guatemala. Chiquimula: betw. Guatemala-Honduras border & Atulapa, 900 m, 9 Dec. 1969, A. Molina R. & A. R. Molina 25271 (holotype, EAP; isotypes, F, MO, NY, US). Figure 3A.

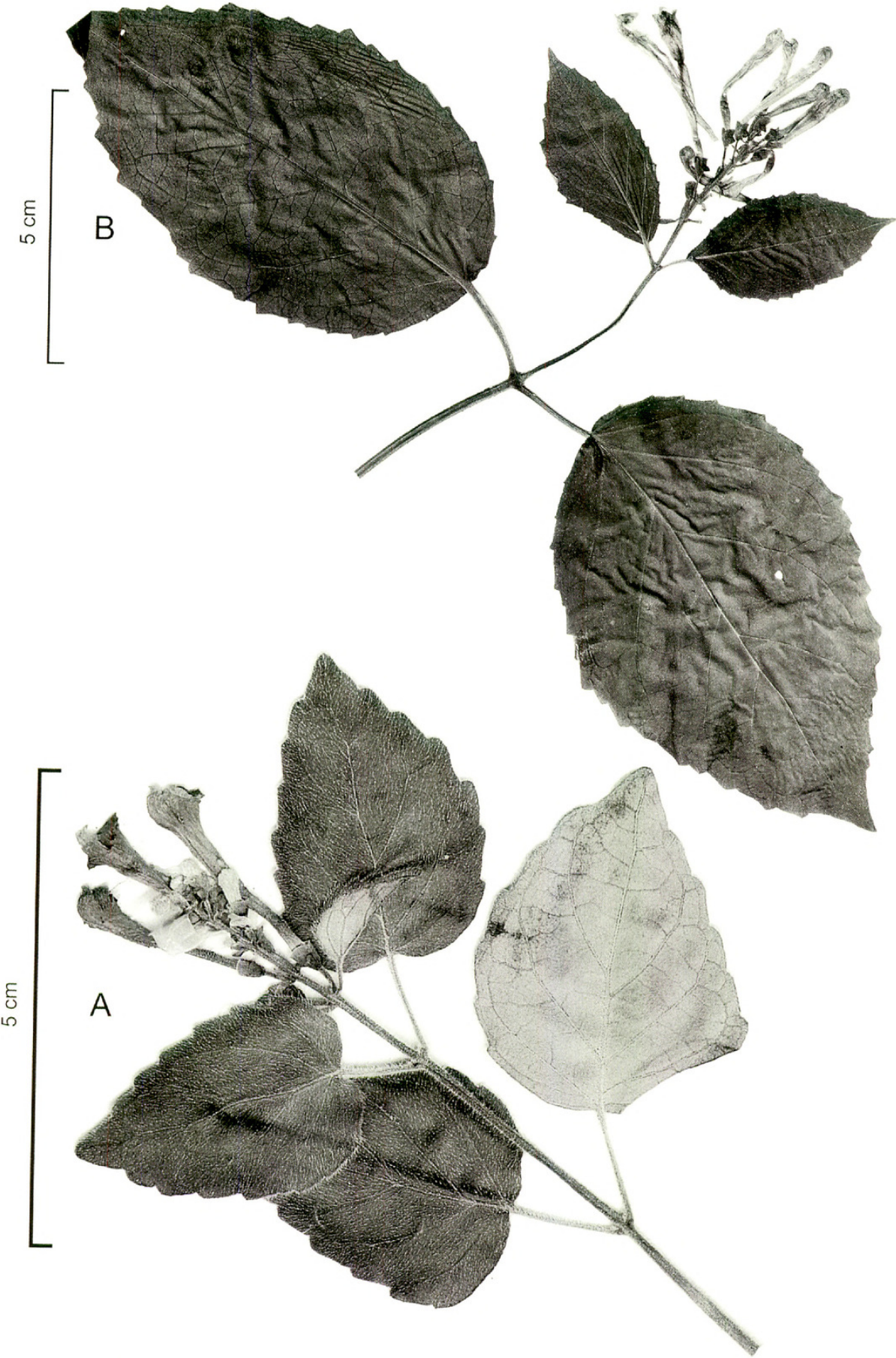


Figure 3. —A. *Scutellaria molinarum* A. Pool. Portion of branch with inflorescence and leaves (A. Molina R. & A. R. Molina 25271 (EAP), holotype). —B. *Scutellaria aurantiaca* A. Pool. Portion of stem with inflorescence and leaves (J. Saunders 1114 (NY), holotype).

Species nova *Scutellariae guatemalensis* Leonard similis sed ab ea corollae tubo cum galea 22–26 mm longo, bracteis patentibus (non deflexis) atque foliorum base rotundata deinde interdum ad cuneata petiolo 0.7–2.8 cm longo differt.

