

***ERYTHRANTHE MITODES* (PHRYMACEAE), A NEW SPECIES  
FROM OLD COLLECTIONS  
FROM COLORADO**

**GUY L. NESOM**

Research Associate

Academy of Natural Sciences of Drexel University

Philadelphia, Pennsylvania

guynesom@sbcglobal.net

**ABSTRACT**

***Erythranthe mitodes*** Nesom, **sp. nov.**, is described from near Ouray in southwestern Colorado. It differs from *E. guttata*, which grows in the same area, by its annual duration (without rhizomes or stolons), creeping or pendent habit, filiform stems, and solitary flowers. A hypothetical phylogeny of *Erythranthe* sect. *Simiolus* is updated here with a diagrammatic representation.

Two collections of *Erythranthe* from near Ouray, Colorado, both from 1915 and both apparently from the same locality, represent an unusual morphology in sect. *Simiolus*. An attempt to relocate the plants (July 2023) at the type locality was unsuccessful, but the plants are so distinctive that they are described here as a previously unrecognized species. *Erythranthe guttata*, as typical of that species in most of Colorado, does presently occur in abundance at the type locality and was observed and collected in 1915.

**ERYTHRANTHE MITODES** Nesom, **sp. nov.** **TYPE: Colorado.** Ouray Co.: Ouray, on rocks along road west (road wash), 24 Jul 1915, *G.E. Osterhout 5323* (holotype: RM; isotype: COLO). Figures 4, 5, and 6.

Similar to *Erythranthe guttata* in its large yellow, bilabiate corollas but distinct in its annual duration, without rhizomes, the stems glabrous, filiform, and creeping or pendent, and flowers solitary on long pedicels from the distalmost node.

**Annuals**, apparently with shallow fibrous roots. **Stems** filiform, creeping or pendent, glabrous or with very scattered stipitate-glandular hairs. **Leaves** ovate to ovate-lanceolate, blades glabrous on both surfaces, 15–28 mm long, 9–25 mm wide, base rounded to cuneate to truncate, proximal cauline sometimes narrowly elliptic and 4–5 mm wide, basal not persistent, margins serrate-dentate with 3–6 pairs of sharp teeth, petioles mostly 1–2 mm long, the proximal up to 12 mm long. **Flowers** solitary on a long pedicel from the distalmost node; pedicels 10–25 mm long, sparsely to moderately minutely hirsutulous to nearly glabrous; fruiting calyces nodding, 9–11 mm long, minutely, evenly hispidulous, with a few stipitate-glandular hairs, without spotting; corollas yellow, apparently without spotting, tube-throat funnelform, ca. 15–19 mm long, exerted 3–5 mm beyond the calyx margin, limb expanded 16–20 mm wide (pressed). **Capsules** not seen.

**Additional collections. Colorado.** Ouray Co.: Ouray, on rocks along road wash, 24 Jul 1915, *Osterhout 5338* (RM, Figs. 6 and 7); SW of Ouray, along Cañon Creek, moist rock crevices, ca. 9500–10,000 ft, 27 Jul 1915, *Pennell 6208* (NY-Fig. 9, PH-Fig. 10).

Placement of *Erythranthe mitodes* in sect. *Simiolus* is based on its sessile (short-petiolate) and ovate leaf blades, inflated and bilabiate fruiting calyx with characteristically upturned lower lobes (see Figs. 7–8), and bilabiate corolla limbs. The lower lip and throat of the corolla dries with a bluish-green color (see Fig. 7), which is also seen in other species (e.g., *E. unimaculata*, *E. decora* in Idaho) but not in *E. guttata*. The relationship of *E. mitodes* to other species of the "Guttata group" (Fig. 1) is speculative.

In 1920, Pennell annotated Osterhout's 5323 and 5338 (RM) as the "lax mountain form" of *M. guttatus*. Pennell's original label for his own 6208 identified it as *Mimulus guttatus*, but in 1945, he annotated the PH sheet of 6208 as "M. minor Nels. (M. alpinus (Gray))." The type of *Mimulus minor* A. Nels., however, is a plant of *Erythranthe guttata* as characteristically occurs along the Canyon Creek road and in most of Colorado (Nesom 2019; Figs. 11-15), as is the type of *M. luteus* var. *alpinus* A. Gray (Parry 235a, GH, from Colorado).

