

**NEW SPECIES OF *BACCHARIS* (ASTERACEAE)
FROM WESTERN MEXICO**

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ABSTRACT

Four new species of *Baccharis* are described from western Mexico and one is raised in rank from variety. ***Baccharis charucoensis*** Nesom, **sp. nov.**, from the Rio Mayo region along Chihuahua-Sonora border, is similar in habit and related to *B. macrocephala* of eastern Mexico but differs in its linear leaves with stiffly ciliate margins. ***Baccharis horizontalis*** Nesom, **sp. nov.**, from western Durango and adjacent Sinaloa, is similar and closely related to the widespread *B. serrifolia* but differs in its sessile leaves and distant geographical location. ***Baccharis supplex*** Nesom, **sp. nov.**, from southeastern Durango (mpios. Mezquital and Súchil) differs from the sympatric *B. thesioides* in its rhizomatous habit with one or few stems from the base, broader leaves, and few-flowered capitulescence. ***Baccharis praetermissia*** Nesom, **sp. nov.**, from the Cape Region of Baja California Sur, is distinct in its erect habit, nearly glabrous stems, glabrous, elliptic leaves, dense capitulescence, and non-acrescent pappus, and disjunct geography within sect. *Aristidentes*. *Baccharis multiflora* var. *herbacea* McVaugh from western Michoacan is recognized here at specific rank: ***Baccharis herbacea*** (McVaugh) Nesom, **comb. et stat. nov.** Each of these five species apparently is rare.

In a review of *Baccharis* in CAS-DS, TEX-LL, and UC-JEPS, collections indicate that four distinct species are without names. They are formally described here, and another is recognized by raising its rank from variety to species.

1. *BACCHARIS CHARUCOENSIS* Nesom, **sp. nov.** **TYPE: MEXICO. Chihuahua.** [Mpio. Chínipas]. Sierra Charuco, Rancho Byerly, pine-oak forest, rocky igneous slopes, 5000-5800 ft, low woody perennial 4-8 dm tall, 17-25 Apr 1948, *H.S. Gentry 8025* (holotype: TEX!, Fig. 2; isotypes: ARIZ image!, MEXU image!, UC!). Additional sheets at ARIZ and UC are labeled "Gentry 8025a."

Allied to species of *Baccharis* sect. *Glandulicarpae* Nesom in its large heads and achenes glandular over the whole surface. Most similar to *B. macrocephala* Sch. Bip. ex Greenm. (Fig. 0) in its large sessile to subsessile heads and its axillary clusters of small leaves, but the leaves of *B. charucoensis* are much smaller, quickly deciduous, neither punctate nor glutinous, and ciliate-margined and the phyllaries are without a wide, dark midregion. *Baccharis macrocephala* has heads axillary and subsessile or on short lateral branches and axillary clusters of small leaves; its leaves are 10–40 mm long, 3–5 mm wide, persistent, densely punctate and usually glutinous, with eciliate, pebbly-roughened tuberculate margins, and the phyllaries lack a dark midregion.

Shrubs 4–8 dm high, erect, dioecious (both collections include only pistillate branches). **Stems** woody, glabrous, few-branched, nodes with clusters of small leaves. **Leaves** (cauline) apparently quickly deciduous, linear, mostly 12–40 mm long, 1–4 mm wide, sessile, 1-nerved, fleshy, not punctate or glutinous, margins minutely serrulate with aristate teeth or merely aristate, 10–15 teeth or aristae per side; leaves of axillary clusters 3–15 mm long. **Heads** axillary, sessile or subsessile and solitary per node or 1–3 per node on pedicels up to 1.2 mm long, in a loose, spike-like capitulescence; pistillate involucre 8–10 mm wide; staminate heads not seen; phyllaries narrowly elliptic-lanceolate or elliptic-oblong with hyaline margins and a dark green midregion, the inner 7–9 mm long. **Achenes** ca. 3 mm long, 5(–6)-nerved, with short viscid-glandular hairs over the

whole surface; mature pappus accrescent, elongating to 10–12 mm, bristles in ca. 3–4 series. Figures 1, 2, 12.

Additional collection examined. MEXICO. Chihuahua. [Mpio. Chínipas]. Sierra Charuco, Arroyo Hondo, igneous rocky canyon slope in pine-oak forest, 4500-5500 ft, 16-30 Apr 1948, *Gentry 8097* (ARIZ, MEXU image! Fig. 1).

Sierra Charuco "is the name given by Gentry and still used by natives to mountains across the Sonora-Chihuahua border between Rancho Byerly, Chihuahua (27° 34.5' N, 108° 42' W, 1550 m), and El Charuco Ranch (27° 36' N, 108° 44.5' W, 800 m)" (see Martin et al. 1998, pp. 100 and 107).

Baccharis charucoensis is compared in the diagnosis with *B. macrocephala* because of their similarity in habit, not to suggest that they are most closely related to each other. The widespread *B. pteronioides* DC. (sect. *Glandulicarpae*) also has a similar habit, with short-pedicellate to subsessile, axillary heads from nodal clusters of small leaves. The only other species of sect. *Glandulicarpae* along the Pacific coast region are *B. occidentalis* Blake (few, small, long-pedunculate heads in a loosely corymboid cluster) and *B. squarrosa* Kunth (large, solitary heads at branch apices). *Baccharis occidentalis*, like *B. charucoensis*, has few-branched stems and few, widely separated, narrow leaves with aristate-toothed margins, and it seems a reasonable hypothesis that the two are closely related, especially in view of their geography. I had previously (in 1998) annotated some of the Sierra Charuca sheets as *Baccharis wrightii* A. Gray, also of sect. *Glandulicarpae*, but *B. wrightii* is a Chihuahuan Desert species with solitary heads.



Figure 1. *Baccharis charucoensis*. Details from *Gentry 8097* (MEXU).