Perennial herbs, 0.5–1 m; roots proximally thickened; rhizomes short and vertical with several stems; stems branching, branches often short with few leaves and terminating with raceme, rounded-quadrangular, pilose, the indumentum of a mixture of glandular-capitate patent trichomes, 0.15–0.5 mm, or these missing, and a mixture of spreading long and short eglandular trichomes 0.25–1.5 mm and 0.05–0.1 mm, respectively. Leaves $2\text{--}4.4 \times 1.7\text{--}3.6$ cm, ovate, membranaceous to subcoriaceous, dark olive green above and pale yellowish gray-green or purplish below, glands inconspicuous, adaxial blade surface with abundant to dense (rarely sparse) trichomes, 0.1–2 mm, abaxial surface with trichomes 0.1–1.3 mm, dense to abundant on veins and blade surface, sometimes sparse on blade surface, the base rounded to rounded and then shortly cuneate, the margins serrulate to serrate (rarely crenulate) from apex to 2/3 or 3/4 or more of length, the apex acute to obtuse; petioles $0.7\text{--}2.8$ cm \times $0.5\text{--}0.75$ mm, shorter than to longer than adjacent stem internodes. Inflorescence as racemes, 0.9–11 cm, terminal, or terminal and axillary in upper leaf axils, the peduncle 0.5–4 cm, flowers at lower nodes subtended by reduced leaves, the inflorescence axis and pedicels velutinous, the trichomes dull white, a mixture of glandular-capitate, these patent, 0.1–0.3 mm, and a mixture of spreading long and short eglandular trichomes, 0.25–1 mm and 0.05–0.1 mm, respectively, the flowers opposite below, sometimes alternate above, secund at anthesis, evenly spaced, erect to steeply ascending; bracts spreading perpendicular to inflorescence axis (rarely appressed to pedicels at base), persistent past fruiting, sessile, $1\text{--}2.5 \times 0.4\text{--}0.75$ mm, oblong to narrowly elliptic, the apex rounded; pedicels 2.5–3 mm, bracteoles near base to 1/3 length from base of pedicel. Flowering calyces $2.75\text{--}3.1 \times 2.3\text{--}2.75$ mm at mouth, pubescent with glandular-capitate trichomes 0.15–0.25 mm, or these missing, and eglandular trichomes 0.025–0.25 mm, the scutellum 0.75–1.1 mm high; corolla magenta or rose-orchid (rarely described on herbarium labels as lavender or crimson), tube with galea 22–26 mm, externally pubescent; tube slightly curving upward at 2.75–3.5 mm from base, above curve straight and cylindrical for $2.5\text{--}6 \times 1\text{--}1.75$ mm, pubescent internally, then straight and gradually expanding to 3.2–5 mm at mouth; lower lip 2.5–6 mm, parallel to and extending beyond galea, strongly tri-lobed; upper lip 3.25–6 mm high, strongly galeate, lateral lobes 1.1–2 mm, rounded, the upper lobe 1.5–2 mm; lower pair of

stamens adnate to corolla tube at 12–17 mm from base, anthers concealed in the galea. Fruiting calyces 5–6 mm, the scutellum 5–6 mm high; nutlets 1.5–2.2 mm, densely papillate, dark reddish brown, or darker between papillae, papillae 0.03–0.05 mm high, conical and obtuse, papillae and surface between with translucent glands.

Distribution. *Scutellaria molinarum* is found near the southern sector of the border between Guatemala and Honduras, in pine or pine-oak forests, between 900 and 2400 m elevation.

Phenology. Collected in flower January, May, October, and December.

The one specimen of *Scutellaria molinarum* known to have been seen by Epling (*Steyermark* 42472, F) was identified by him as *S. seleriana* Loesener. *Scutellaria seleriana* differs from *S. molinarum* in its floral bracts, which are broadly ovate or orbicular and long-petiolate, the straight and cylindrical portion of the corolla tubes relatively narrow ($6\text{--}10.5 \times 0.6\text{--}1.5$ mm); nutlet papillae, which are crowned by a peltate-stellate scale, the arms of which hook downward; and the stem pubescence, which includes small retrorse trichomes. *Scutellaria molinarum* is most similar to *S. guatemalensis* Leonard, which has smaller corollas (tube with galea 12–16 mm); nutlets with broader papillae that are stout, thick, and apically depressed, contrasting greatly in color with background nutlet surface; petioles generally shorter (0.3–1 cm); and subcordate to cordate leaves. Specimens of *S. molinarum* have also been identified as *S. purpurascens*, which differs in its smaller purple corollas (tube with galea 11–14 mm), flowers arranged in approximate whorls, and the indumentum of the stem and inflorescence axis with retrorse, eglandular trichomes, with no glandular-capitate trichomes present.