Osterhout was collecting in the vicinity of Ouray July 21-28 (1915; from collection dates on RM specimens), Pennell on 26-27 July 1915. It seems likely that they must have at least seen each other, Pennell perhaps receiving information about variation in the Canyon Creek monkeyflowers, since Osterhout apparently collected only the "lax mountain form" along Canyon Creek, even though the more typical form of the species surely was the more abundant. Osterhout annotated the RM sheet as "seems to be *M. nasutus* Greene or close to it."

Pennell, however, collected both forms along Canyon Creek (Figs. 2 and 3). His 6205, 6207, and 6209 are characteristic *Erythranthe guttata*, 6207 with exactly the same label data as 6208, the "lax mountain form," and at least by 1920 he realized that they were different entities. Pennell's collections of *Erythranthe guttata* from Canyon Creek: W of Ouray, moist spring head, 9000-10,000 ft, 26 Jul 1915, Pennell 6205 (NY); SW of Ouray, along Cañon Creek, moist rock crevices, ca. 9500-10,000 ft, 27 Jul 1915, Pennell 6207 (NY-Fig. 11, PH); SW of Ouray, along Cañon Creek, ditch, ca. 9500-10,000 ft, 27 Jul 1915, Pennell 6209 (NY-Fig. 12, PH).

On 28 July 2023, I searched along the Canyon Creek road above 9000 feet (Fig. 2), as far as Yankee Boy Basin, but was unable to find the species described here, although *Erythranthe guttata* was abundant at many sites. The road was built in about 1878 when discoveries of gold were made near Mt. Sneffels (Cummins 1951), and the opening of the Camp Bird Mine in 1897 meant that the road was well-traveled — Osterhout and Pennell apparently had no problem in reaching the area in 1915, when the rock faces on the north side (south-facing) of the road were little modified. Steep, north-facing cliffs and banks along the south side of Canyon Creek are much wetter and likely are habitat for *E. mitodes*, but those sites were inaccessible to me. Plants may be present on steep habitats above the road cuts (see Fig. 3), just above the sites where seen by Osterhout and Pennell.

#### ACKNOWLEDGEMENTS

I'm grateful for the assistance and happy company of daughter Genevieve Nesom, who, with me, was awed by the biology and scenery of southern Colorado.

#### LITERATURE CITED

- Cummins, D.H. 1951. Social and Economic History of Southwestern Colorado, 1860-1948. Ph.D. thesis, Univ. of Texas, Austin.
- Nesom, G.L. 2012. Taxonomy of *Erythranthe* sect. *Simiola* (Phrymaceae) in the USA and Mexico. *Phytoneuron* 2012-40: 1-123.
- Nesom, G.L. 2019. Taxonomic status of *Erythranthe minor* (Phrymaceae). *Phytoneuron* 2019-32: 1-7.