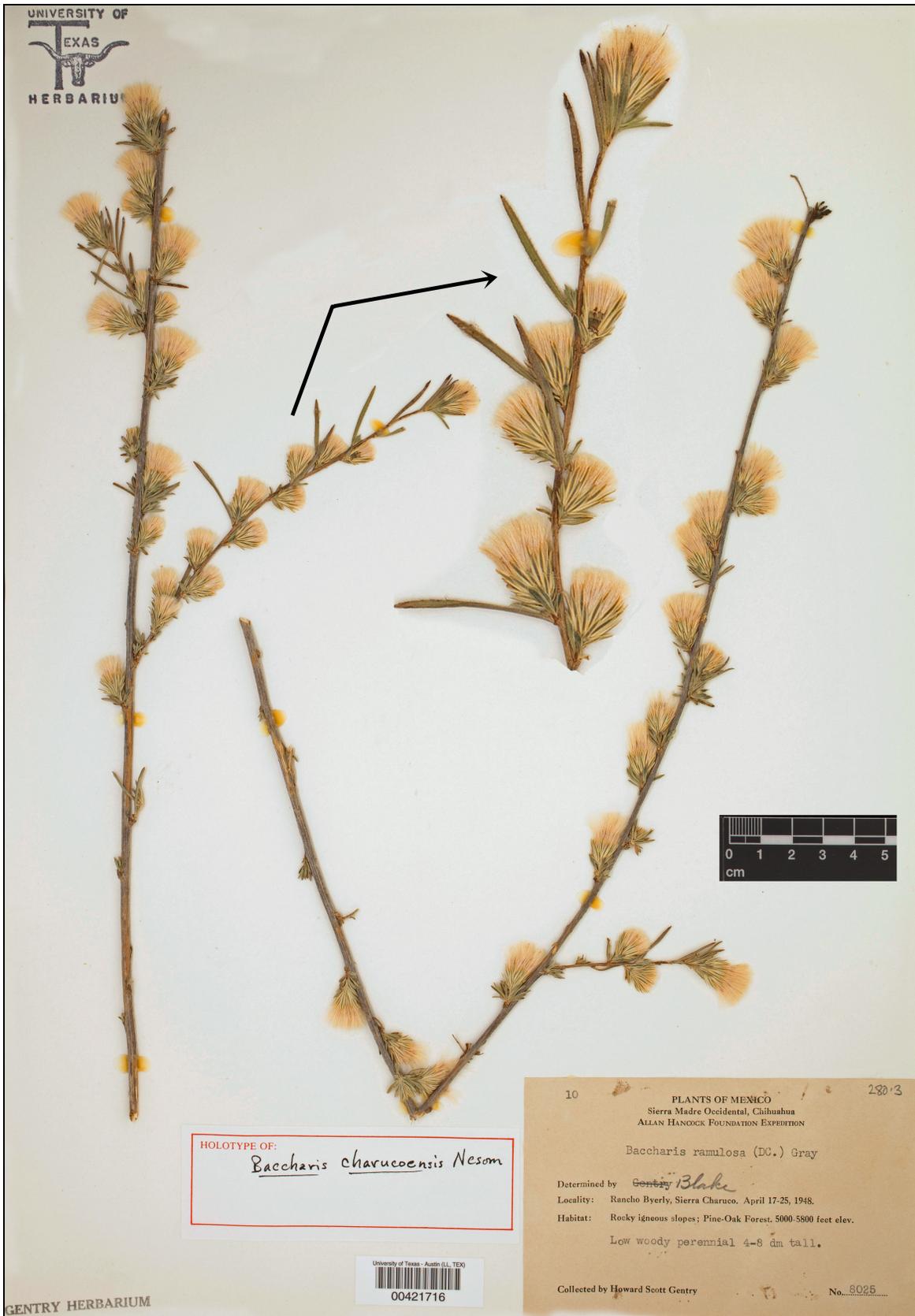


Figure 2. *Baccharis charucoensis*. Holotype, Gentry 8025 (TEX). Arrow points to enlargement.

