

***ERYTHRANTHE DIMINUENS* (PHRYMACEAE),  
A NEW SPECIES OF SECT. *SIMIOLUS* FROM SONORA**

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**ABSTRACT**

***Erythranthe diminuens*** Nesom, **sp. nov.**, is described from east-central Sonora, Mexico. It has fimbriate corolla margins and is a member of the group within sect. *Simiolus* that also includes *E. parvula*, *E. dentiloba*, and *E. chinatiensis*. The new species apparently is narrowly endemic, known only from the type collection.

Identification of recent collections from Sonora, Mexico — in the Madrean Archipelago Biodiversity Assessment and Madrean Discovery Expeditions biotic inventory programs in Sonoran Sky Islands (MDE 2017) — brings to light a previously undescribed species of *Erythranthe*. It has a rhizomatous, mat-forming habit and fimbriate corolla margins and joins a group within sect. *Simiolus* (Nesom 2012) of three similar species from northwestern Mexico and the adjacent USA (Fig. 4).

**ERYTHRANTHE DIMINUENS** Nesom, **sp. nov.** **TYPE: MEXICO. Sonora.** Mpio. de Bacadéhuachi: Sierra de Bacadéhuachi, Rincón de Guadalupe, 16.5 km (air) ENE of Bacadéhuachi, Arroyo Campo los Padres (Río Riíto drainage), 29°50'40" N, 108°58'37" W, pine-oak forest, 1690 m, locally abundant herbaceous perennial on moist, shady bank, 31 Mar 2012, *A.L. Reina-G 2012-271* with Van Devender and Rice (holotype: TEX!; isotypes: ARIZ, MEXU, USON). Figure 1.

Similar to *Erythranthe parvula* in its fimbriate corolla margins, prostrate habit, and plesiomorphic arrangement of stamens and stigma but different in its leaves consistently much smaller (2–4 x 2–4 mm vs 3–11 x 3–9 mm) and villous with flexuous, glandular hairs only on the upper surface (vs stiffly hispid-hirsute on both surfaces).

**Perennial**, rhizomatous, mat-forming. **Stems** prostrate, 2–10 cm, sometimes rooting at the nodes, minutely and sparsely stipitate-glandular. **Leaves** cauline, petiolate, blades broadly ovate to deltate, 2–4 mm x 2–4 mm (consistent in size, fide Thomas R. Van Devender, pers. comm.), venation not evident, adaxially densely villous with flexuous, broadly flattened, vitreous, gland-tipped hairs 0.2–1.0 mm long, abaxially dark purple and glabrous, margins serrate to denticulate with 2–4 teeth per side, apices acute to obtuse, bases truncate to cuneate, petioles 1–2 mm. **Flowers** axillary, 1–2 per node. **Fruiting pedicels** 4–20 mm, sparsely and minutely stipitate-glandular. **Fruiting calyces** cylindrical-ovoid, 4–5 mm, closing, barely if at all nodding, moderately villous with gland-tipped hairs, lobes 5, acute-attenuate. **Corollas** yellow, red-dotted, tube-throat funnelform, 6–8 mm, exerted 4–5 mm beyond calyx margin, limb bilabiate, expanded 3–4 mm (pressed), lobes fimbriate. **Anther pairs** barely separated in level and essentially contiguous, stigma even with or very slightly above upper anther pair (plesiomorphic, autogamous).

Known only from the type collection. The Sierra Bacadéhuachi (Wild Sonora 2017) has been considered a western ridge of the Sierra Madre Occidental or a separate Sky Island mountain range. The epithet alludes to the tiny leaves and flowers.