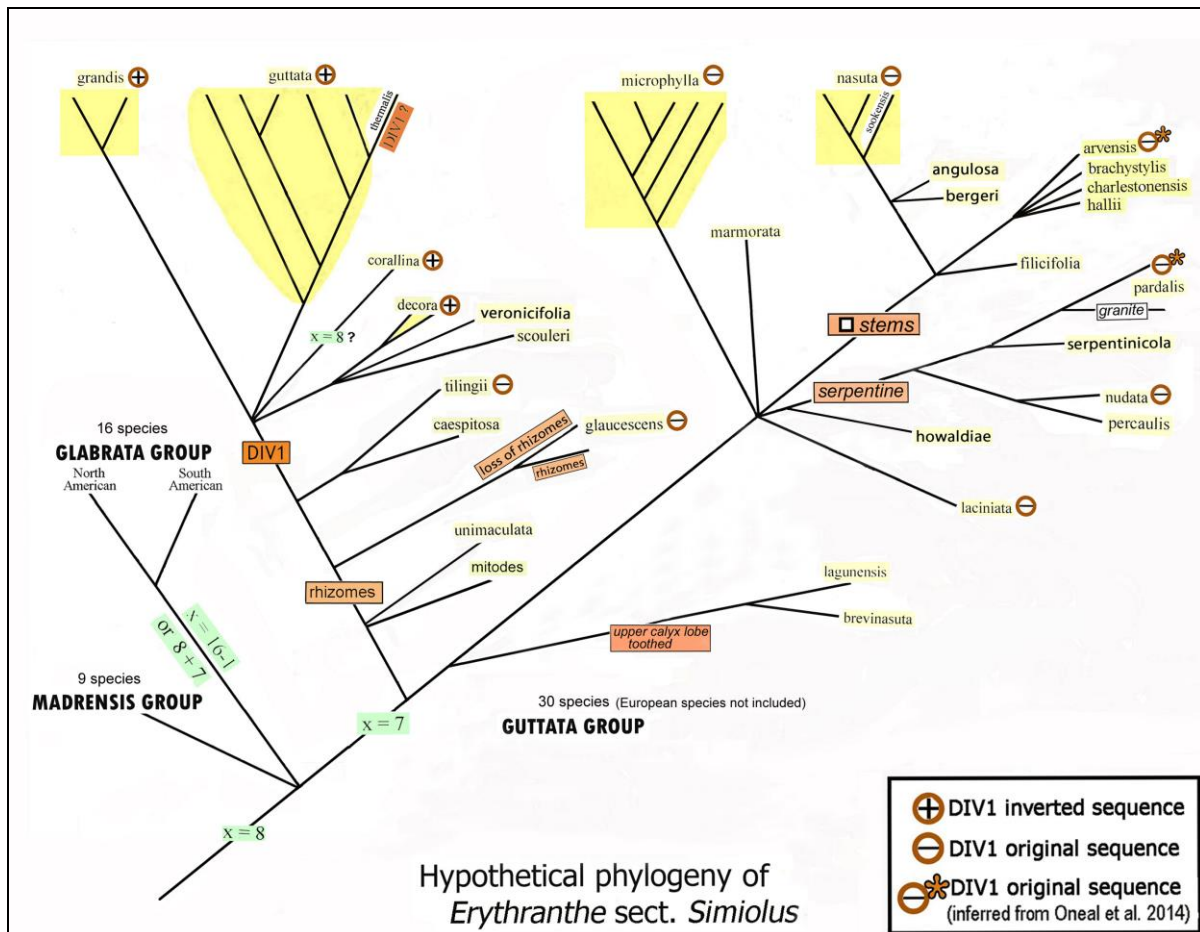


Figure 1. Hypothetical phylogeny of *Erythranthe* sect. *Simiolus*. The 55 species are divided into 3 main groups: Madrensis (base chromosome number,  $x = 8$ ), Glabrata ( $x = 15$ ), and Guttata ( $x = 7$ ). Extra branches within *E. decora*, *E. grandis*, *E. guttata*, *E. microphylla*, *E. nasuta*, and *E. pardalis* indicate the existence of regional morphological and/or cytological variants (the author has argued that *E. thermalis* should be recognized as a distinct species). This arrangement is updated from Nesom (2019).

The arrangement of species is primarily based the presence of the DIV1 inversion, geographical similarity, chromosome number, and similarities in specialized morphology (characters emphasized in defining the groups are noted). Rhizomes, adaptation to serpentine, and square stems are assumed here to have a single origin in the section.

*Erythranthe unimaculata* (Pennell) Nesom is similar to *E. guttata* in overall aspect but the plants are annual and the species occurs only Arizona southward into Sonora and Chihuahua. *Erythranthe mitodes* also is annual and outside the Californian center of diversity of sect. *Simiolus*.