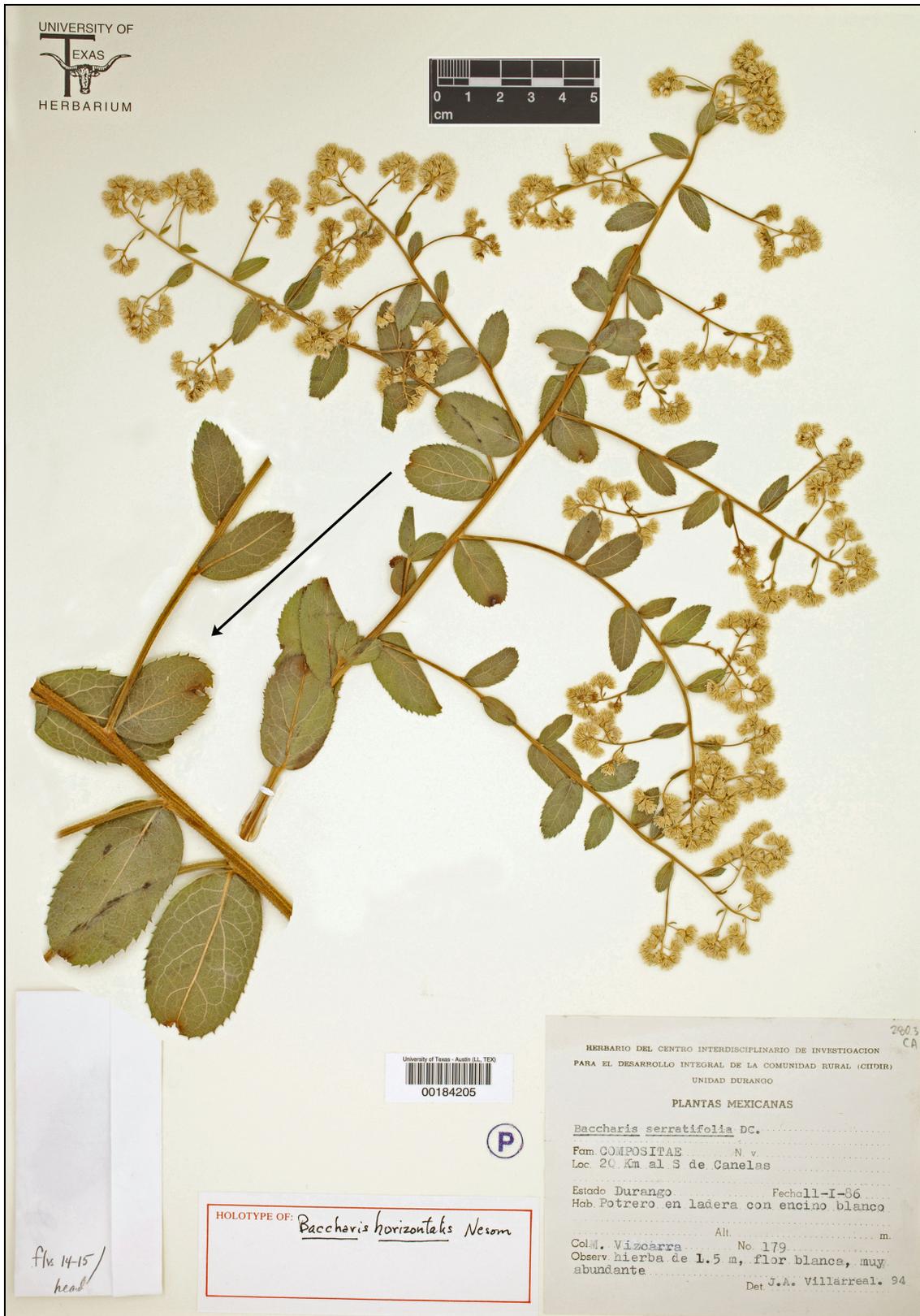


Figure 3. *Baccharis horizontalis*. Holotype, Vizcarra 179 (TEX).



Figure 4. *Baccharis horizontalis*. Details from holotype, Vizcarra 179 (TEX).



Figure 5. *Baccharis horizontalis*. Vega A. 9770 (MEXU) from Mpio. Concordia, Sinaloa.



Figure 6. *Baccharis supplex*. Holotype (MEXU).



Figure 7. *Baccharis supplex*. Breedlove 59107 (MEXU), from Mpio. Mezquital.



Figure 8. *Baccharis* aff. *bigelovii* from Mpio. Urique, Chihuahua. Unusual in its long leaves and low, rhizomatous habit. The venation contrasts with typical *B. supplex* (compare Fig. 7).

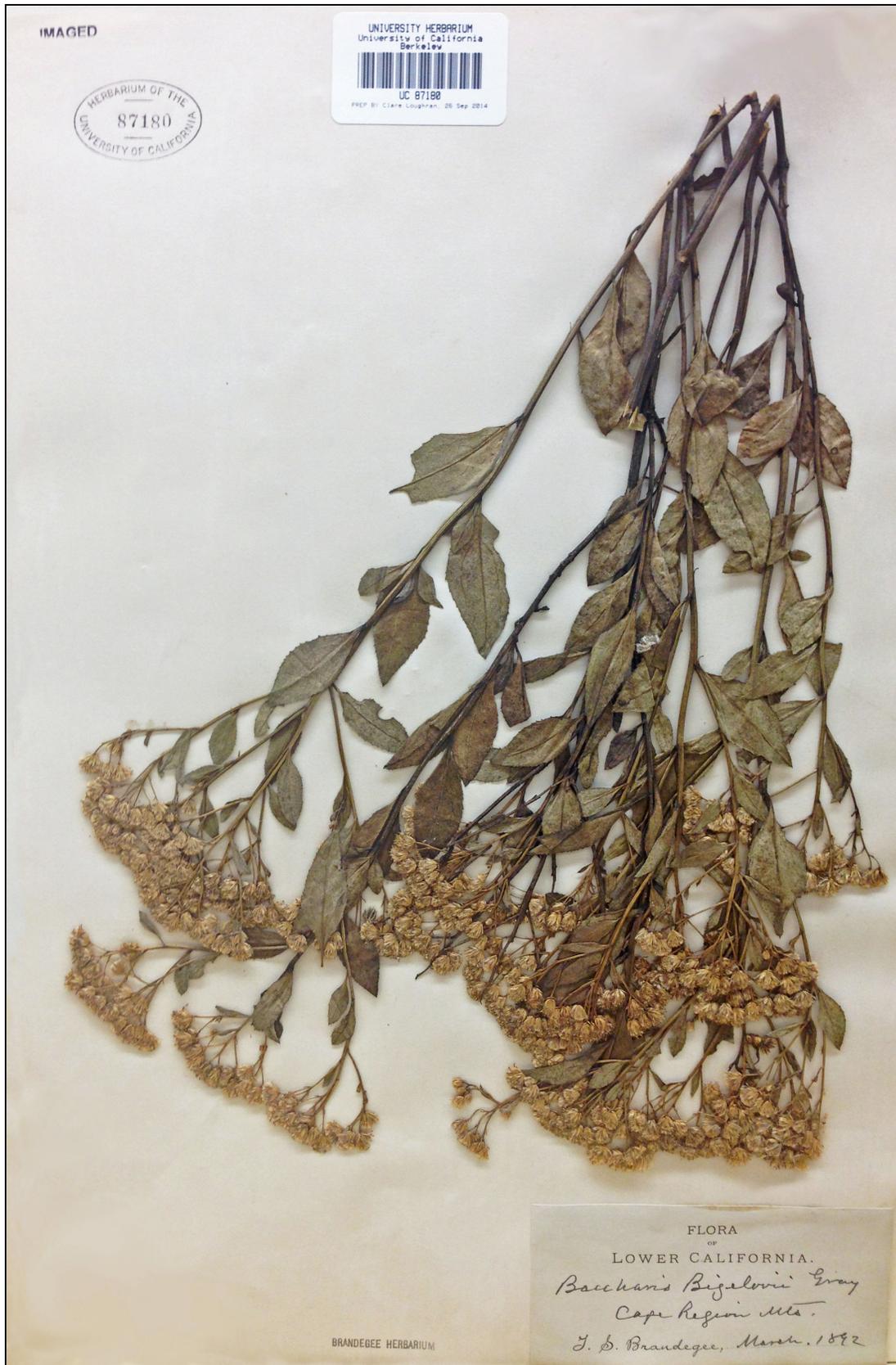


Figure 9. *Baccharis praetermissa*, holotype (UC). Staminate branch.