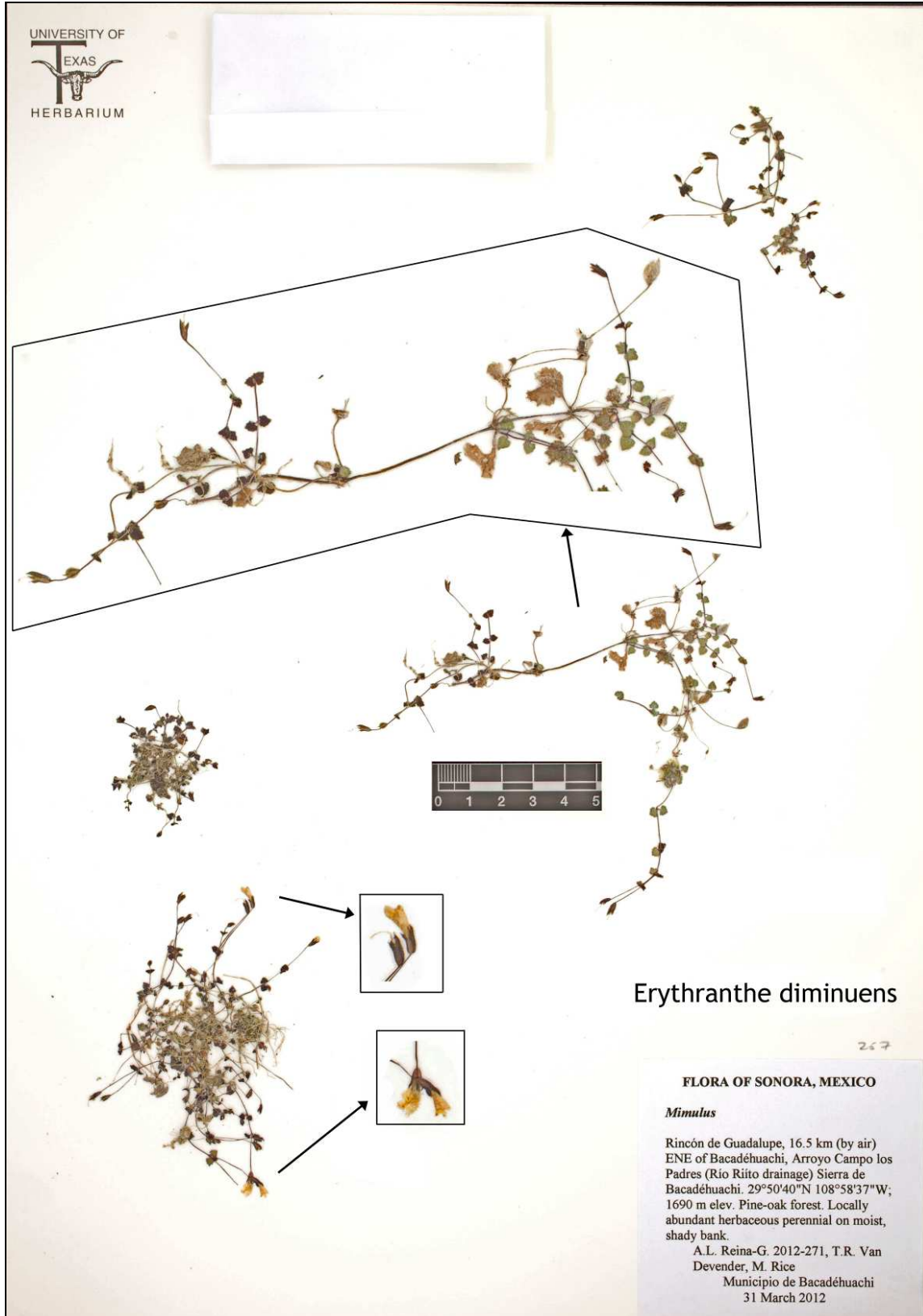


Figure 1. *Erythranthe diminuens*, holotype.