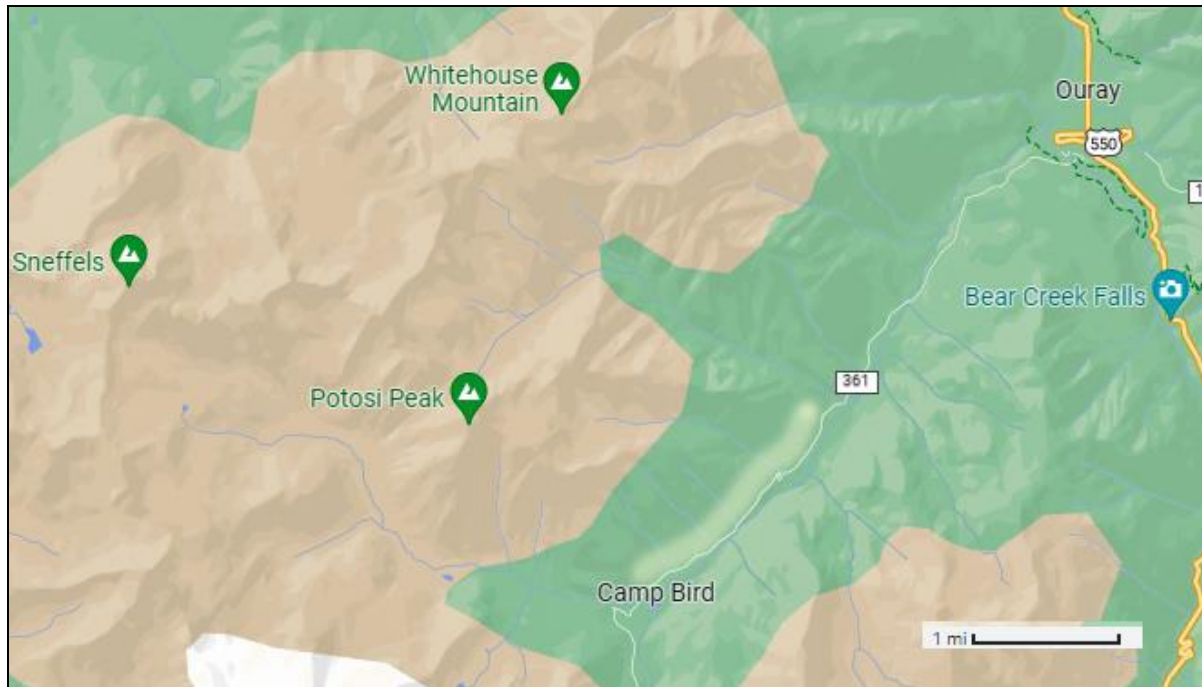


Figure 2. Type locality of *Erythranthe mitodes*, Ouray Co., Colorado. The highlighted section of Canyon Creek road (Hwy 361) is above 9000 feet.



Figure 3. Canyon Creek road near Camp Bird, showing probable habitat (but modified by road work) of *Erythranthe mitodes* near Camp Bird, at or near the type locality. Photo by G. Nesom, 28 July 2023.



Figure 4. *Erythranthe mitodes*. Ouray Co., Colorado, Osterhout 5323 (RM). Holotype.



Figure 5. *Erythranthe mitodes*. Osterhout 5323 (RM). Detail of Figure 1.



Figure 6. *Erythranthe mitodes*. Ouray Co., Colorado, Osterhout 5323 (COLO). Isotype.