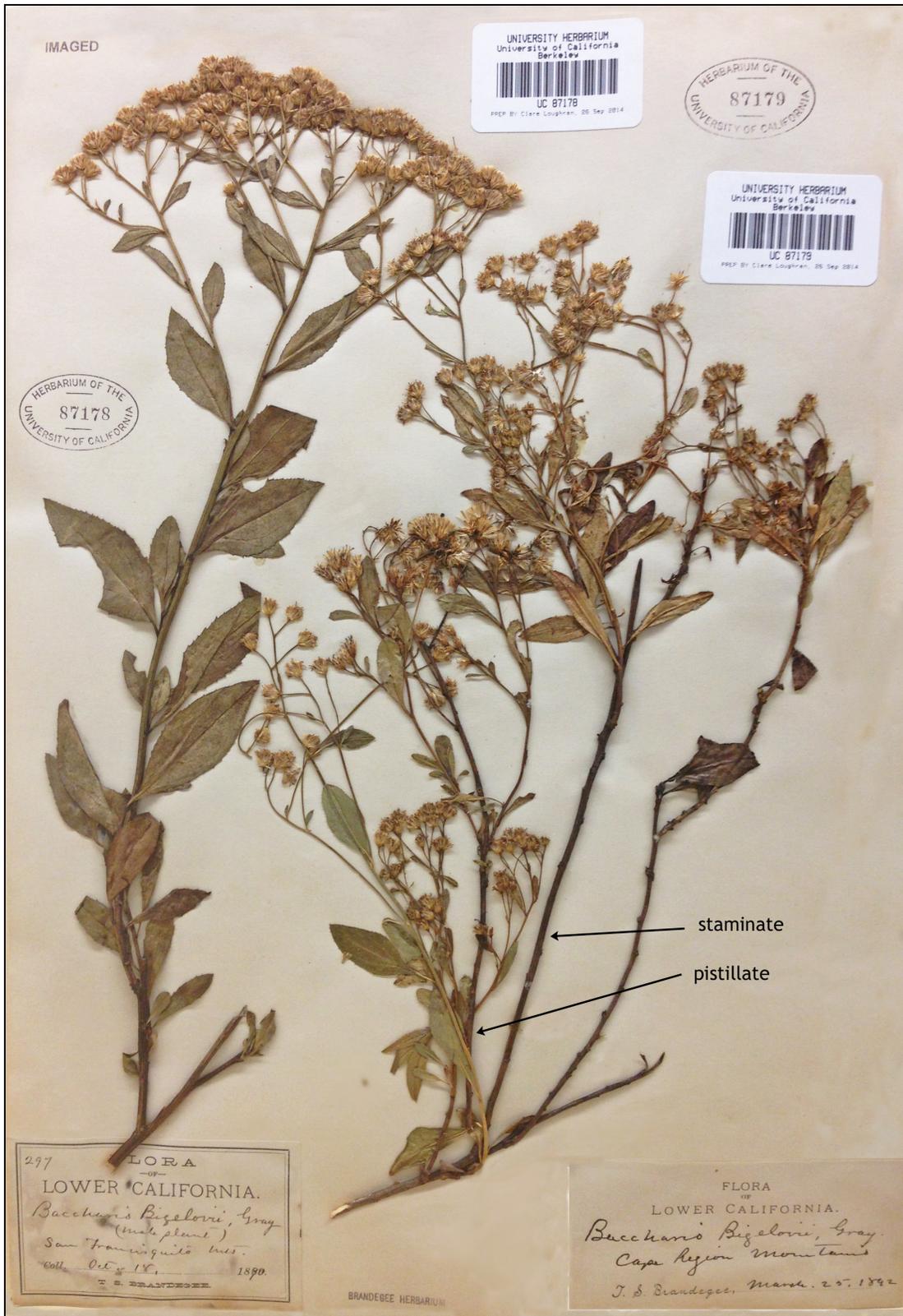


Figure 10. *Baccharis praetermissa*, isotype (87179—2 branches, staminate and pistillate) and paratype (87178—staminate branch). The similarity between the holotype and *Brandegee 297* suggests that labels on the sheet above may have been switched in error.



Figure 11. *Baccharis praetermissa*. Details, leaves and capitulescence.