Scutellaria molinarum would key to *Scutellaria* sect. *Speciosae* following Epling (1942).

Scutellaria molinarum is named in honor of Honduran botanists Antonio Molina R. and his wife, Albertina R. de Molina, who collected several specimens of this new species, including its type, and have contributed vastly to our knowledge of the Honduran flora.

Paratypes. GUATEMALA. **Chiquimula:** Montaña Castilla, vic. of Montaña Cebollas, along Río Lucía Saso, 3 mi. SE of Quezaltepeque, *J. A. Steyermark* 31348 (F). **Zacapa:** Upper slopes Sierra de las Minas, along Río Repollal to mtn. summit, *J. A. Steyermark* 42472 (F, US). HONDURAS. **Ocatepeque:** Hillsides of Machuca, Honduras & Guatemala border, *A. Molina R. & A. R. Molina* 27861 (EAP, F); ca. 8 km SW of Santa Fé near Guatemala border, *A. Molina R., L. O. Williams, A. R. Molina, T. P. Williams & J. A. Molina* 31274 (EAP). **Lempira:** Montaña de Celaque, river banks of

Quebrada Naranja above la planta (eléctrica) above Villa Verde, 7.5 km SW of Gracias, W. G. D'Arcy 17862 (EAP).

III. *Scutellaria* sect. *Cardinales* Epling, Lilloa 4: 263. 1939. TYPE SPECIES: *Scutellaria longifolia* Benth., in Lindley, Edwards's Bot. Reg. 18: sub t. 1493. 1832.

1. *Scutellaria aurantiaca* A. Pool, sp. nov. TYPE: Honduras. Gracias a Dios: 3 hr. walk NW from camp, mountain peak, Camp Tiro, 2 mi. NW of Bulebar on third branch of Quebrada Tiro, tributary of Río Plátano, 15°43'N, 84°50'W, 1500–2200 ft., 25 Mar. 1981, J. Saunders 1114 (holotype, NY). Figure 3B.

Species nova *Scutellariae lundellii* Epling et *S. longifoliae* Benth. similis sed ab eis habitu herbacea erecta pauciramos atque inflorescentia minore bracteis persistentibus munita differt.

Tall herbs, taller than 0.4 m, the total height not indicated on herbarium label; lower parts not seen; stem little branching above, weakly quadrangular with rounded edges, minutely densely pubescent, indumentum of eglandular trichomes, weakly to strongly antrorse, 0.05–0.2 mm. Leaves 9.2–9.4 × 5.2–5.9 cm, widely elliptic-lanceolate, brownish green above and below, glands inconspicuous, adaxial surface with few trichomes scattered on blade surface, 0.2–0.5 mm, abaxial surface and veins with dense trichomes, trichomes on veins 0.05–0.15 mm, trichomes on blade surface 0.025–0.05 mm, the base rounded, the margins serrate from apex to 3/4 or more of length, the apex acute to short-acuminate; petioles 1.5–1.8 cm × 0.75–1.25 mm, much shorter than adjacent stem internode. Inflorescence as racemes, ca. 3 cm, terminal, peduncle ca. 4.5 cm with a pair of reduced leaves near apex, the inflorescence axis and pedicels densely pubescent, the trichomes dull white, eglandular, weakly to strongly antrorse, 0.05–0.25 mm, the flowers opposite below, alternate and spiraling above, secund at anthesis, evenly spaced, erect to spreading-ascending; bracts deflexed at anthesis, persistent at least through flowering, sessile, 2.5–3.5 × 0.4–0.6 mm, narrowly oblanceolate, the apex blunt-acute; pedicels 3.5–4.1 mm, bracteoles 1/3 to 1/2 length from base of pedicel. Flowering calyces 3–3.25 × 2.25–2.5 mm at mouth, densely pubescent, eglandular trichomes 0.05–0.2 mm, the scutellum 1.25–1.5 mm high; corolla bright red-orange, tube with galea 32 mm, externally pubescent; tube slightly curving upward at 2.25–3 mm from base, above curve straight and cylindrical for ca. 8 × ca. 1.25 mm, pubescent internally, then straight and gradually expanding to ca. 4 mm at mouth; lower lip ca. 4 mm, parallel to galea, strongly tri-lobed; upper lip ca.

5.1 mm high, the lateral lobes ca. 1.5 mm, rounded, the upper lobe ca. 2.5 mm; lower pair of stamens adnate to corolla tube at ca. 18 mm from base, anthers concealed in the galea. Fruiting calyces not seen; nutlets not seen.

Distribution. *Scutellaria aurantiaca* is known only from the type locality in Honduras.

