

## RECENSION OF THE MEXICAN SPECIES OF SECTION *ULIGINOSAE* OF *SALVIA* (LAMIACEAE)

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### ABSTRACT

*Salvia* sect. *Uliginosae* of Mexico is treated as having 28 species, five of these described as new: ***Salvia chazaroana*** B.L. Turner, **sp. nov.**, from Veracruz; ***Salvia galloana*** B.L. Turner, **sp. nov.**, from Guerrero; ***Salvia novoleontis*** B.L. Turner, **sp. nov.**, from Nuevo Leon; ***Salvia textitlana*** B.L. Turner, **sp. nov.**, from Oaxaca; and ***Salvia paulwalleri*** B.L. Turner, **sp. nov.**, from Durango. Photographs of the holotypes are provided, along with a simplified key to the 28 species, and maps showing their distributions. *Phytologia* 91(3): 440-466 (December, 2009).

**KEY WORDS:** *Salvia*, Lamiaceae, Mexico, sect. *Uliginosae*

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### 13. SECT. *ULIGINOSAE*

Perennial rhizomatous or stoloniferous herbs to 1 m high, rarely shrubs or subshrubs 1-3 m high. Leaves highly variable, linear to lanceolate to oblanceolate, ovate to deltate, or rarely cordate, markedly petiolate to sessile. Capitulescence a terminal, elongate, spike, the floral bracts soon deciduous. Calyces relatively small, the upper lip 5-7 veined. Corollas mostly blue, blue-black or rarely white, the tubes relatively short. Gubernaculum more or less deltoid, dentate. Styler shafts pilose apically, the upper branches linear, 2-3 times as long as the lower, deltoid, branches.

TYPE: *Salvia uliginosa* Benth., of South America

As well-noted by Epling (1939), a very large highly variable section, largely recognized by its relatively small, blue or white,

flowers having 5-7 veined upper calyces, gubernacula deltoid, and stylar branches pilose.

### KEY TO SPECIES

1. Plants widespread in Mexico, not in Chi, Coa.....(3)
1. Plants of Chi and Coa.....(2)
2. Plants mostly 30-50 cm high, arising from thick rhizomes.....  
.....**S. arizonica**
2. Plants mostly 10-30 cm high, arising from slender rhizomes.....  
.....**S. forreri**
3. Plants with leaves all basal or essentially so, their blades mostly  
3-6 cm wide; stems arising from a tuberous root.....**S. nana**
3. Plants not as described in the above.....(4)
4. Blades of mid-stem leaves lanceolate, ovate, to deltoid or subcordate,  
mostly 2-5 times as long as wide.....(7a)
4. Blades of mid-stem leaves linear, mostly 6-12 times as long as wide  
.....(5)
5. Plants eglandular along the rachis, mostly 20-30 cm high...**S. laevis**
5. Plants glandular-pubescent along the rachis, mostly 10-40 cm high..  
.....(6)
6. Blades not reticulate-veined beneath, having but a single prominent  
mid-rib; northeastern Mexico.....**S. unicostata**
6. Blades paripinnate or reticulate-veined beneath; Nay, Jal....**S. firma**
- 7a. Plants not as described below.....(8)
- 7a. Plants mostly 10-30 cm high, the stems with slender rhizomes  
and/or stolons rooting at the nodes; leaf blades mostly 10-30 mm  
long; Nue, Tam, San, Ver.....(7b)
- 7b. Plants mostly 10-20 cm high, the stems sprawling, arising from  
slender rhizomes; Sierra Magdalena, Ver.....**S. chazaroana**
- 7b. Plants mostly 20-30 cm high, the stems erect, arising from tap roots  
or woody corms; Nue, Tam, San.....(7c)



- 7c. Leaf blades ovate-lanceolate, 2-3 times as long as wide;  
corollas 10-15 mm long.....**S. novoleontis**
- 7c. Leaf blades subdeltoid, 1-2 times as long as wide;  
corollas 15-20 mm long.....**S. villosa**
- 8. Leaves cordate-apiculate; corollas blue, the tubes 11-15 mm long;  
Gue.....**S. hamulus**
- 8. Leaves and flowers not as described in the above.....(9)
- 9. Flowers white; leaves widest near the middle; petioles 1-6 mm long;  
Mic.....**S. assurgens**
- 9. Plants not as described in the above.....(10)
- 10. Stems prostrate; leaves 1.0-2.5 cm long; petioles 1-2 mm long;  
Hid.....**S. lozani**
- 10. Plants not as described in the above.....(11)
- 11. Blades of leaves mostly over 3 cm long.....(17)
- 11. Blades of leaves mostly 1-3 cm long.....(12)
- 12. Calyces ca 10 mm long; Gue .....**S. galloana**
- 12. Calyces 4-7 mm long; Dur, Jal, Oax.....(13)
- 13. Leaves decidedly deltoid, thickened, the margins glandular-  
pubescent; San.....**S. villosa**
- 13. Plants not as described in the above.....(14)
- 14. Calyx 6-7 mm long; stems pubescent with shorter, softer, hairs 0.2-  
1.0 mm long or less.....(16)
- 14. Calyx 4-5 mm long; stems pubescent with stiffly-spreading  
glandular hairs 1-2 mm long.....(15)
- 15. Blades of leaf more nearly ovate, the margins ciliate with hairs  
ca 2 mm long; Jal.....**S. veronicifolia**
- 15. Blades of leaf more nearly deltoid, the margins w/o elongate cilia;  
Dur.....**S. paulwalleri**

16. Petioles 1-4 mm long; Jal.....**S. manantlanensis**  
 16. Petioles 10 mm long, or longer; Oax.....**S. tricuspidata**
- 17(11). Blades of leaves more nearly ovate or lanceolate.....(22)  
 17.     Blades of leaves more nearly deltoid.....(18)
18. Calyces and stems glandular-pubescent; leaves thickened; San.....  
       .....**S. villosa**  
 18. Plants not as described in the above.....(19)
19. Calyces and/or floral bracts to some extent setulose with stiff  
     spreading hairs; Mic, Mex, Mor, Gue?, Oax.....**S. setulosa**  
 19. Plants not as described in the above.....(20)
20. Corolla tubes 3-5 mm long; calyces glandular-pubescent; Oax.....  
       .....**S. pusilla**  
 20. Corolla tubes 6-8 mm long; calyces not glandular-pubescent.....(21)
21. Corollas lavender, ca 1.5 cm long.....**S. oreopola**  
 21. Corollas blue, ca 2 cm long.....**S. glechomifolia**
22. Calyx and rachis densely pubescent with white, glandular or  
     eglandular, hairs 1.0-1.5 mm long; Mic.....**S. assurgens**  
 22. Plants not as described in the above.....(23)
23. Leaves sessile or nearly so; Gue.....**S. eplingiana**  
 23. Leaves decidedly petiolate.....(24)
24. Leaves markedly reticulate-venose and densely white-tomentose  
     beneath; Mic.....**S. indigocephala**  
 24. Leaves not as described in the above.....(25)
25. Blades of leaf deltoid, about as long as wide; petioles 1-3 mm long;  
     Sin.....**S. paulwalleri**  
 25. Plants not as described in the above.....(26)



- 26. Shrubs 1-3 m high; corollas blue-black; leaves lustrous, glabrous and markedly glandular-punctate beneath; Gue.....**S. hintonii**
- 26. Plants not as described in the above.....(27)
- 27. Blades of leaves lanceolate to oblanceolate, widest near the middle; rachis glandular-pubescent, rarely not; Sin, Dur, Nay, Jal.....**S. sinaloensis**
- 27. Blades ovate, widest near the base.....(28)
- 28. Plants in Nay, Jal.....(30)
- 28. Plants not in Nay, Jal.....(29)
- 29. Plants not in Oax.....**S. forreri**
- 29. Plants in s Oax.....**S. textitlana**
- 30. Rachis of spike glandular-pubescent; calyx 5-6 mm long; Jal.....**S. rostellata**
- 30. Rachis of spike eglandular; calyx 8-9 mm long; Nay, Jal.....**S. firma**

**SALVIA ARIZONICA** A. Gray, Syn. Fl. N. Amer. 2: 370. 1886.

**Map 1.**

*Salvia arizonica* var. *huachucana* M.E. Jones

s Chi, n Coa, and sw U.S.A., montane habitats in oak- conifer forests of the Chihuahuan Desert , 2000-2600 m; flowering: Aug-Oct.