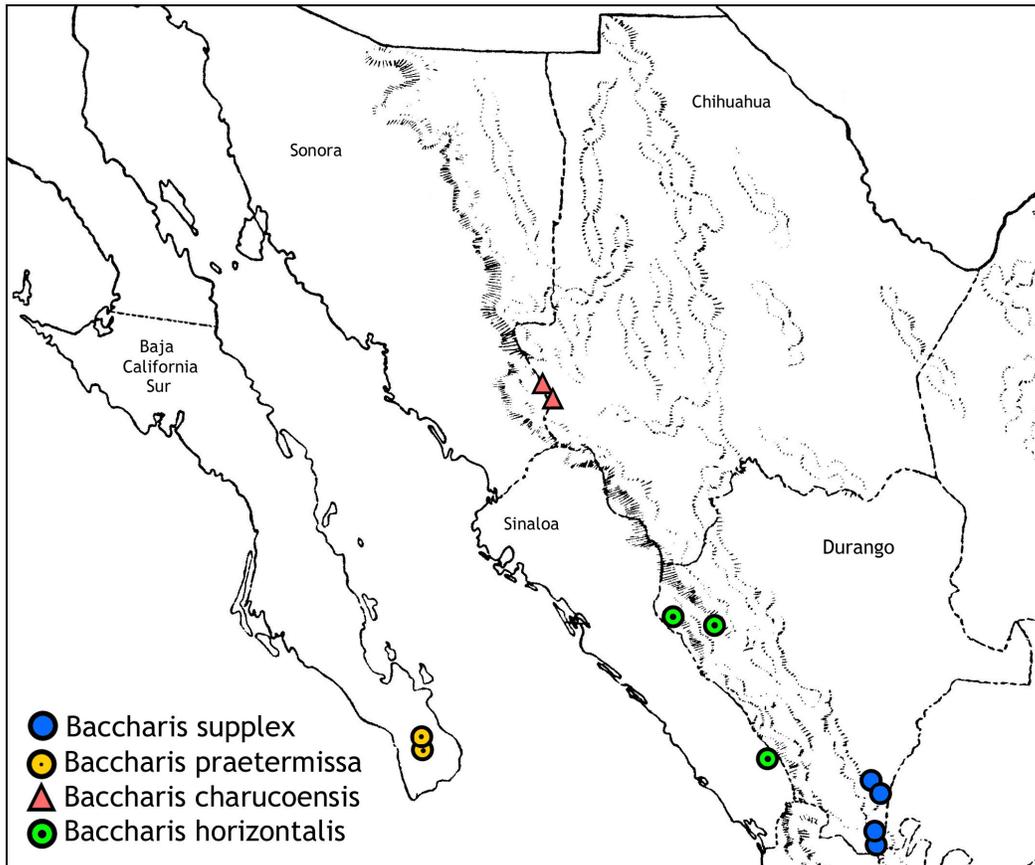


Figure 12. Distribution of *Baccharis supplex*, *B. praetermissa*, *B. charucoensis*, and *B. horizontalis*.

2. BACCHARIS HORIZONTALIS Nesom, **sp. nov.** **TYPE: MEXICO. Durango.** [Mpio. Canelas]. 20 km al S de Canelas, potrero en ladera con encino blanco, hierba de 1.5 m, flor blanca, muy abundante, 11 Jan 1986, *M. Vizcarra 179* (holotype: TEX!, Fig. 2; isotypes: CIIDIR, UNAM image!).

Similar to *Baccharis serrifolia* DC. (sect. *Aristidenthes* Nesom) in habit (spreading branches, climbing-clambering), leaf shape, size, and vestiture, and its small, few-flowered heads, but distinct in its sessile leaves with rounded to truncate base (*B. serrifolia* has petioles consistently 2–7 mm long, base obtuse to attenuate), leaf surfaces without evident punctations (vs. punctate), and lanceolate phyllaries with acute apex and hyaline, little dissected margins (vs. oblong phyllaries with rounded to blunt apex and hyaline margins highly dissected distally into fimbriae).

Shrubs 1.5 m high, subscandent (climbing or clambering), dioecious (the type specimen has only a staminate branch). **Stems** greenish with white ridges, branching at nearly right angles, densely pubescent with crinkly, orange-viscid, multicellular hairs not obscuring the stem surface. **Leaves** oblong to oblong-lanceolate or broadly lanceolate, mostly 15–80 mm long, 6–35 mm wide, pinnate-veined, veins whitish and raised on both surfaces, essentially sessile or petiole of 0.5 mm, base rounded to truncate, apex obtuse, adaxial surface slightly glossy, dull beneath, both surfaces sparsely and minutely pubescent with tiny, orange-viscid hairs, not evidently punctate, margins shallowly serrulate with apiculate-aristate teeth, 7–27 teeth per margin. **Heads** in loose, rounded to pyramidal panicles at the ends of lateral branches and terminally, ultimate pedicels 1–3 mm long; staminate involucre 3–4 mm wide, 3–3.5 mm long; 14–15 flower per head. **Mature achenes** not seen; pappus bristles (staminate) in 2–3 series, slightly but distinctly dilated at the apex. Figures 3, 4, 5, 12.

Additional collection examined. MEXICO. Durango. [Mpio. Tamazula]: Chacala, 5 Mar 1999, *Goldman 352* (DS). **Sinaloa. Mpio. de Concordia:** La Petaca a 5 km al S rumbo a el Cuatantal, bosque de *Pinus* con *Quercus*, 1600 m, 16 Feb 1999, *Vega A. 9770* (MEXU image!, Fig. 5).

The strong similarity between *Baccharis horizontalis* and *B. serrifolia* supports a reasonable hypothesis that they are sister species, either as vicariants or more likely with *B. horizontalis* established through dispersal from the wide range of *B. serrifolia* in southeastern Mexico and subsequently differentiated in geographic isolation. The three collections show the same distinct morphology (Figs. 3, 5, and 6, *Goldman 352* not shown).

3. BACCHARIS SUPPLEX Nesom, **sp. nov.** **TYPE: MEXICO. Durango.** Mpio. Súchil: Reserva de La Michilía, potrero San Juan de Michis, bosque de encino-pino, terreno plano, 2 Oct 1985, *J. Alvarado 141* (MEXU, Fig. 6; isotype: TEX!).

Similar to *Baccharis bigelovii* A. Gray (sect. *Aristidenthes*) in its relatively low stature, few-flowered capitulescence, leaf shape and size. Different in its rhizomatous habit with one or few stems from the base (vs. woody-rooted and a multi-stemmed shrub), more densely serrate leaf margins (15–29 teeth per side evenly distributed vs. 6–11 teeth on the distal 1/2–2/3), and leaf teeth with thread-like aristate extensions (vs. teeth acute to sharply acute). The southern extremity of the range of *B. bigelovii* is in Chihuahua.

Similar to *Baccharis thesioides* Kunth (sect. *Aristidenthes*) in its finely toothed leaf margins. Different in its rhizomatous habit with one or few stems from the base (vs. woody-rooted and a multi-stemmed shrub), herbaceous stems (vs. woody), broader leaves (3–15 mm wide vs. 3–7 mm), and few-flowered capitulescence (vs. relatively densely flowered, corymboid capitulescence).