Phenology. Collected in flower in March.

This unusual species is most similar to *Scutellaria lundellii* Epling and *S. longifolia* Benth., both of which differ from *S. aurantiaca* in being abundantly branched shrubs, or suffrutescent, with elongated inflorescences, 6.5–25 cm long, the bracts of which are lost prior to anthesis. In addition, *S. lundellii* has smaller (2.5–7 × 1.4–3.5 cm), usually oblong, leaves serrate only in the apical 1/2 to 2/3, and petioles less than 1 cm long. *Scutellaria longifolia* is less pubescent than *S. aurantiaca*; it has smaller trichomes (0.01–0.05 mm) on the stem and inflorescence axis and fewer trichomes on the abaxial leaf surface, its leaves are long-acuminate and generally falcate, and its corollas expand abruptly then gradually above the narrow base.

Scutellaria aurantiaca would key to *Scutellaria* sect. *Cardinales* following Epling (1942).

2. *Scutellaria multiramosa* A. Pool, sp. nov. TYPE: Panama. Chiriquí: Cerro Colorado, along rd. to old copper mine development N of San Félix, 18.6 mi. N of bridge over river near San Félix, 6.6 mi. beyond Chamé & rd. to Escopeta, 8°30'N, 81°46'W, 1475–1485 m, 30 Mar. 1993, T. B. Croat 74999 (holotype, MO; isotype, MEXU). Figure 4A.

Species nova *Scutellariae isocheilae* Donnell Smith similis sed ab eis habitu fruticoso ligneo ramosissimo, bracteis parvulis latis ad pedicellos adpressis aequae scutello 0.50–0.75 mm alto differt.

Shrubs, 1–1.5 m; lower parts not seen; stem abundantly branching above, quadrangular, pubescent, the indumentum of eglandular trichomes spreading to strongly antrorse, 0.1–0.5 mm. Leaves 2.5–5.2 × 1–1.8 cm, elliptic to nearly oblong, membranaceous, dark green above, similar below or slightly lighter, glands ca. 0.1 mm, dark reddish brown, adaxial blade surface glabrous or with trichomes 0.05–0.1 mm on main veins, abaxial blade surface glabrous or with trichomes 0.025–0.05 mm evenly distributed overall with trichomes on venation 0.05–0.1 mm, the base attenuate to cuneate or rounded, usually unequally so, the margins serrulate from apex to 1/2 to 2/3 of length, the apex acute to acuminate; petioles 0.8–1.5 cm × 0.5–0.75 mm,