Closely related to *S. forreri* and distinguished from that species largely by habit, as noted by Epling (1939). So far as known, the two taxa do not grow together or intergrade, unless one accepts the isolated populations of *S. arizonica* from southern Coa and Chi, referred to by Epling. I treat the latter as part of the *S. forreri* complex, largely on the basis of geography. Were the two taxa to be combined, the earliest name, by two years, is that of *S. arizonica*.

**SALVIA ASSURGENS** Kunth, Nov. Gen. Sp. Pl. 2: 293. 1817. **Map 2.**

Mic, oak or pine-oak forests, 2000-2200 m; flowering: Jun-Aug.



Perennial herbs with decumbent or sprawling stems; leaves highly variable as to size but the blades usually widest near the middle with very short petioles; flowers arranged in strict or interrupted spikes, the corollas white.

This is a relatively common species in central Mic, to judge from assembled collections (LL-TEX). Because of the variation in leaf size, it is keyed in two places in the above key. Epling (1939) notes that "Save for the more lax inflorescence there is apparently little to suggest segregation of *S. sinaloensis*;" he goes on to note that *S. prunifolia* is scarcely separable from *S. assurgens*, the former largely separated by its longer petioles. *Salvia assurgens* is readily distinguished from *S. sinaloensis* by its white flowers, but I treat *S. prunifolia* as synonymous with *S. sinaloensis*.

### **SALVIA CHAZAROANA** B.L. Turner, **sp. nov.** Fig 1, Map 3.

*Salviae forreri* Greene similis sed differt plantis minoribus, caulibus decumbentibus vel prostratis ad nodos radicantibus, foliis minoribus, petiolis brevioribus (3-6 mm vs. 8-25 mm), et calycibus glandulosi-pubescentibus.

**Prostrate perennial herbs** to 20 cm high, abundantly rooting at the nodes. **Leaves** glabrous beneath or nearly so, mostly 1.0-2.5 cm long, 0.7-1.1 mm wide; petioles 3-6 mm long; blades broadly ovate to subdeltoid, upper surfaces minutely spotted with an array of flattened, branched, white trichomes, the lower surfaces markedly glandular-punctate throughout, the margins crenate. **Spikes** terminal, ca 4 cm long, the flowers arranged ca 4 to a node, the axis pubescent with spreading glandular-trichomes ca 0.6 mm high. **Floral bracts** ovate, 5-6 mm long, 2.5-3.5 mm wide, soon deciduous. **Pedicels** 1-2 mm long. **Calyces** 5-7 mm long, the upper lip 7-nerved, trifid at the apex, the lower lobes apiculate, ca 2.5 mm long; tubes 3.5-4.0 mm long, hispid below, the upper margins glandular-pubescent. **Corollas** ca 10 mm long, papillose in lines within, but mostly smooth, "blue with a white stripe in the lower lip;" tubes ca 7 mm long; upper lip ca 4 mm long; lower lip ca 7 mm long. **Anthers** blue, nestled within the upper lip, the gubernaculum narrowly deltoid. **Styles** flattened apically, densely



pilose dorsally, the lower stigmatic branches ca 0.8 mm long, the upper branches 3 times as long or more. **Nutlets** (immature) glabrous.

TYPE: **MEXICO. VERACRUZ: Mpio. Tonayan**, Sierra de la Magdalena, "unpaved road from Tonayan to Monte Real, and then a trail to Cerro de la Magdalena," pine-oak cloud forests, 1600-2500 m, 20 Dec 1989, *M. Chazaro B. et al.* 6050 (holotype WISC!; isotypes TEX!).

ADDITIONAL COLLECTIONS: **MEXICO. VERACRUZ: Mpio. Coactzintla**, Cerro de la Magdalena, 19 43 43 N, 95 59 00 W, 2600-2650 m, 1 Nov 2008, *P. Carillo-Reyes et al* 5444 (IBUG). [not examined; info from collectors]. **Mpio. Tlacolulan**, "cerca de la Cima del Cerro de la Magdalena, subiendo por el Epazote," 2500 m, 22 Jul 1984, *M. Chazaro B.* 3121 (MEXU).

Because of its low prostrate habit and small foliage, this taxon is readily recognized.

According to Flores (1938), the Cerro de la Magdalena is formed from an isolated volcano at the junction of the Sierra Madre Oriental and the Trans-Mexican volcanic belt. The summit (ca 2700 m) is exposed to strong winds, with frequent rains and mists. The vegetation consists of montane grasslands (mainly *Muhlenbergii* spp.) and pine-oak forests.

Ramamoorthy (by annotation) independently found this taxon to be new, proposing the name *S. margueritiana*. The latter name was also proposed by Ramamoorthy for several other taxa of *Salvia*, one of which I had already taken up (in prep.) when a photograph of the MEXU sheet (cited above) was examined.

It is a pleasure to name this remarkable herb for my equally remarkable colleague, Miguel Chazaro B., indefatigable collector and spirited systematist of the old school: he walks wayward trails to gather his botanical booty (unlike the more modern workers who tend to gather their plants along paved highways).

**SALVIA EPLINGIANA** Alziar, Biocosme Mesogéen 5: 86. 1988.  
**Map 8.**

*Salvia tricuspis* Epling (1940), not *Salvia tricuspis* Franchet (1891)

Gue, Distr. Mina, pine-oak forests, 1700-2100 m; flowering: Nov-Mar.

Perennial herbs 1-2 m high, readily recognized by its relatively large, lanceolate, tapering, nearly sessile leaves and glandular calyces. Alziar also notes that it "May be distinguished from *S. rostellata* [of Jal] by the glandular inflorescence."

**SALVIA FIRMA** Fernald, Proc. Amer. Acad. Arts 35: 502. 1900.  
**Map 8.**

Nay and Jal, oak forests on volcanic slopes, ca 1200 m; flowering: Sep-Oct.

**Perennial herbs** 20-40 cm high, the lower stems glabrous to eglandular, the upper stems and rachis glandular-pubescent (rarely not); leaves linear-lanceolate to linear-ob lanceolate; spikes 20-30 cm long, much interrupted; corollas blue, ca 1.5 cm. long.

A poorly collected taxon but readily recognized by its rather reticulate, glabrous, mostly lanceolate to oblanceolate, nearly sessile, leaves.

**SALVIA FORRERI** Greene, Pittonia 1: 156. 1888. **Map 1.**

*Salvia parrasana* Brandege

s Chi, s Coa, s Nue, s Tam, Sin, Dur, Zac, San, Que? and Hid, pine-oak forests, 1800-3000 m; flowering: Jul-Aug.

A relatively common, widespread, very variable, taxon, closely related to *S. arizonica* and perhaps not sufficiently distinct to warrant specific status, as noted under the latter.



**SALVIA GALLOANA** B.L. Turner, **sp. nov.** **Fig 2, Map 4.**

*Salviae hintonii* Epling similis sed foliis minoribus subter reticulati-venosis (vs. non reticulato-venosis), corollis caeruleis (vs. caesio-nigribus), et calycibus 4-7 mm longis (vs. ca. 10 mm).