Herbaceous perennials, rhizomatous, dioecious. **Stems** erect to erect-ascending, 30–50 cm tall, simple or few-branched until the capitulescence, green, glabrous, multi-ridged, inconspicuously glandular with minute, orange-glandular or glutinous hairs. **Leaves** elliptic to elliptic-ovate or elliptic-obovate, mostly 10–50 mm long, 3–15 mm wide, largest proximally or at midstem, venation brochidodromous, apex acute to obtuse, base attenuate, often narrowed and subpetiolate, margins

shallowly serrate with sharp teeth (5–17 per cm, 15–29 per side), each tooth with a thread-like aristate extension, both surfaces punctate, each punctation with an extruded papilla, surfaces sometimes becoming glutinous. **Heads** few and essentially solitary in a loose, paniculate cluster, ultimate pedicels 1–9 mm long; pistillate heads: 22–27-flowered, involucre 3 mm long; staminate heads: ca. 8-flowered, involucre 2 mm long. **Achenes** oblong-terete, 1.5–2 mm long, 5–6-nerved, deciduous-glandular near the base, otherwise glabrous; pappus bristles in 1(–2) series, 3–3.5 mm long at maturity, not accrescent, often becoming purplish. Figures 6, 7, 12.

Additional collections examined. Durango. Mpio. SÚchil: Ejido San Juan de Michis, creek descending from Sierra Urica Potrero Raymundo, W-facing ravine, beside creek bank in semishade of *Quercus rugosa*, 18 Oct 1987, *Jamieson 703* (TEX). **Mpio. Mezquital:** 48 km WNW of Huejuquilla El Alto, Jalisco, on road to Canoas, Durango, crest of ridge with steep slopes to N and S, forest of *Pinus*, *Arbutus*, and *Quercus*, 2530 m, 31 Oct 1983, *Breedlove 59107* (CAS, MEXU, TEX); 14 km ENE de Canoas, bosque de pino-encino, 2300 m, 31 Oct 1982, *Gonzalez & Rzedowski 2262* (TEX).

Baccharis supplex is a member of sect. *Aristidententes* Nesom (Nesom 1990), with *B. bigelovii*, *B. thesioides*, and others. I previously have identified the Durango plants as *B. bigelovii* (e.g., Nesom 1998) primarily because of their relatively broad leaves, but the two are significantly different in morphology (see diagnosis above) as well as geographically disjunct. *Baccharis supplex* is sympatric with *B. thesioides* as well as with *B. heterophylla*, *B. palmeri*, *B. pteronioides*, *B. salicifolia*, *B. salicina*, and *B. squarrosa*.

Plants of *Baccharis supplex* are similar in habit to those from western Michoacan described as *B. multiflora* var. *herbacea* McVaugh (McVaugh 1972, 1984), a herb with rhizomes ("creeping rootstocks" fide McVaugh) (Fig. 8). Those of *B. supplex* differ in their glabrous or minutely glandular vestiture (vs. sparsely pilose, eglandular), generally smaller leaves (10–50 mm long vs. 25–70 mm), smaller heads (pistillate involucre 3 mm long vs. 4.5–5 mm), and shorter mature pistillate pappus.

A collection from southern Chihuahua (Fig. 8: Mpio Urique, *Camou G. 166*, MEXU), at the southern extremity of *Baccharis bigelovii*, is similar to *B. supplex* but the leaves are distinctly 3-nerved like *B. bigelovii*. The Urique collection may represent a distinctive evolutionary entity.

4. BACCHARIS PRAETERMISSA Nesom, **sp. nov.** **TYPE: MEXICO. Baja California Sur.** [Mpio. Los Cabos]: Cape Region mountains, 25 Mar 1892, *T.S. Brandege s.n.* (holotype: UC 87180, Fig. 8; isotype: UC 87179, Fig. 9).

Similar and related to species of sect. *Aristidententes* Nesom in its stem vestiture of glutinous-viscid hairs, leaves with aristate-serrate margins and surface punctations with extruding papillae, pedicellate heads, and glabrous, 5–6-nerved achenes. Different from *B. bigelovii* in its taller, woody habit, elliptic leaves with finely serrulate margins and distinct petiolar base, and its dense capitulescence. Different from *B. serrifolia* in its erect habit, glabrous leaves and nearly glabrous stems, and more compact and corymboid capitulescence. Similar to *B. multiflora* in habit but different in its glabrous stems and leaves, densely sunken-punctate leaves with acute apices, smaller involucre, and non-acrescent pappus. Geographically disjunct from all possible close relatives.

Woody shrubs. **Stems** erect, early growth strongly multi-ridged, very sparsely puberulent with tiny orange-viscid hairs, becoming woody after the first year. **Leaves** mostly elliptic to broadly elliptic-lanceolate, 3–5.5 cm x 5–20 mm, reduced in size in the capitulescence, pinnate veined, sometimes weakly 3-veined, veins not raised, margins sharply serrate, 12–20 teeth per side, each tooth sometimes with a short hair-like arista, both surfaces densely punctate (each punctation sunken with an extruded papilla), glabrous, slightly glutinous when young, apex acute, base cuneate or abruptly attenuate to a petiole 1–3 mm long. **Heads** in loose to dense corymboid clusters, ultimate pedicels 6–23 mm long; pistillate involucre 3–4 mm wide, 2.5–3 mm long; staminate involucre

mostly 3 mm wide, 4 mm long; phyllaries lanceolate to triangular, minutely and sparsely glandular with tiny viscid hairs of 1 or few cells, margins narrow, hyaline, minutely lacerate. **Achenes** oblong, mature size not seen, 5–6-nerved, glabrous, nerves orange; pappus apparently not accrescent. Figures 9, 10, 11, 12.