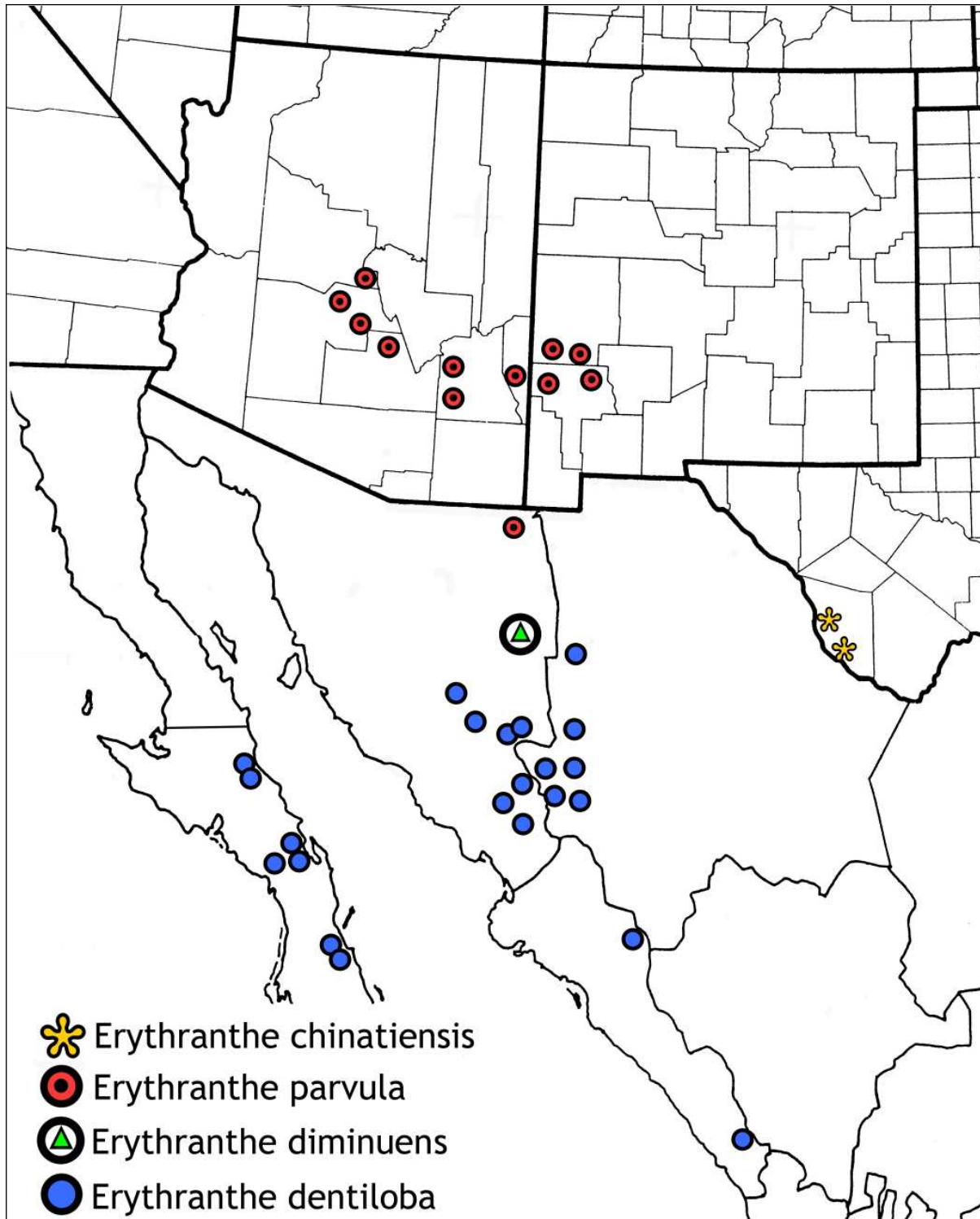


Figure 2. Distribution of *Erythranthe* sect. *Simiolus* species with fimbriate corolla margins. All occur in wet or seepy habitats; the two narrow endemics (*E. chinatiensis*, *E. diminuens*) are not evidently distinct as a pair.