**Suffrutescent perennial herbs** to 1.5 m high. **Mid-stems** pubescent with arcuate, up-turned, hairs. **Leaves** mostly 2-3 cm long, 1.0-1.5 cm wide; petioles 2-5 mm long; blades ovate, markedly reticulate-venose with surfaces glandular-punctate, their margins serrulate. **Flowers** arranged in terminal interrupted spikes 6-12 cm long; peduncles 3-5 cm long; rachis glandular-pubescent, the floral bracts (if any) deciduous. **Calyses** (flowering) ca 10 mm long, glandular-pubescent, the upper lip with 5-7 ribs, the lower lip bifid, somewhat longer than the upper. **Corollas** blue, ca 2.5 cm long, the tube ca 2 cm long, the upper lip 5-6 mm long, somewhat shorter than the lower. **Stamens** 2, inserted at the throat; anthers purple, ca 2 mm long. **Styles** pilose above, the upper branches ca 3 times longer than lower. **Nutlets** ovoid, pale tan, ca 2.5 mm long, 2 mm across.

**TYPE: MEXICO. GUERRERO: Mpio. Chichihualco**, "32 km al NE de Puerto del Gallo, camino Atoyac-Filo de Caballo," pine forests, ca 2580 m, 23 Nov 1983, *E. Martinez S. & F. Barrie* 5678 (Holotype: TEX).

The species is named, in part, for Puerto del Gallo, from which a road takes one to the type locality.

**SALVIA GLECHOMIFOLIA** Kunth, Nov. Gen. Sp. Pl. 2: 290. 1817. **Map 3.**

*Salvia lentiginosa* Brandegee

*Salvia reticulata* Mart. & Gal.

San, Gua, Mic, Mex, Pue and Oax, pine-oak forests, 2000-3200 m; flowering: May-Oct.

Perennial, rhizomatous, herbs to 40 cm high.

This is a widespread highly variable species, especially in leaf shape.

**SALVIA HAMULUS** Epling, Repert. Spec. Nov. Regni Veg. Beih. 110: 72. 1938. **Map 2.**

Gue (Distr. Mina), pine and fir forests, 1500-2500 m; flowering: Sep-Nov.

Perennial rhizomatous herbs to 40 cm high, readily distinguished from related taxa by its cordate leaves.

**SALVIA HINTONII** Epling, Repert. Spec. Nov. Regni Veg. Beih. 110: 73. 1938. **Map 9,**

Gue, pine-oak forests, 1700-2500 m; flowering: Oct-Mar.

Shrub 1.5-3.0 m high; leaves 3-8 cm long, glabrous beneath or nearly so, and described as having "blue-black" corollas.

**SALVIA INDIGOCEPHALA** Ramamoorthy, Taxon 32: 466. 1983. **Map 1.**

*Salvia cyanicephala* Epling (1940), not *Salvia cyanocephala* Epling (1936, from Colombia)

Mic, vicinity of Coalcoman, oak woodlands, 2400 m; flowering: Dec.

Perennial herbs to 1 m high; because of the distinctive leaves, a readily identified taxon.

In his original description, Epling notes "Very similar to *S. setulosa* with which it may prove to be conspecific." He goes on, however, to call to the fore several seemingly valid characters that serve to distinguish between them.

**SALVIA LAEVIS** Benth., Lab. Gen. Sp. 251. 1833. **Map 5.**

*Salvia comosa* var. *hypoglauca* (Briq.) Fernald

*Salvia hypoglauca* Briq.

*Salvia pseudocomosa* Epling

Tam, San, Que, Mic, Mex, Tla, Ver and Pue, pine-oak forests, 2000-2500 m; flowering: Jun-Aug.



Closely related to *S. unicostata* but readily distinguished by the characters brought to the fore in the above key.

Epling (1939) distinguished his *S. pseudocomosa* from *S. laevis* largely by leaf pubescence: pubescent in the former, glabrous in the later. He commented further his novelty "Suggests strongly a hybrid between *S. prunelloides* or *S. glechomifolia* and *S. laevis*," which it well might be. Passes imperceptibly into *S. laevis* and *S. prunelloides*.

**SALVIA LOZANI** Fernald, Proc. Amer. Acad. Arts 43: 64. 1907. **Map 2.**

Hid, known only from pine forests in the vicinity of Trinidad, ca 2000 m; flowering: Jul-Aug.

Because of its small, nearly sessile, leaves and prostrate stems which root at the nodes, an easily identified species, not likely to be confused with another.

**SALVIA MANANTLANENSIS** Ramamoorthy, Bull. Mus. Nation. Hist. Nat., B, Adansonia, Ser. 4, 9: 173. 1987. **Map 7.**

Jal, pine-oak forests, Sierra de Manantlan, 2200-2400 m; flowering: Dec-Jan.

Sprawling perennial herbs 30-40 cm high, readily rooting at the lower nodes; blades of leaves ovate, mostly 2-4 cm long, the petioles 2-7 mm long; calyces 6-7 mm long, pubescent with glandular hairs; corolla blue or rarely white, ca 1.6 mm long, the tube ca 8 mm long.

**SALVIA NANA** Kunth, Nov. Gen. Sp. Pl. 2: 289. 1817. **Map 4.**

*Salvia prunelloides* Benth., not *S. prunelloides* Kunth

Dur, Zac, San, Gua, Oax and Guatemala, pine and pine-oak forests, 1800-3500 m; flowering: Jun Oct.

Because of its broad, mostly basal leaves, an easily identified species.



**SALVIA NOVOLEONTIS** B.L. Turner, *sp. nov.* Fig. 3, Map 6.

*Salvia villosae* Fernald similis sed differt plantis minoribus, laminis foliorum plerumque ovati-lanceolatis 2-3plo longioribus quam latioribus (vs. subdeltoideis, 1-2plo longioribus quam latioribus), et corollis minoribus (10-15 mm longis vs. 15-20 mm).

**Perennial herbs** 20-40 cm high, the stems arising from lignescent tap roots or woody corms 2-3 cm long. **Stems** moderately pubescent with erect, glandular trichomes 0.5-1.0 mm high. **Leaves** mostly 1.5-3.0 cm long; petioles 2-6 mm long; blades mostly ovate, 2-3 times as long as wide, pubescent above and below with mostly glandular hairs, especially along the margins. **Inflorescence** a terminal interrupted spike 10-30 cm long; peduncles 5-10 cm long; bracts small, ovate, 3-4 mm long, soon deciduous. **Flowers** mostly 2 to a node, the pedicels 1-4 mm long. **Calyces** (flowering) 5-6 mm long, glandular-pubescent, the two lips ca equal in length, the upper lip with 5-7 well-defined ribs. **Corollas** blue, 10-15 mm long; tubes 5-6 mm long, the lower lip ca 6 mm long, twice as long as the upper. **Stamens** attached at the throat, the anthers white, ca 2 mm long, not exerted. **Styles** (upper portion) densely pilose, the upper style branches purplish, 2-3 mm long, sigmoid or twisted, the lower branches arcuate, ca 1/3 as long as upper. **Nutlets** ovoid, smooth, tan to dark brown, ca 2 mm long, 1.5 mm wide.

**TYPE: MEXICO. NUEVO LEON: Mpio. Zaragoza**, 11 km al E de San Antonio Pena Nevada, "Bosque de Pinoneros con Juniperus, Pinus, Rhus y Arctostaphylos." 2000-2500 m, 23 50 N, 99 58 W, 24 May 1992, *L. Hernandez S.* 2681 [with M. Martinez y J. Jimenez] (Holotype: TEX).

**ADDITIONAL COLLECTIONS EXAMINED: MEXICO. NUEVO LEON: Mpio. Aramberri**, "La Escondida-Zamora. 1795 m, 23 Jul 1993, *Hinton et al.* 22994 (TEX); **Mpio. Doctor Arroyo**, ca 30 km ENE Doctor Arroyo, "W base of Cerro Pena Nevada, large area of gypsum outcrops, 6600 ft, " on exposed gypsum (only on gyp)" 3-5 Aug 1981, *Nesom* 4274 (TEX); road between Matahuela and Doctor Arroyo, 17 Jun 1992, *Villarreal s.n.* (TEX). **SAN LUIS POTOSI: Mpio Charcas**, 6 km al de Miguel Hidalgo, 7 Jul 1985, *Tenorio L.* 9203 (TEX).