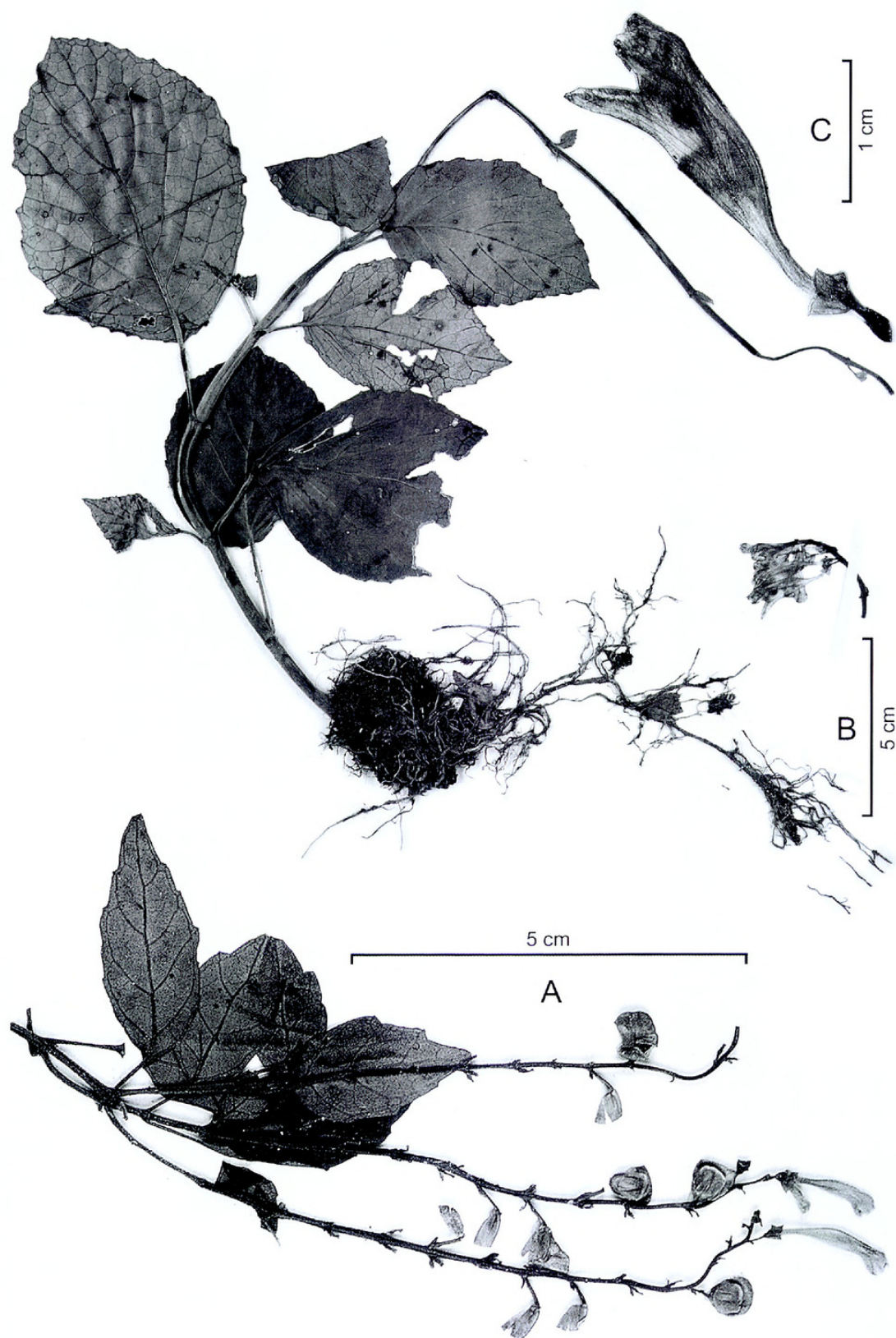


Figure 4. —A. *Scutellaria multiramosa* A. Pool. Portion of branch with inflorescence and leaves (*T. B. Croat* 74999 (MO), holotype). B & C. *Scutellaria saslayensis* A. Pool. —B. Habit, apex of inflorescence broken and reversed. —C. Flower. (Both from *A. J. Ferguson* 2 (MO), holotype.)

equal to or shorter than adjacent stem internode. Inflorescence as racemes, 5.2–14 cm, terminal and often appearing axillary, but terminal on very short branches, the peduncle 0.2–1.5 cm, often with 1 or 2 pairs of reduced leaves starting 1/2 of length from base with flowers developing from axils, the inflorescence axis and pedicels densely pubescent, the trichomes reddish purple to brown, eglandular, weakly antrorse, 0.1–0.2 mm, the flowers opposite-decussate below to spiraling alternate above, secund at anthesis, evenly spaced, erect; bracts appressed to pedicel, generally persistent in fruit, sessile, $0.6\text{--}1.75 \times 0.45\text{--}1$ mm, widely elliptic, the apex rounded; pedicels 1.75–3 mm, bracteoles near 1/2 length from base of pedicel. Flowering calyces $2.5\text{--}4.5 \times 1.8\text{--}2.25$ mm at mouth, scarcely pubescent on margins and sometimes on upper lip, with glandular-capitate trichomes 0.05–0.1 mm, and eglandular trichomes ca. 0.025 mm, the scutellum 0.5–0.75 mm high; corolla reddish violet with lip white to light pink, tube with galea 21–27 mm, externally pubescent; tube curving upward at 2–3.2 mm from base, above curve straight and cylindrical for $4.25\text{--}5 \times 1.25\text{--}2.5$ mm, pubescent internally, then slightly curving and gradually expanding to 3–5.5 mm at mouth; lower lip 3.25–5 mm, slightly curving downward and extending slightly beyond galea, moderately tri-lobed; upper lip 4–4.75 mm high, weakly galeate, the lateral lobes 1.25–1.5 mm, obtuse, the upper lobe 1–1.5 mm; lower pair of stamens adnate to corolla tube at ca. 12 mm from base, anthers concealed in the galea. Fruiting calyces 3.5–4.75 mm, the scutellum 3.5–4 mm high; nutlets ca. 2 mm, remotely papillate, reddish brown with pale brown papillae, the papillae 0.03–0.05 mm high, cylindrical to narrowly conical and apically truncate with caducous apical gland.

Distribution. *Scutellaria multiramosa* is endemic to Panama, where it is found in the vicinities of Cerro Colorado and Cerro Tute, growing in cloud forest, between 1450 and 1500 m elevation.

Phenology. Collected in flower March, June, and July.