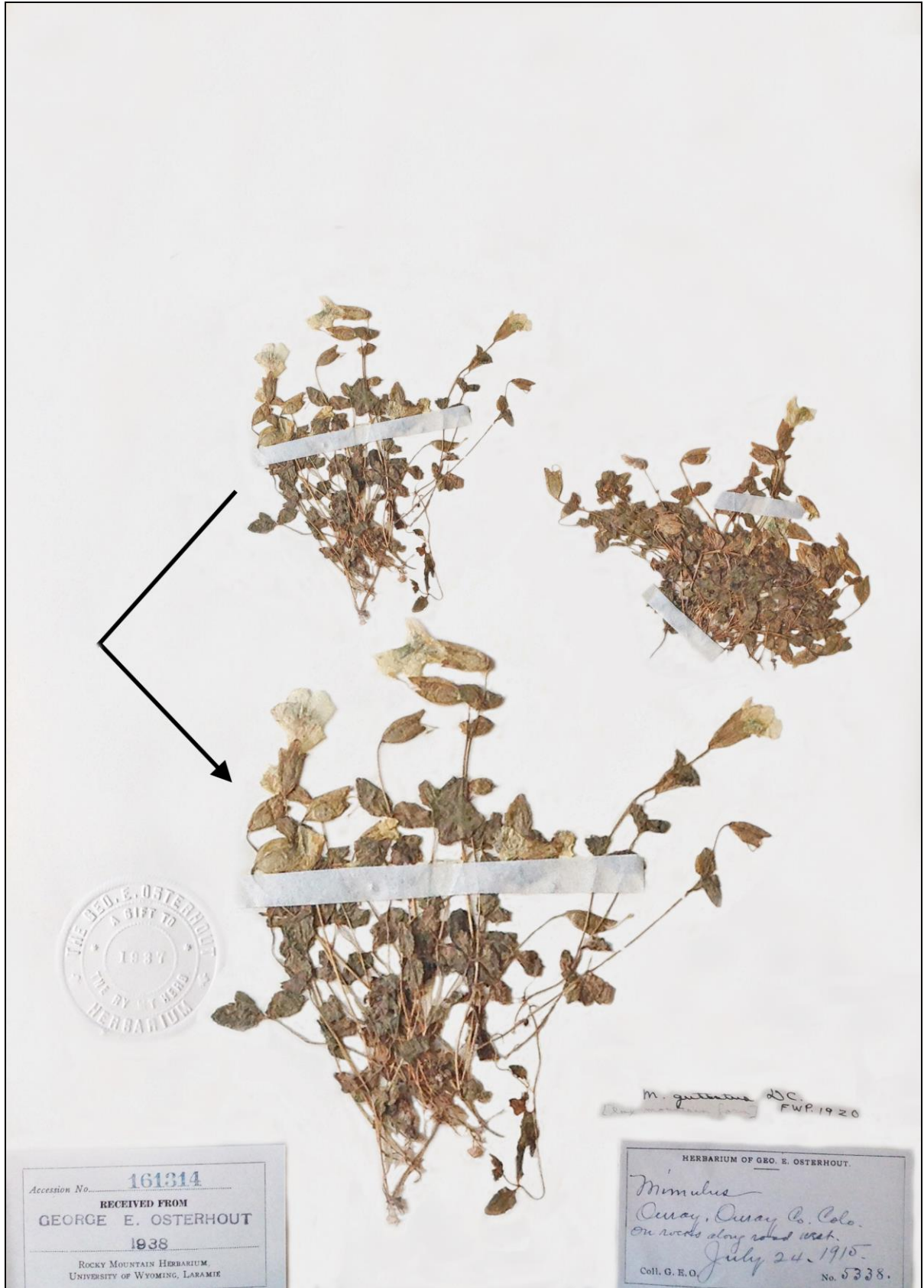


Figure 7. *Erythranthe mitodes*. Ouray Co., Colorado, Osterhout 5338 (RM).





Figure 8. *Erythranthe mitodes*. Osterhout 5338 (RM). Detail, see Figure 4.



Figure 9. *Erythranthe mitodes*. Ouray Co., Colorado, Pennell 6208 (NY).