*Salvia novoleontis* presumably occurs only in gyp soils, this documented by *Nesom 4274* (cited above). The closely related, *S. villosa*, is known to me only from two areas in San Luis Potosi, the type itself (a Schaffer collection from Minas de San Rafael, San Miguelito) and seven sheets (TEX) from the vicinity of Guadalcázar where it is said to occur in limestone soils (*Barrie 379* and *Simpson 7032*).

**SALVIA OREOPOLA** Fernald, Proc. Amer. Acad. Arts 35: 517. 1900. **Map 1.**

Mex, Mor, Gue and Oax, pine-oak forests, 2000-2600 m; flowering: Aug-Oct.

Perennial herbs to 1 m high; leaves with deltoid blades, the petioles mostly 1-3 cm long.

**SALVIA PAULWALLERI** B.L. Turner, sp. nov. **Fig. 4, Map 8.**

*Salviae veronicifoliae* A. Gray ex S. Wats. similis sed differt foliis fere deltoideis (vs. ovatis) marginibus minute pubescentibus (vs. ciliatis trichomatibus ca. 2 mm longis).

**Perennial (rhizomatous?) herbs** to 30 cm high. **Stems** seemingly recumbent, pubescent with both glandular and eglandular hairs ca 1 mm high. **Leaves** mostly 2-3 cm long, 1.5-3.0 cm wide; petioles 2-3 mm long; blades broadly ovate to subdeltoid, sparsely pilose above and below, lower surfaces densely glandular-punctate, the margins serrulate and minutely pubescent. **Spikes** terminal, interrupted, 25-35 cm long; peduncles 7-8 cm long, the rachis with glandular-trichomes 1-2 mm long. **Floral bracts** ovate, soon deciduous. **Flowers** mostly arranged 6 to a node, the nodular gaps 2-6 cm long. **Calyces** (flowering) ca 5 mm long, glandular-pubescent, the upper lip 5-nerved. **Corollas** blue, 10-12 mm long; tubes 6-8 mm long; upper lip ca 3 mm long, sparsely pubescent apically with minute hairs, the lower portion essentially glabrous. **Stylar shaft** flattened, densely pilose apically, the upper branches 2-3 times as long as the lower, deltoid, branches. **Mature nutlets** not observed.

**TYPE: MEXICO. DURANGO: Mpio. El Salto, El Salto, pine-oak forests, 8250 ft, 4 Aug 1970, Kathy Shannon 94 (Holotype: TEX).**



T.P. Ramamoorthy (by annotation) was the first to suggest novelty status for the present collection. I originally identified the plant as *S. prunifolia* Fernald (= *S. sinaloensis* in the present account), but additional study has led me to concur with the observation of my erstwhile colleague, Ramamoorthy, who has moved on to non-botanical pursuits.

The species is named for Dr. Paul Waller of Austin, Texas, loving mate of my son, Matt Turner, who accompanied me on a trip to Puerto Vallarta to collect the taxon. Unfortunately, time did not permit the venture concerned, mainly because our time was expended in collecting material of *Verbesina jimrobbinsii* B.L. Turner (Phytologia 90: 52-62. 2008), the latter eponym honoring the previous partner of my son Matt, the four of us enjoying a four-day trip to the area concerned.

**SALVIA PRUNELLOIDES** Kunth, Nov. Gen. Sp. Pl. 2: 289. 1817.  
**Map 6.**

*Salvia rhombifolia* Sesse & Moc.

*Salvia trichandra* Briq.

Mic, Mex, Mor and Pue, pine-oak forests, 1500-3400 m; flowering: Sep-Oct.

Perennial rhizomatous herbs to 30 cm high, having terminal interrupted eglandular spikes 20-30 cm long.

According to Epling (1938), This taxon "Passes almost imperceptively into *S. laevis* and *S. pseudocomosa* on the one hand and *S. glechomifolia* on the other."

**SALVIA PUSILLA** Fernald, Proc. Amer. Acad. Arts 35: 495. 1900.  
**Map 6.**

Oax and Cps, pine-oak forests, 1200-2500 m; flowering: Jul-Sep.

Perennial, rhizomatous, sprawling herbs 10-30 cm high; leaves ovate to subdeltoid, the petioles 2-15 mm long; readily recognized by its short corolla tubes and glandular-pubescent stems and calyces.



**SALVIA ROSTELLATA** Epling, Repert. Spec. Nov. Regni Veg, Beih. 110: 66. 1938. **Map 2.**

Jal, vicinity of San Sebastian, ca 1500 m; flowering: Jan.  
A poorly known taxon, perhaps not separable from *S. sinaloensis*.

**SALVIA SETULOSA** Fernald, Proc. Amer. Acad. Arts 36: 499. 1901.  
**Map 7.**

Mic, Mex, Mor, Gue? and Oax, pine-oak forests, 2000-3000 m; flowering: Jul-Oct.  
Perennial, rhizomatous, herbs to 60 cm high. A widespread, highly variable, species, best recognized by its elongate spikes, large floral bracts, and setulose pubescence,

**SALVIA SINALOENSIS** Fernald, Proc. Amer. Acad. Arts 35: 502. 1900. **Map 9.**

*Salvia prunifolia* Fernald

Sin, Dur, Nay and Jal, pine-oak forests, 1200-2000 m; flowering: Aug-Sep.

Sprawling or semi-prostrate perennial herbs to 60 cm high; leaves highly variable, ovate to oblanceolate, the petioles mostly 2-10 mm long; calyces glandular-pubescent, the corollas blue.

I follow the suggestions of Epling (1939), that *S. prunifolia* is possibly a synonym of the present taxon. See additional comments under *S. assurgens* (above). It is also likely that *S. rostellata* is part of the fabric of *S. sinaloensis*, as noted under the latter.

**SALVIA TEXTITLANA** B.L. Turner, **sp. nov.** **Fig. 5, Map 8.**

*Salviae tricuspidatae* Mart. & Gal. similis sed differt foliis longioribus majoribus laminis ovatis 3-7 cm longis (vs. laminis subdeltoideis 2-3 cm longis) subter valde pubescentibus et tubis corollarum 5-6 mm longis (vs. 7-8 mm).

**Perennial herbs** 50-100 cm high. **Mid-stems** pubescent with arcuate, down-turned white hairs. **Leaves** mostly (4)5-8 cm long, 2-3 cm wide;

petioles 1.5-3.0 cm long. **Capitulescence** a terminal interrupted spike 1-30 cm long; peduncles 2-3 cm long; rachis pubescent with both glandular and eglandular hairs. **Flowers** 4-10 to a node, the nodal gaps 1-3 cm long. **Floral bracts** broadly ovate, soon deciduous. **Calyces** (flowering) 3-4 mm long, glandular-pubescent, the upper lip 5-7 nervate. **Corollas** reportedly blue or "morado;" tubes 5-6 mm long, the lower lip ca as long as the upper, both lips markedly beset with amber globules. **Stamens** inserted at the throat; stamens purple, ca 1 m long. **Stylar shafts** flattened, densely pilose apically, the upper branch 2-3 times as long as the lower, deltoid, branch. **Nutlets** ovoid, ca 2 mm long, 1.5 mm across, the coats smooth, pale tan.

TYPE: MEXICO. OAXACA: Mpio. Santiago Textitlan, "Paraje abajo de El Portillo." 16 43 52 N, 97 24 57.6 W, pine-oak forests, ca 1199 m, 8 Jan 2007, *Idalia Trujillo Olazo 1334* (Holotype: TEX; isotype: MEXU).