Specimens of *Scutellaria multiramosa* have been previously identified as *S. lewisiana* Nowicke, a synonym of *S. isocheila* Donnell Smith (Pool, in an upcoming volume in the *Flora Mesoamericana* series). *Scutellaria isocheila* differs in being a woody-based herb, less branched, with spreading bracts, longer and relatively narrower ($2.5\text{--}6 \times 0.5\text{--}1.5$ mm, the length more than 3 times the width vs. *S. multiramosa*, $0.6\text{--}1.75 \times 0.45\text{--}1$ mm, the length less than 3 times the width), longer pedicels (3–5 mm), and higher scutellum in flower (1.25–2 mm).

Scutellaria multiramosa would key to *Scutellaria* sect. *Cardinales* following Epling (1942).

Paratypes. PANAMA. **Chiriquí:** Cerro Colorado, near Continental Divide, *T. Antonio 1507* (MO). **Bocas del Toro:** 12 mi. beyond camp, Chamé, “12 + 12 mi.” from río San Félix, *W. G. D’Arcy 16275* (MEXU, MO); Cerro Colorado, 9.2 mi. W of Chamé, along trail E of rd. to stream, *T. B. Croat 69061* (MO). **Veraguas:** Cerro Tute, ca. 10 km NW of Santa Fé, on ridge top in cloud forest, *S. Mori 6770* (MO).

3. *Scutellaria saslayensis* A. Pool, sp. nov. TYPE: Nicaragua. Zelaya: Cerro Saslaya, a unos 25 km al oeste de Siuna, 1200 m, Oct. 1977, *A. J. Ferguson 2* (holotype, MO; isotype, HNMN not seen). Figure 4B, C.

Species nova Scutellariae ebracteatae A. Pool similis sed ab ea corolla rubra e basi ca. 3 mm argute sursum flexa ac supra tubum angustum orem versus abrupte expansa, foliis late ellipticis atque caule trichomatibus retrorsis vestito differt.

Perennial herbs, 0.4–1 m; roots fibrous; rhizomes short, thick and horizontal with 2 stems; stems not branching, rounded to quadrangular, minutely pubescent, the indumentum of eglandular trichomes, weakly retrorse, 0.2–0.25 mm, and strongly retrorse, 0.025–0.15 mm. Leaves $6\text{--}13.5 \times 4\text{--}6.5$ cm, widely elliptic, subcoriaceous, dark green above, yellow-green below, glands ca. 0.05 mm, orange, adaxial blade surface glabrous, abaxial surface with trichomes 0.05–0.2 mm on main veins, and scattered on blade surface, ca. 0.025 mm, the base narrowed then unequally rounded to cordate, sinus to 3 mm deep, the margins serrulate to serrate from apex to 3/4 or more of length, the apex short-acute to obtuse; petioles $1.5\text{--}3.5 \times 1\text{--}1.5$ mm, shorter than adjacent stem internodes. Inflorescence as racemes, 26–26.5 cm, terminal, peduncle 10.5–19 cm, with 2 pairs of reduced leaves at or above 1/3 length, the inflorescence axis and pedicels pubescent, the trichomes dull white to brown septate, eglandular, spreading or weakly retrorse, 0.15–0.3 mm, and strongly retrorse, 0.025–0.05 mm, the flowers opposite below, alternate and spiraling above, secund at anthesis, evenly spaced, the inflorescence curving downward but flowers spreading upward; bracts lost prior to anthesis, petiolate, bract blades $4.5\text{--}5.5 \times 1.5\text{--}1.7$ mm, lanceolate, the apex attenuate-acute; pedicels 2.5–3 mm, bracteoles not seen. Flowering calyces $3\text{--}3.75 \times 2.5\text{--}3.25$ mm at mouth, pubescent, with eglandular trichomes 0.025–0.05 mm, the scutellum 1.5–1.75 mm high; corolla red, tube with galea 27–29 mm, externally pubescent; tube sharply curving upward at 2.75–3 mm from base, above curve straight and cylindrical for $6\text{--}7 \times$ ca. 1 mm,

glabrous internally, then gently curving and abruptly expanding to 5.5 mm at mouth; lower lip 5.5–6 mm, more or less parallel to and extending beyond galea, weakly tri-lobed; upper lip 5.5–7 mm high, weakly galeate, the lateral lobes 1–1.75 mm, obtuse, the upper lobe 1–2 mm; lower pair of stamens adnate to corolla tube at ca. 16 mm from base, anthers concealed in the galea. Fruiting calyces not seen; nutlets not seen.

Distribution. *Scutellaria saslayensis* is known from two collections made in the cloud forests of Cerro Saslaya, Nicaragua, between 1100 and 1400 m elevation.

Phenology. Collected in bud in May, in flower in October.

Pool (1998) included the specimens of *Scutellaria saslayensis* in *S. ebracteata*, which differs in its red-purple corollas that are straight at the base and abruptly then gradually expand above the narrow cylindrical portion of the tube to the mouth, its narrower oblanceolate to elliptic leaves, and its antrorse trichomes on the stem and inflorescence.