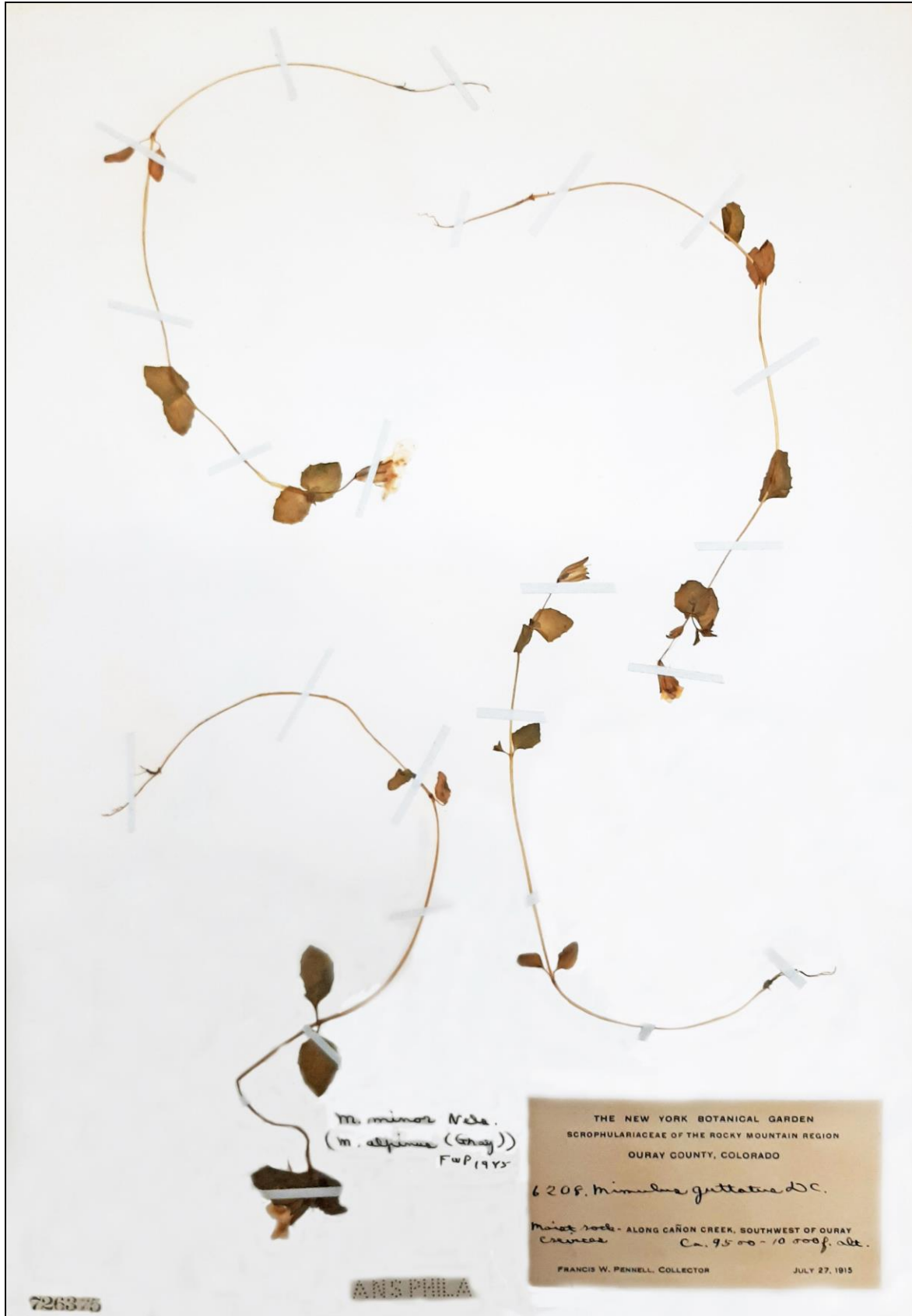


Figure 10. *Erythranthe mitodes*. Ouray Co., Colorado, Pennell 6208 (PH).



Figure 11. *Erythranthe guttata*. Pennell 6207 (NY), Ouray Co., Colorado, Canyon Creek road, at the type locality for *E. mitodes*.



Figure 12. *Erythranthe guttata*. Pennell 6209 (NY), Canyon Creek road, at the type locality for *E. mitodes*.

Nesom: *Erythranthe mitodes*

Figure 13. *Erythranthe guttata*. Kivisto 15 (TENN), Ouray Co., Colorado, Canyon Creek road (Hwy 361) near the type locality of *C. mitodes*.



Figure 14. *Erythranthe guttata*. Mattoon 72 (COLO), Ouray Co., Colorado, Canyon Creek road, near the type locality of *E. mitodes*.



Figure 15. *Erythranthe guttata*. Jennings s.n. (CS), 3 mi above Ouray on US 550. The smallest plants have solitary flowers, but they are rhizomatous and the stems are short and erect, not like those of *E. mitodes*.