ADDITIONAL SPECIMENS EXAMINED: MEXICO. OAXACA: Mpio. Santiago Textitlan, "La Cueva." 16 45 11.5 N, 97 12 44.8 W, ca 2148 m, 7 Sep 2006, *Marcos 474* (TEX); "Paraje Tierra Morada." 16 43 44.3 N, 97 25 2.2W, ca 1792 m, 8 Jan 2007, *Olazo 1286* (TEX); Tierra Blanca." ca 2299 m, 22 Jan 2007, *Salinas 1492* (TEX).

This novelty is clearly closely related to the more northern *Salvia tricuspidata*, to which it is compared in the above diagnosis. It differs in having larger, lanceolate, leaves which are densely pubescent beneath, mainly along the major veins (vs smaller, more nearly subdeltoid blades which are glabrous beneath or nearly so). In addition, the flowers are somewhat smaller.

The species is named, in part, for the Mpio. Santiago Textitlan, whence the type.

**SALVIA TRICUSPIDATA** Mart. & Gal., Bull. Acad Brux. 11: 78. 1814. **Map 8.**

Oax, pine-oak forests, 2500-3000 m; flowering: Aug-Nov. Suffruticose herbs 30-70 cm high, the leaves broadly ovate to subdeltoid; calyces purple, glandular-pubescent, 5-6 mm long; corollas blue, 12-16 mm long.



**SALVIA UNICOSTATA** Fernald, Proc. Amer. Acad. Arts 35: 501. 1900. **Map 5.**

Nue, Tam and San, pine and pine-oak forests, 2500-3600 m; flowering: May-Jul.

Small herbs with slender rhizomes, mostly 10-30 cm high.

According to Epling (1939), "save in the glandular pubescence of the inflorescence," this species scarcely differs from some narrow leafed forms of *S. laevis*.

**SALVIA VERONICIFOLIA** A. Gray ex S. Wats., Proc. Amer. Acad. Arts 22: 144. 1887. **Map 4.**

Jal, known only from the vicinity of Guadalajara, oak forests, mainly in granitic or sandy soils, 1000-1200 m; flowering: Jul-Aug.

Perennial herbs 10-30 cm high; readily recognized by its small ovate leaves with short petioles, and especially by its pubescence: stiffly spreading, glandular, trichomes ca 2 mm high.

**SALVIA VILLOSA** Fernald, Proc. Amer. Acad. Arts 35: 518. 1900. **Map 9.**

San, known only from the vicinity of Guadalcázar, dry oak forests, ca 1800 m; flowering: Jul-Sep.

Rhizomatous herbs to 30 cm high, the stems markedly villous with glandular hairs.

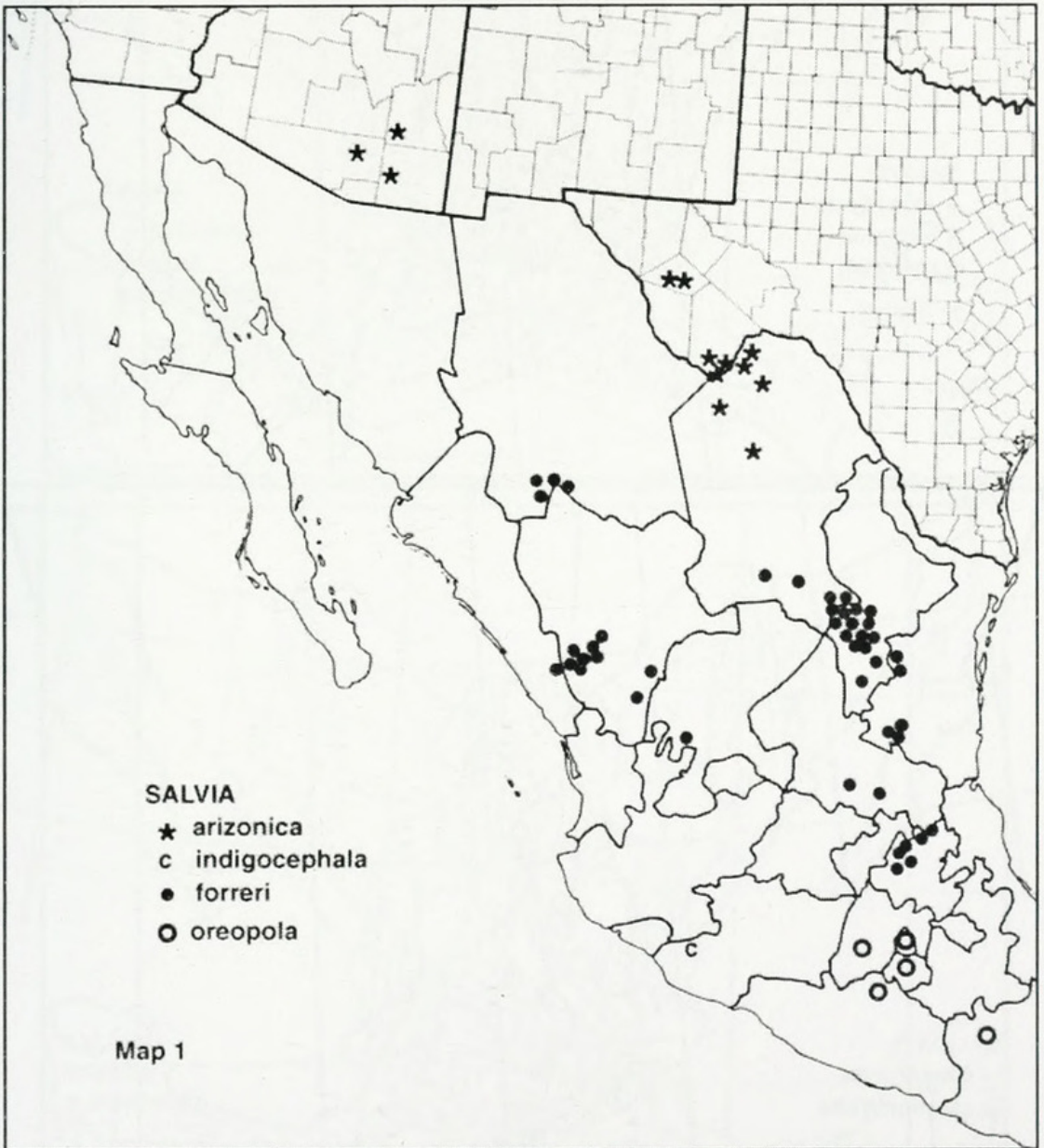
Because of its distinctive pubescence and deep blue flowers, a very distinct species, not likely to be confused with another.