Scutellaria saslayensis would key to *Scutellaria* sect. *Cardinales* following Epling (1942).

Paratype. NICARAGUA. **Zelaya:** Cerro Saslaya, 20 km W of Siuna, cloud forest, along E mtn. ridge, *D. A. Neill* 1832 (MO).

4. *Scutellaria tucurriquensis* A. Pool, sp. nov.

TYPE: Costa Rica. Cartago: Turrialba, along trail to river in back of main building, Inter-Amer. Inst. of Agric. Sci., 13 July 1955, *B. G. Schubert & D. L. Rogerson* 841 (holotype, A). Figure 5A, B.

Species nova *Scutellariae glabrae* Leonard similis sed ab ea caule dense pubescenti atque corolla sine dente basali differt.

Tall herbs, taller than 0.5 m, the total height not indicated on herbarium labels; lower parts not seen; stem not branching above, weakly quadrangular with rounded edges, minutely densely pubescent, indumentum of eglandular trichomes, weakly to strongly antrorse, 0.025–0.05 mm. Leaves 9–12.5 × 4–4.6 cm, elliptic to slightly subpandurate, membranaceous, green above, slightly paler green below, glands inconspicuous, adaxial blade surface glabrous or with very few trichomes scattered on surface, 0.1–0.3 mm, abaxial blade surface and veins with scattered trichomes, ca. 0.025 mm, the base narrowed then subcordate to cordate, sinus 1–3 mm deep, the margins serrate from apex to 3/4 or more of length, the apex acuminate and falcate; petioles 1.3–3 cm ×

1–1.5 mm, much shorter than adjacent stem internode. Inflorescence as racemes, 8–27 cm, terminal, peduncle 1.5–3.5 cm, sometimes with a pair of reduced leaves at 2/3 of length, the inflorescence axis and pedicels densely pubescent, the trichomes dull white to pale brown, eglandular, weakly to strongly antrorse, 0.025–0.1 mm, the flowers opposite below, alternate and spiraling above, often in groups of 4, secund at anthesis, evenly spaced, spreading; bracts strongly deflexed at anthesis if present, lost at anthesis or during flowering, sessile, 1.5–2.5 × 0.3–0.7 mm, linear, the apex acute to truncate; pedicels 3.5–4.5 mm, bracteoles near base of pedicel. Flowering calyces 3.25–4 × 2.1–2.25 mm at mouth, nearly glabrous to densely pubescent, eglandular trichomes 0.025–0.05 mm, the scutellum 1.5–2 mm high; corolla scarlet, tube with galea 21–23 mm, nearly glabrous; tube strongly curving upward at 3.5–5 mm from base, above curve straight and cylindrical for 3.5–4.5 × 1 mm, pubescent internally, then gently curving and abruptly then gradually expanding to 3.5–4 mm at mouth; lower lip 2.5–3.5 mm, parallel to galea, weakly tri-lobed; upper lip 3–4.1 mm high, strongly galeate, the lateral lobes 1–1.25 mm, acute, the upper lobe 1.25–2 mm; lower pair of stamens adnate to corolla tube at 16.5–17 mm from base, anthers concealed in the galea. Fruiting calyces not seen; nutlets not seen.

Distribution. *Scutellaria tucurriquensis* is endemic to Cartago, Costa Rica, in the vicinity of Tucurrique, where it is found growing along rivers, between 600 and 800 m elevation.

Phenology. Collected in flower May and June.

Scutellaria tucurriquensis is similar to *S. glabra* and *S. ebracteata*. *Scutellaria glabra* differs in its corolla tube having a large saccate tooth near its base and glabrous stems and abaxial leaf surfaces. *Scutellaria ebracteata* differs in its pendulous flowers, with longer (tube with galea 27–32 mm) reddish purple corollas, straight at the base and widening to 4.5–6 mm at mouth. Epling (1942) cites *S. longifolia* from Costa Rica based on *Donnell Smith* 6700 (US), treated here as *S. tucurriquensis*. *Scutellaria longifolia* differs from *S. tucurriquensis* in its lanceolate leaves with bases rounded to cuneate or attenuate, and orange-red corollas, which are 27–33 mm long, and straight (or nearly so) at the base and above the narrow cylindrical portion of the tube.

Scutellaria tucurriquensis would key to *Scutellaria* sect. *Cardinales* following Epling (1942).

Paratypes. COSTA RICA. **Cartago:** S bank of Río Pejivalle, *C. W. Dodge & W. S. Thomas* 4398 (GH, MO); Atirro, *J. Donnell Smith* 6700 (GH, US); Inst. Turrialba, *J. León* 2521 (EAP).