Additional collections. **MEXICO. Baja California Sur.** [Mpio. Los Cabos]: San Francisquito Mts., 18 Oct 1890, *Brandege* 297 (UC! Fig. 10); Sierra La Laguna, Valle La Laguna, 27 Apr 2000, *Domínguez L.* 2774 (HCIB not seen); Sierra La Laguna, Cañón de La Zorra Campamento de Palo Extraño, 16 Feb 2001, *Domínguez L.* 3002 (HCIB not seen). HCIB collections, fide Jon Rebman, pers. comm.

Baccharis praetermissa is known by two collections made almost 130 years ago and two recent ones. On Brandege's two explorations in the Cape Region Mountains, he accompanied ornithologist W.E. Bryant, who provided an account of the trips and geography (Bryant 1891; also see Moran 1952). The trips were two years apart but the collections apparently were made in close proximity. In 1890, they travelled north from San José del Cabo to La Paz mostly along the eastern flank of the mountains. From Agua Caliente (23° 26' 35" N, 109° 46' 28" W) they went inland (west) into the Sierra de San Francisquito, then returned to Agua Caliente a week later. In 1892, according to Moran (1952), they again traveled north from San José del Cabo —Brandege collected on 25 March at Chuparosa in the Sierra de la Laguna and the next day was in the Sierra de San Francisquito. Maximum elevations in this area range from about 4000 to 6200 feet (fide Google Earth).

The only other species of *Baccharis* beside *B. praetermissa* collected from the Cape Region (and from all of Baja California Sur) are *B. salicifolia*, *B. sarothroides*, and *B. sergiloides* (Flora of Baja California 2018).

5. BACCHARIS HERBACEA (McVaugh) Nesom, **comb. et stat. nov.** *Baccharis multiflora* var. *herbacea* McVaugh, Contr. Univ. Michigan Herb. 9: 364. 1972. **TYPE: MEXICO. Michoacan.** Mpio. Coalcomán: near summits ca. 25 km SW of Aserradero Dos Aguas, nearly W of Aguillilla, pine-fir forests on limestone, 2400–2500 m, 6 Mar 1965, *R. McVaugh* 22846 (holotype: MICH image!; isotypes: DS! Fig. 13, DUKE image!, ENCB image! Fig. 15, LL!, NY image! Fig. 14).

Subshrubs, erect, rhizomatous. **Stems** up to 1 m tall, simple or few-branched until the capitulescence, sparsely pilose-puberulent with brownish, viscid hairs, eglandular. **Leaves** elliptic, 25–70 mm long, 10–20 mm wide, 2–4 times longer than wide, with a raised reticulum of veins, sparsely pilose-puberulent with brownish, viscid hairs, eglandular. **Heads** few in a loose, paniculate cluster, ultimate pedicels 3–11 mm long; pistillate heads with ca. 22 flowers, involucre 4.5–5 mm long, mature pistillate pappus slightly accrescent, 6–7 mm long; staminate heads with ca. 16 flowers, involucre 3.5–4 mm long, pappus bristles apically subclavate. Figures 13, 14, 15, 17.

McVaugh emphasized the similarities between typical *Baccharis multiflora* (sect. *Aristidentes*) and the entities he recognized as *B. multiflora* var. *brevipappa* McVaugh (= *B. brevipappa* (McVaugh) Nesom) and *B. multiflora* var. *herbacea*. I recognized *B. brevipappa* at specific rank (Nesom 1998), noting its distinctions in subsucculent habit, relatively diffuse capitulescence, longer leaves, and smaller heads and its separate geographic range (Figs. 16, 17).

I also noted (Nesom 1998) that var. *herbacea* warranted recognition at specific rank, pending corroboration of its distinction by further collections. No other collections apparently have been made but McVaugh (as collector) obviously saw the entity as distinct and made numerous duplicates (isotype citations above). It is morphologically distinct and geographically disjunct from typical *Baccharis multiflora*. It occurs at the range periphery of *B. brevipappa* (Fig. 15) but is distinct from it particularly in its rhizomatous, single-stemmed habit (vs. woody root, multi-stemmed in *B. brevipappa*) and its much smaller leaves (vs. (40–)75–130 mm long, 3.5–6(–8) times longer than wide in *B. brevipappa*).



Figure 13. *Baccharis herbacea*. Isotype (DS).