### ACKNOWLEDGEMENTS

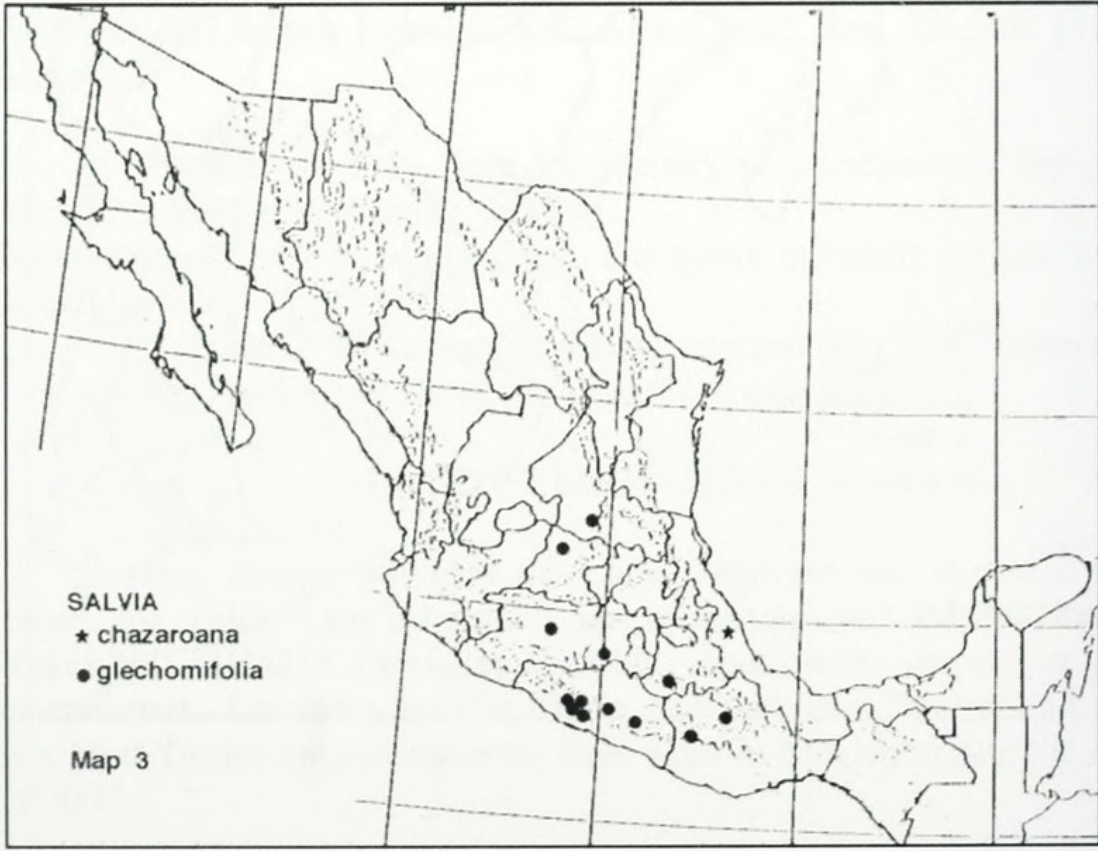
Guy Nesom provided the Latin diagnoses and reviewed the paper, for which I am beholden. Jesus Gonzales and Pablo Carrillo Reyes of GUADA provided helpful input with respect to *S. chazaroana*. I am also grateful to Jim Robbins, Paul Waller, and my son Matt Turner for assistance on field work in Mexico during the fall of 2007.

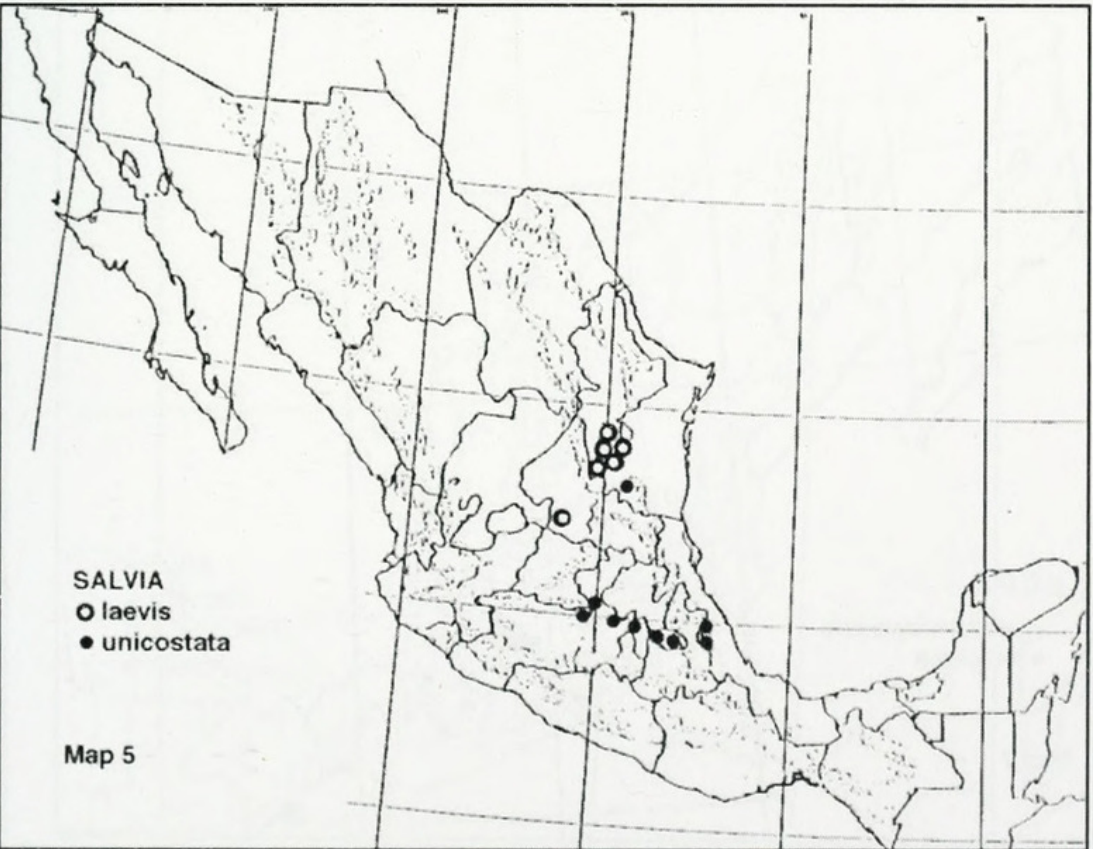
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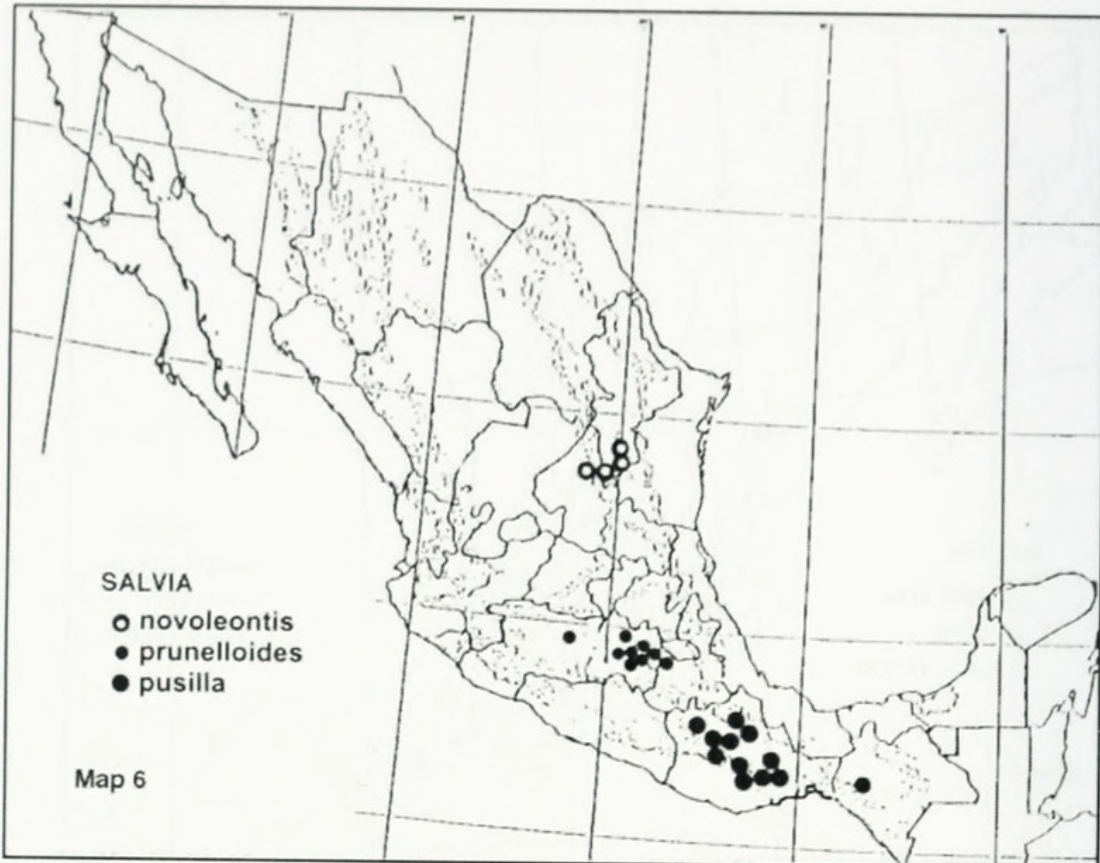