Figure 5. A & B. *Scutellaria tucurriquensis* A. Pool. —A. Portion of stem with inflorescence and leaves (*B. G. Schubert & D. L. Rogerson 841* (A), holotype). —B. Portion of inflorescence (*J. León 2521* (EAP), paratype). —C. *Scutellaria tutensis* A. Pool. Portion of branch with inflorescence and leaves. (*K. Sytsma & L. Andersson 4589* (MO), holotype).

5. *Scutellaria tutensis* A. Pool, sp. nov. TYPE: Panama. Veraguas: Cerro Tute, E slopes, 1 km beyond Escuela Agrícola Alto de Piedra above Santa Fé, 1200–1450 m, 14 May 1981, K. Sytsma & L. Andersson 4589 (holotype, MO). Figure 5C.

Species nova *Scutellariae isocheilae* Donnell Smith similis sed ab ea bracteis ad pedicellos elongatos adpressis, inflorescentia trichomatibus capitato-glanduliferis vestita atque corolla dilute caesia differt.

Suffruticose herbs, taller than 0.3 m, the total height not indicated on herbarium labels; lower parts not seen; often with a number of branches in upper portion, strongly quadrangular, minutely pubescent, the indumentum of eglandular trichomes spreading, 0.025–0.1 mm. Leaves 3.2–6.6 × 1.7–2.6 cm, oblanceolate to rhombic, subcoriaceous to membranaceous, dark green above, yellowish green below, glands ca. 0.05 mm, orange, blade glabrous on both surfaces, the base unequally cuneate to attenuate, the margins serrate from apex to 2/3 of length, the apex acute; petioles 1–2 cm × 0.6–0.9 mm, longer than adjacent stem internodes. Inflorescence as racemes, 4.2–6.2 cm, terminal, peduncle 2.5–2.7 cm, often with 1 pair of reduced leaves at 1/2 to 2/3 length, the inflorescence axis and pedicels pubescent, the trichomes colorless except for brown septa, a mixture of glandular-capitate, these patent, 0.25–0.4 mm, and eglandular and spreading, 0.025–0.1 mm, the flowers opposite below, alternate and spiraling above, secund at anthesis, evenly spaced, spreading; bracts appressed to pedicels at anthesis, persistent through flowering, sessile, the blades 3–4 × 0.75–0.9 mm, linear, the apex rounded; pedicels 6–6.5 mm, bracteoles at 1/2 length from base of pedicel. Flowering calyces 4–5 × 3.6–4 mm at mouth, pubescent, glandular-capitate trichomes on margin, ca. 0.1 mm, eglandular trichomes on surface, 0.025–0.05 mm, the scutellum 2–2.25 mm high; corolla pale lavender with white lips, tube with galea 26–28 mm, externally pubescent; tube straight and cylindrical at base for 5–6 × 1.5–1.75 mm, short-pubescent internally, then gently curving and gradually expanding to 5–6.2 mm at mouth; lower lip 3.5–5 mm, parallel to and expanding beyond the galea, weakly tri-lobed; upper lip 4.3–4.5 mm high, weakly galeate, the lateral lobes ca. 1.75 mm, obtuse, the upper lobe 1–1.8 mm; lower pair of stamens adnate to corolla tube at ca. 17 mm from base, anthers concealed in the galea. Fruiting calyces not seen; nutlets not seen.

Distribution. *Scutellaria tutensis* is known from one flowering specimen (holotype) and one further specimen with the remains of a postmature inflorescence, both from Cerro Tute in Panama, where they were collected in wet premontane to low cloud forest, between 1200 and 1400 m elevation.

Phenology. Collected in flower in May.

Scutellaria tutensis is most similar to *S. isocheila*. *Scutellaria isocheila* differs from *S. tutensis* in its smaller pedicels, 3–5 mm long, floral bracts spreading to deflexed, eglandular trichomes, and corolla tube usually magenta or fuchsia, or rarely, lavender. *Scutellaria lewisiana*, treated as a synonym of *S. isocheila* (Pool, in an upcoming volume in the *Flora Mesoamericana* series), was described by Nowicke (1969) as having pedicels 4–6 mm long and the corollas lavender; however, on the holotype (*J. H. Kirkbride* & *J. A. Duke*, MO) and isotype (NY) the pedicels are not longer than 5 mm, and the dried corollas are much darker colored than the dried corollas of *S. tutensis*.

Scutellaria tutensis would key to *Scutellaria* sect. *Cardinales* following Epling (1942).

Paratype. PANAMA. **Veraguas:** Ridge of Cordillera de Tute, trail to Cerro Tute, above escuela agrícola Alto de Piedra, just W of Santa Fé, *S. Knapp* & *R. Dressler* 5404 (MO).

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