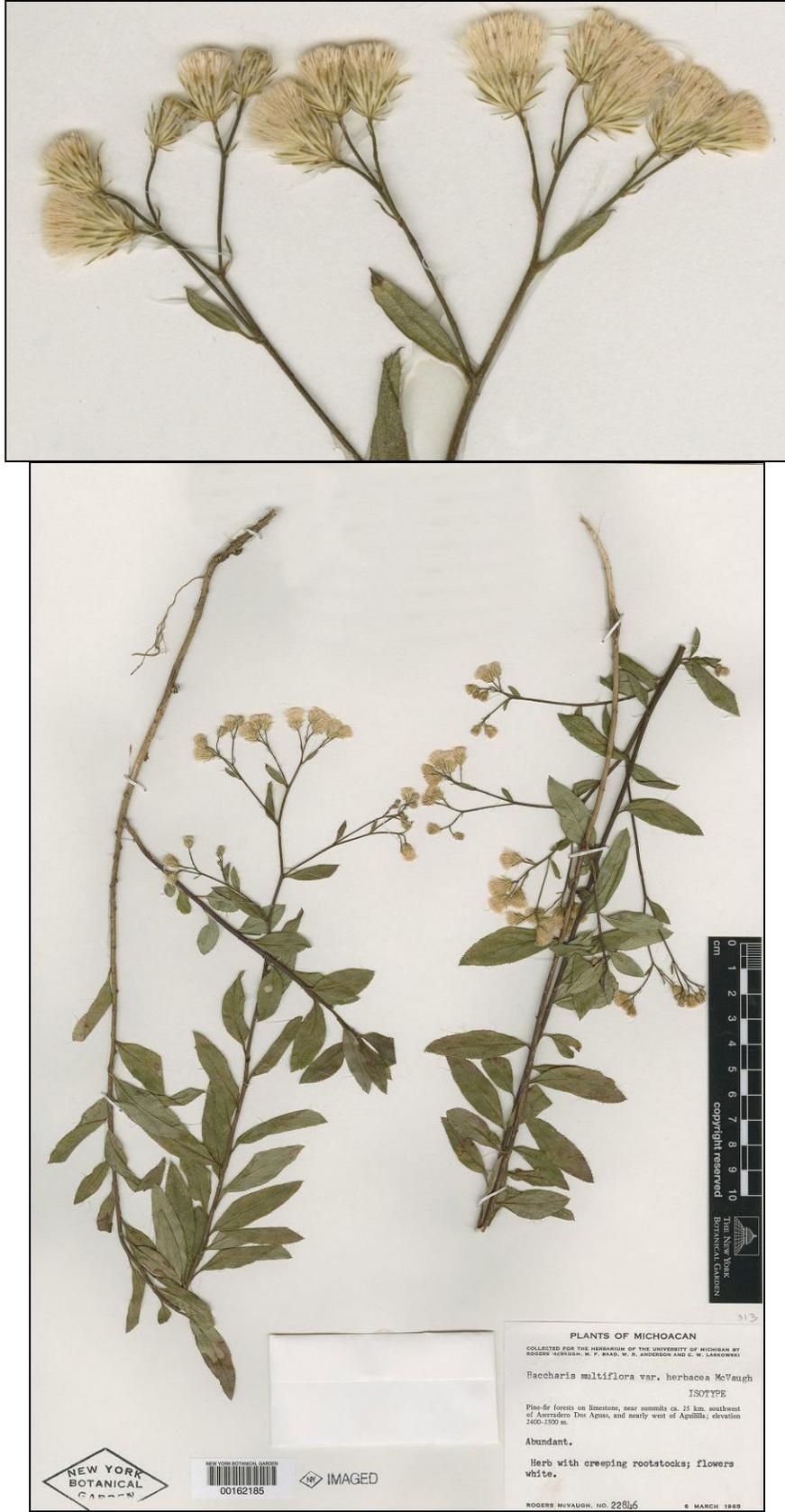


Figure 14. *Baccharis herbacea*. Isotype (NY).



Figure 15. *Baccharis herbacea*. Isotype (ENCB).



Figure 16. *Baccharis brevipappa*. Paratype, McVaugh 10096 (MEXU) from Jalisco.

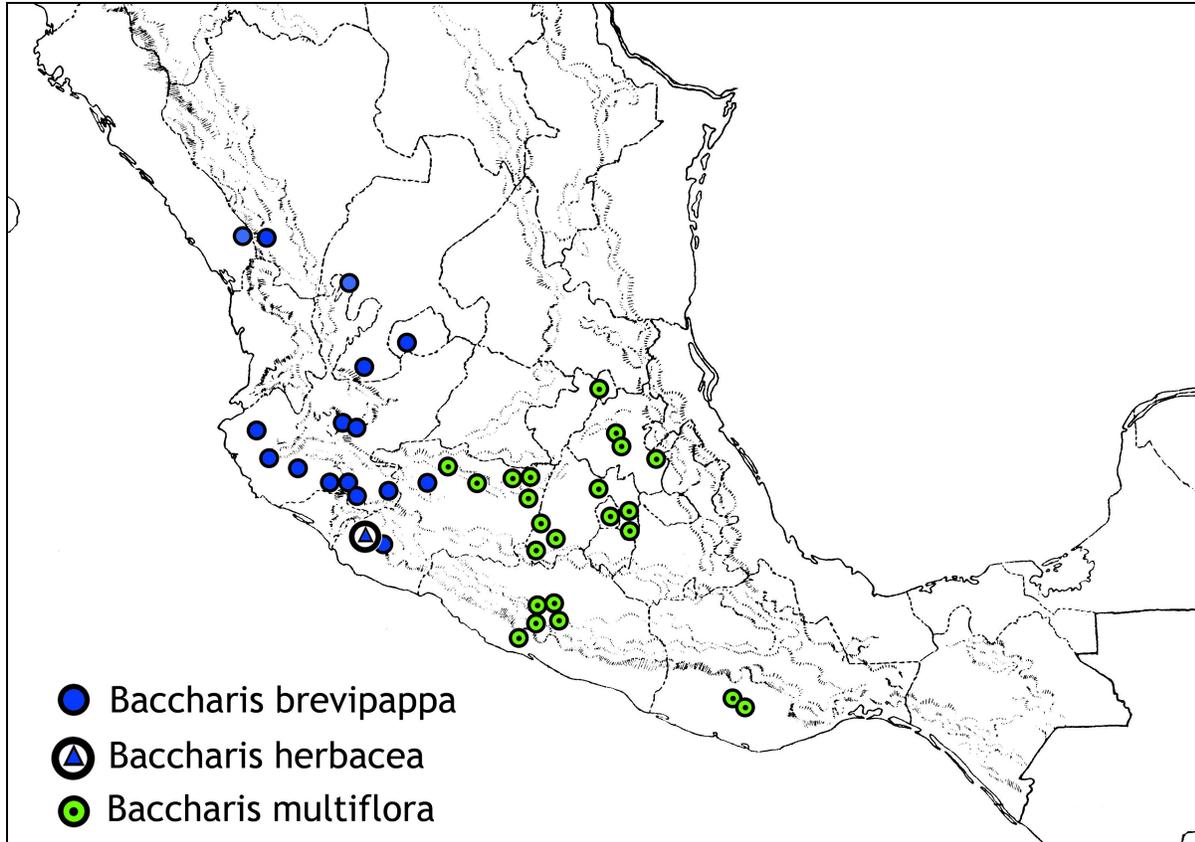


Figure 17. Distribution of *Baccharis brevipappa*, *B. herbacea*, and *B. multiflora*.

ACKNOWLEDGEMENTS

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