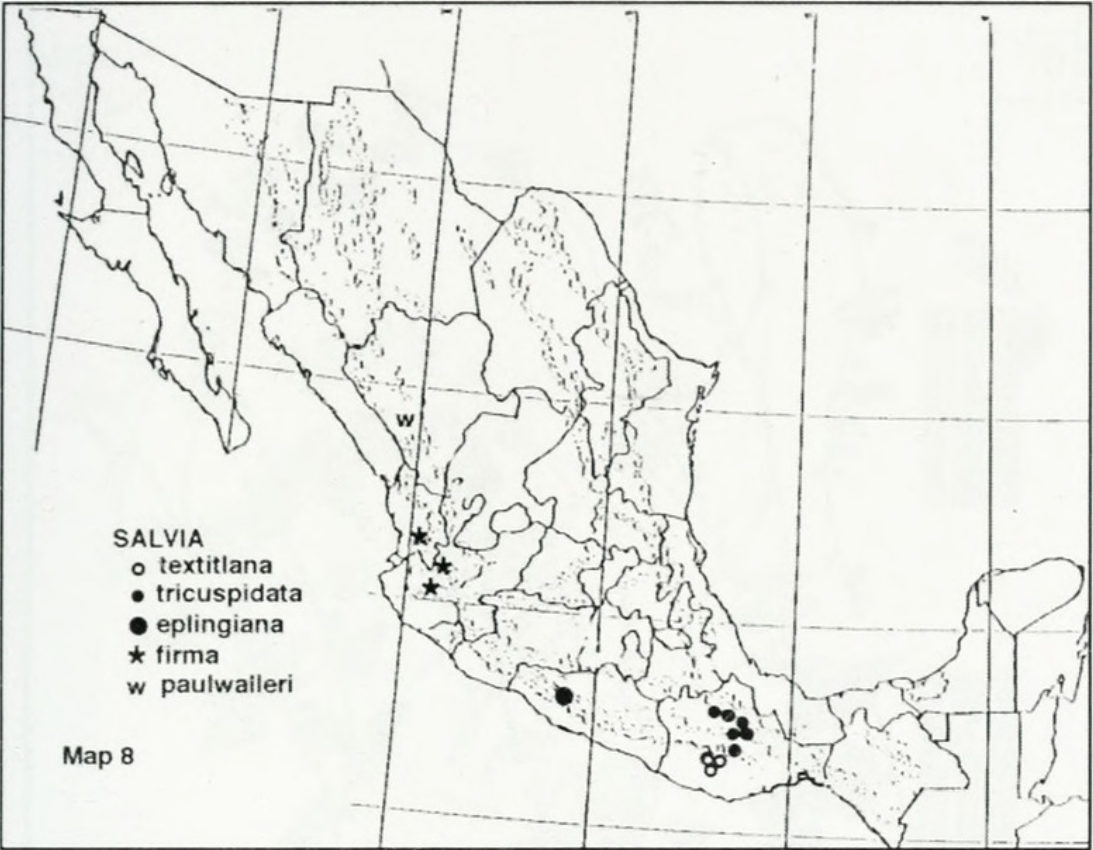














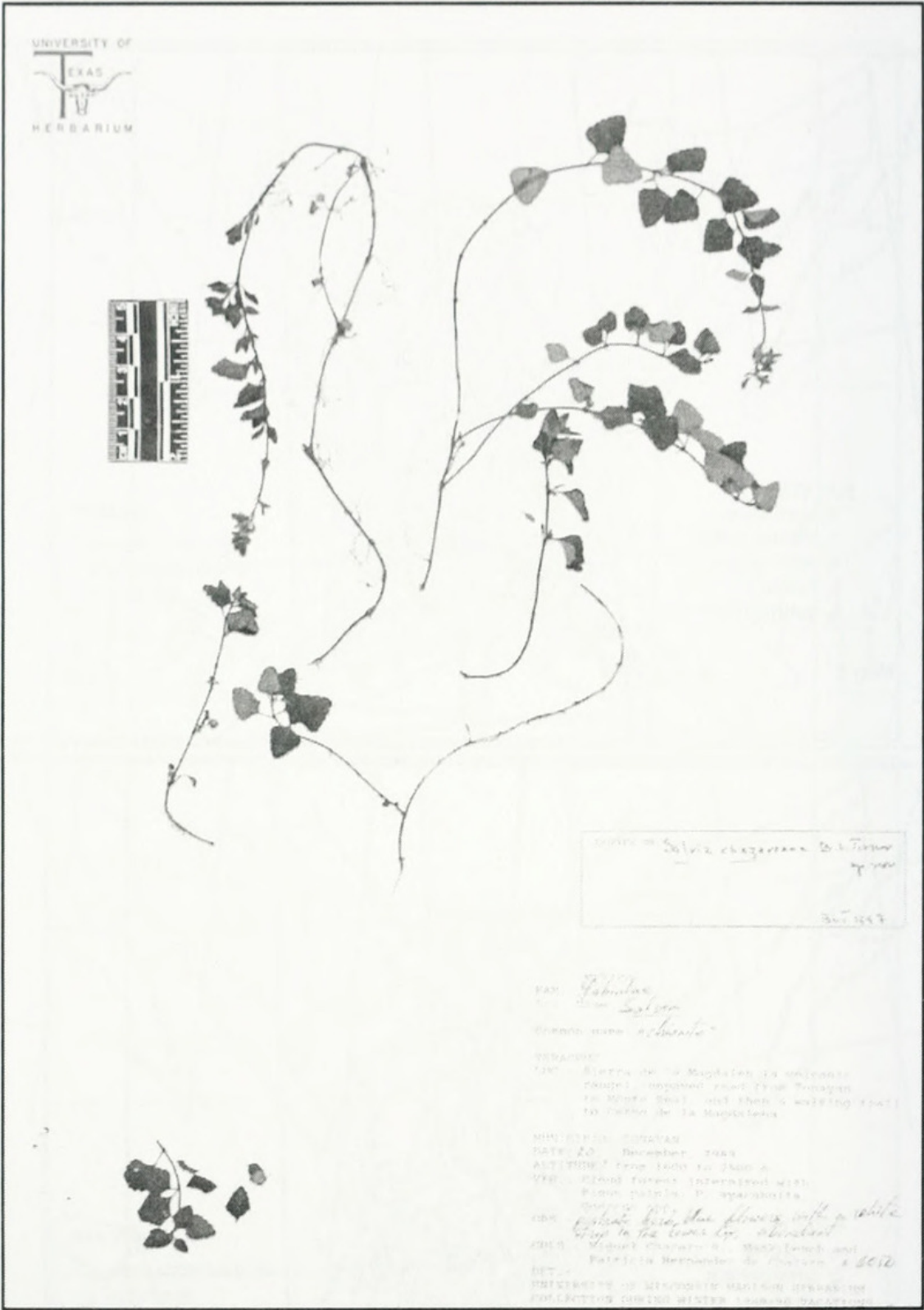


Fig. 1. *Salvia chazaroana* (Isotype: TEX).



Fig. 2. *Salvia galloana* (Holotype: TEX).