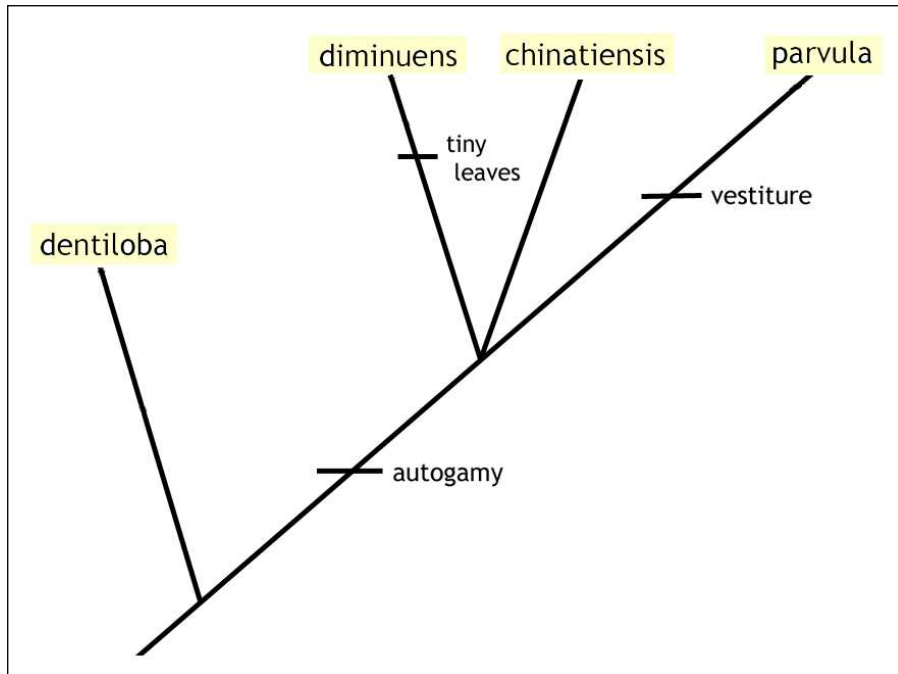


Figure 3. Informal phylogenetic hypothesis for the sect. *Simiolus* species with fimbriate corolla margins, assuming that allogamous breeding, villous-glandular vestiture, dentiloba-leaf size, and more than 1 flower per stem are plesiomorphic features. The scant cladistic resolution rests on the assumption that autogamy developed in the common ancestor of *E. diminuens/chinatiensis/parvula* and was inherited. The vestiture of *E. parvula*, which occurs in no other species of *Erythranthe*, is assumed to be specialized.

The hispid-hirsute leaf vestiture of *Erythranthe parvula* sets it apart from the other species of the group with fimbriate corolla margins. Adaxial leaf surfaces of *E. diminuens* are densely glandular-villous with flexuous, flattened, and vitreous hairs; adaxial leaf surfaces of *E. dentiloba* and *E. chinatiensis* usually are glabrous but when a few hairs are produced, they are the same as in *E. diminuens*. The geography of *E. diminuens* (Fig. 2) suggests that it is more closely related to *E. dentiloba* than to the others (see further comments below), but *E. diminuens/E. chinatiensis/E. parvula* are autogamous (judging from the plesiogamous arrangement of stamens and stigma), compared to *E. dentiloba*, which is herkogamous and presumably allogamous. The key below distinguishes the four species.

- 1. Leaves glabrous on both surfaces or rarely sparsely glandular-villous adaxially; allogamous, stamen pairs at different levels, stigma above upper anther pair ..... **Erythranthe dentiloba**
- 1. Leaves usually hairy at least adaxially; autogamous, both stamen pairs and the stigma at essentially the same level.
  - 2. Leaves hirsute adaxially with whitish, rigidly erect, minutely gland-tipped hairs; pedicels and distal stems stipitate-glandular ..... **Erythranthe parvula**
  - 2. Leaves usually villous adaxially with flexuous, broadly flattened, vitreous, gland-tipped hairs; pedicels and distal stems glabrous or stipitate-glandular.
    - 3. Leaves 4–15(–22) mm x 4–15(–18) mm; glabrous to glandular-villous adaxially, abaxially green and glabrous; pedicels and stems glabrous ..... **Erythranthe chinatiensis**
    - 3. Leaves 2–4 x 2–4 mm, adaxially glandular-villous, abaxially dark purple and glabrous; pedicels and stems sparsely stipitate-glandular ..... **Erythranthe diminuens**

*Erythranthe diminuens* might be reasonably hypothesized to be a variant of *E. dentiloba* at the northernmost point of its range. Evidence supporting their distinction is summarized in the couplet below.

1. Leaves 2–10(–17) x 2–10(–20) mm; corolla tube-throats 5–7 mm, exerted 2–3 mm beyond the calyx margin, limb expanded 6–9 mm; herkogamous, presumably allogamous ..... **Erythranthe dentiloba**
1. Leaves 2–4 mm x 2–4 mm (consistent in size); corolla tube-throats 6–8 mm, exerted 4–5 mm beyond the calyx margin, limb expanded 3–4 mm; plesiogamous, presumably autogamous  
 ..... **Erythranthe diminuens**

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**LITERATURE CITED**

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