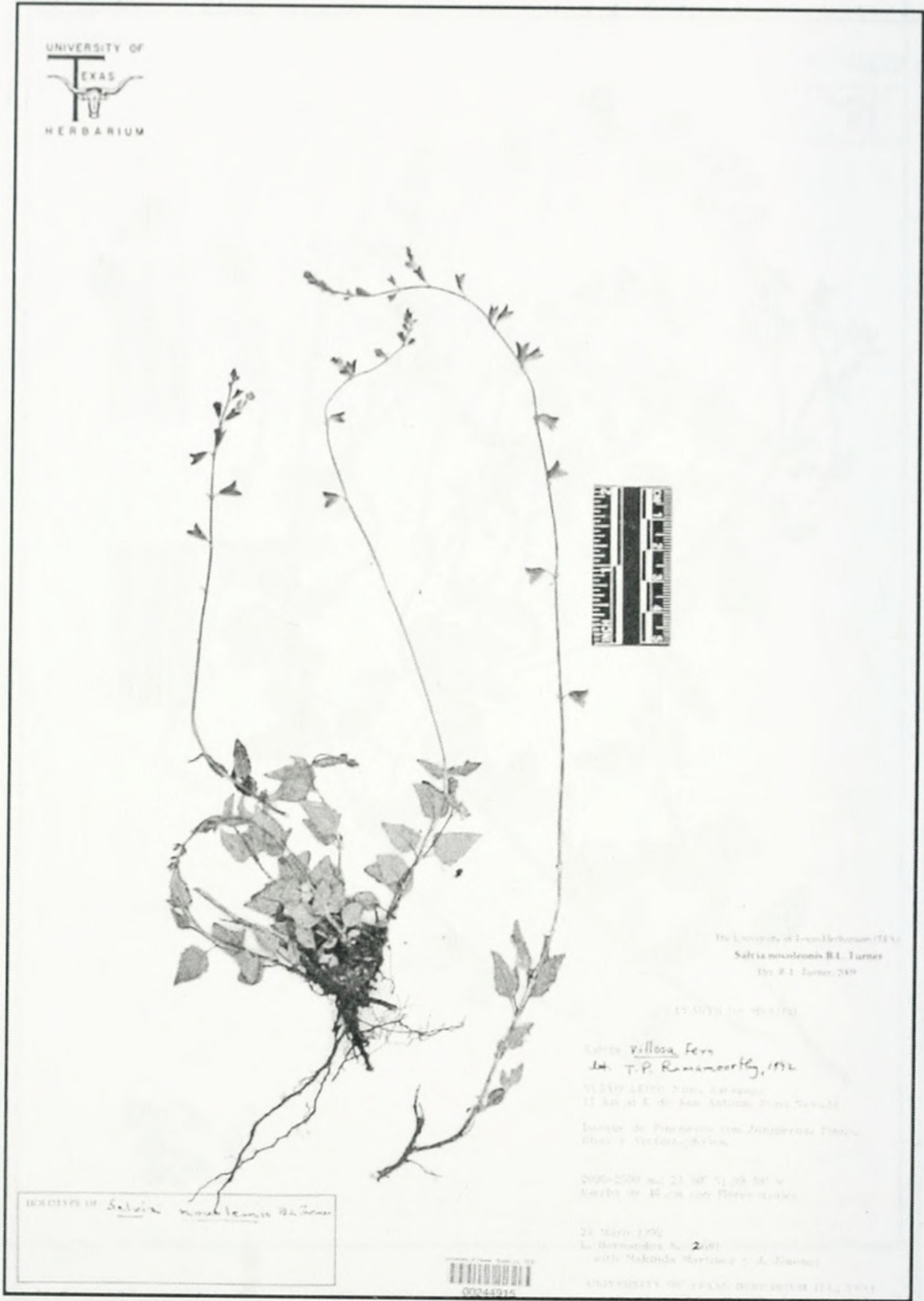


Fig. 3. *Salvia novoleontis* (Holotype: TEX).

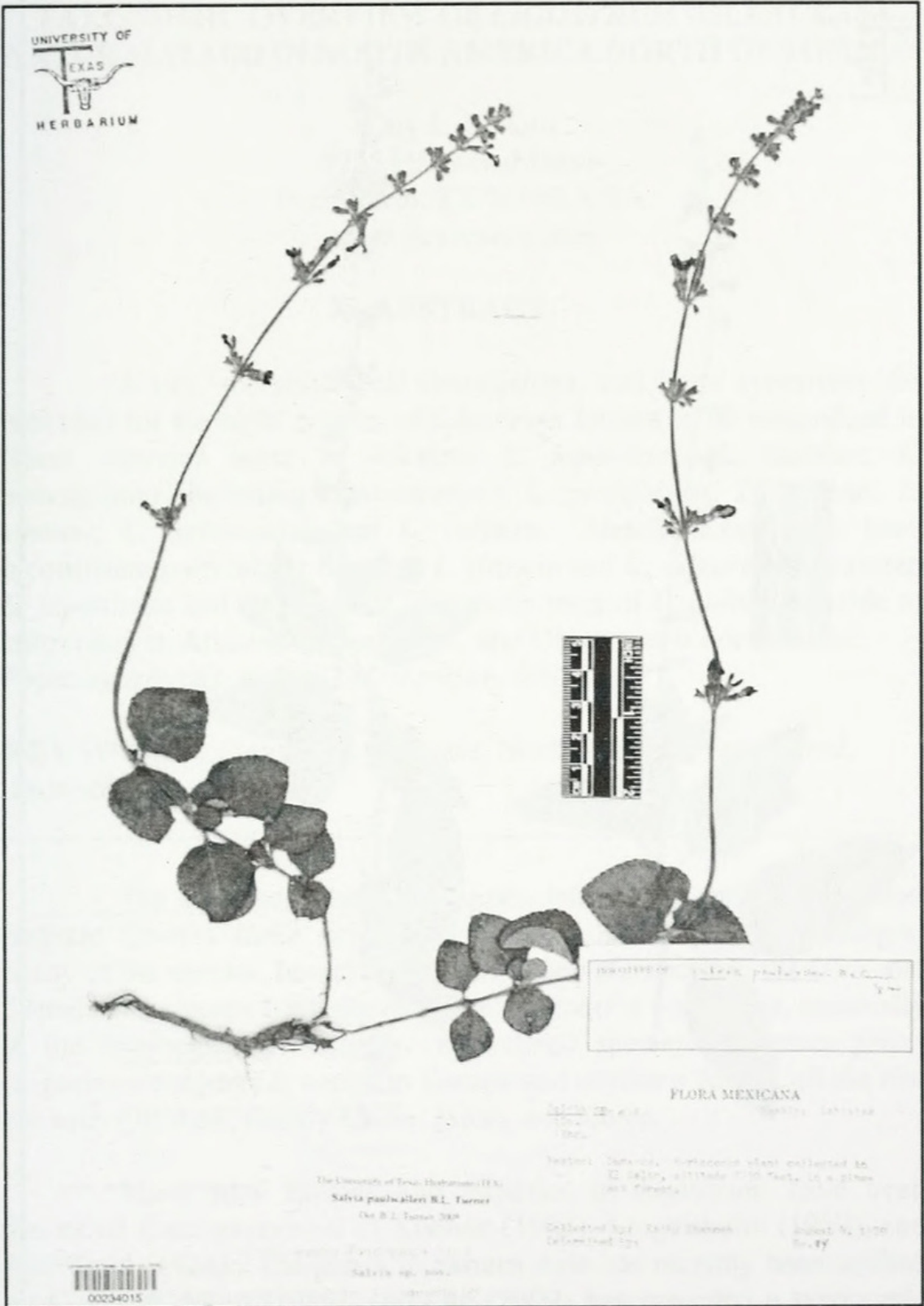


Fig. 4. *Salvia paulwalleri* (Holotype: TEX).







Turner, B. L. 2009. "Recension of the Mexican species of Section Uliginosae of *Salvia* (Lamiaceae)." *Phytologia* 91(3), 440–466.

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