

RECOGNITION OF *ERYTHRANTHE VERONICIFOLIA* (SECT. *SIMIOLUS*; PHRYMACEAE)

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ABSTRACT

Plants described by Greene in 1909 and treated by Pennell in 1951 as *Mimulus veronicifolius* are belatedly recognized here as distinct, as ***Erythranthe veronicifolia*** (Greene) Nesom, **comb. nov.** The species is endemic to high elevations in the Olympic Mountains of northwestern Washington and Vancouver Island. It similar to and probably most closely related to *Erythranthe decora* of sect. *Simiolus*.

Study of *Erythranthe decora* (Nesom 2019) has led to the recognition of a distinct, more narrowly distributed species probably closely related to it. These plants were described by Greene in 1909 and treated by Pennell in 1951 as *Mimulus veronicifolius* — the species is here brought into *Erythranthe* (sect. *Simiolus*).

Erythranthe veronicifolia (Greene) Nesom, **comb. nov.** *Mimulus veronicifolius* Greene, Leaf. Bot. Observ. Crit. 2: 7. 1909. **TYPE: USA. Washington.** [Clallam Co.:] Olympic Mountains, along rivulets, 5000 ft, Aug 1895, C.V. Piper 2177 (holotype: ND-Greene!). Figure 3.

Plants perennial from slender rhizomes. **Stems** erect, 10–30 cm tall, glabrous proximally, becoming sparsely minutely hirtellous distally. **Leaves:** basal very small, largest at midstem, blades elliptic-ovate, 10–30(–45) mm long, base attenuate to a petiole or petiolar region 5–15 mm (proximal leaves) to 0–3(–5) mm (mid and distal leaves) long, margins shallowly serrate to crenate with 5–8 teeth per side, both surfaces glabrous. **Flowers** 1–3(–7) from distal nodes. **Fruiting pedicels** 20–40 mm. **Calyces** 10–15 mm long, densely minutely hirtellous, rarely purple-spotted (variable within populations), lobes obtuse. **Corollas** yellow to chrome yellow, without red spots, tube-throat 15–25 mm long, 8–12 mm wide (pressed), exerted 15–25 mm beyond the calyx margin, limb expanded 18–25 mm (pressed).

Flowering (Jun–) Jul–early Sep. Boggy alpine meadows, around springs and rivulets, lake sides and along rocky streams; 3000–5700 feet. Figure 10 shows an Olympic Mountains colony in situ.

Additional collections. CANADA. British Columbia. Vancouver Island: Port Alberni, Limestone Mtn., end of logging road M2A, between Limestone Mtn. and Mt. McQuillam, 900 m, 8 Jul 1983, *Ceska et al.* 15208 (UBC); Forbidden Plateau, 1936, *Fowle s.n.* (UBC); Strathcona Park, Burman Lake, [ca. 4900 ft], 10 Aug 1958, *Krajina et al.* 68081017 (UBC); Sproat Lake, alpine meadow, 3300 ft, 10 Aug 1941, *Taylor* 1267 (UBC); Moat Lake, 4000 ft, 26 Jul 1957, *Underhill* 338 (UBC). **USA. Oregon. Clallam Co.** [Olympic Mts., Olympic Natl Park]: Hurricane Hill, in cañon near top of ridge about spring, 5000 ft, 16 Aug 1941, *Foster* 1904 (PSU); Boulder Creek, 6 Sep 1935, *Jones* 8487 (WTU); E side of Obstruction Point, along very moist rivulets, 5700 ft, arctic-alpine zone, 4 Sep 1937, *Meyer* 1247 (WTU); Mt. Angeles, rocky stream, 4800–5200 ft, 9 Aug 1931, *Pennell* 15821 (PH); Deer Lake, above Duc Hot Springs, boggy meadow, 3600–3700 ft, 9 Aug 1937, *Pennell & Meyer* 21214 (PH); Hurricane Ridge, E of Elwha River, cold, shaded swamp, 3400–3500 ft, 11 Aug 1937, *Pennell & Meyer* 21267 (PH); Mt. Angeles, wet stream banks, 5100 ft, 2 Aug 1930, *Thompson* 5531 (PH); near summit of Mt. Angeles, wet bank of alpine stream, 5100 ft, 2 Aug 1930, *Thompson* 5541 (WTU); Mt. Angeles, swampy alpine meadow, 5000 ft, 19 Jun 1931, *Thompson* 7555 (PH, WTU); Mt. Angeles, moist stream banks, 5500 ft, 10 Aug 1931, *Thompson* 7849 (PH, WTU); Mt. Angeles, 14 Aug 1911, *Webster* 1945 (WTU).

Erythranthe veronicifolia is recognized by its rhizomatous habit, erect, mostly unbranched stems minutely hirtellous distally, glabrous proximally, relatively long internodes, ovate-lanceolate

leaves with shallowly serrate-crenate margins and attenuate base, and few flowers with large corollas. Greene (1909) noted that the corollas were "perhaps the largest in the genus." Plants of the species are remarkably constant in morphology (Figures 3-9).

Grant (1924) placed *Mimulus veronicifolius* as a synonym of *Mimulus tilingii* var. *corallinus*. Pennell (1951) recognized *M. veronicifolius* as a distinct species endemic to the Olympic Mountains, comparing it in his key to *M. decorus*. I placed *M. veronicifolius* in 2012 as a synonym of *Erythranthe caespitosa* and, reflecting my confusion about its identity, have annotated collections of it as *Erythranthe tilingii* (emphasizing the rhizomatous habit and leaf shape), more recently as *Erythranthe decora* (emphasizing vestiture). Other floristic accounts either have not included *E. veronicifolia* (e.g., Hitchcock & Cronquist 1973, 2018) or have treated it as a synonym of *E. tilingii* (e.g., Campbell 1950; Klinka & Qian 2002). On review of morphological and geographic variation in *E. decora* (Nesom 2019), the distinction of *E. veronicifolia* has become apparent. The two are contrasted here.

- a. Stems 30–100 cm tall; leaf blades broadly ovate-triangular to ovate-lanceolate with truncate to rounded or shallowly cordate base, mostly 3–5(–6) cm long, with 9–15 teeth per side, smaller teeth often between larger; midstem petioles 3–5 mm long **Erythranthe decora**
- a. Stems 10–30 cm tall; leaf blades elliptic-ovate with attenuate base, 1–4.5 cm long, with 5–8 even-sized teeth per side; midstem petioles 0–3(–)5 mm long **Erythranthe veronicifolia**

In both species, pedicels and calyces characteristically are minutely hirtellous. Stems of *Erythranthe decora* also are hirtellous, at least distally; distal stems of *E. veronicifolia* are hirtellous but sometimes glabrate with only a few scattered hairs. The abaxial leaf surface (less commonly both surfaces) of distal leaves of *E. decora* is minutely hirtellous (often seen only with a lens), while both surfaces of *E. veronicifolia* consistently are glabrous.

Erythranthe veronicifolia has been commonly collected in the Mt. Angeles area of the Olympic Mountains — typical *E. decora* occurs there sympatrically (e.g., Mink Lake above Sol Duc Hot Springs, Pennell & Meyer 21228, PH). Typical *E. caespitosa* also occurs on Mt. Angeles (e.g., Thompson 5540, PH) — some plants may resemble small individuals of *E. veronicifolia* (with short stems, small leaves), but *E. caespitosa* has mostly procumbent stems, smaller leaves with fewer teeth, glabrous calyces, and smaller corollas.

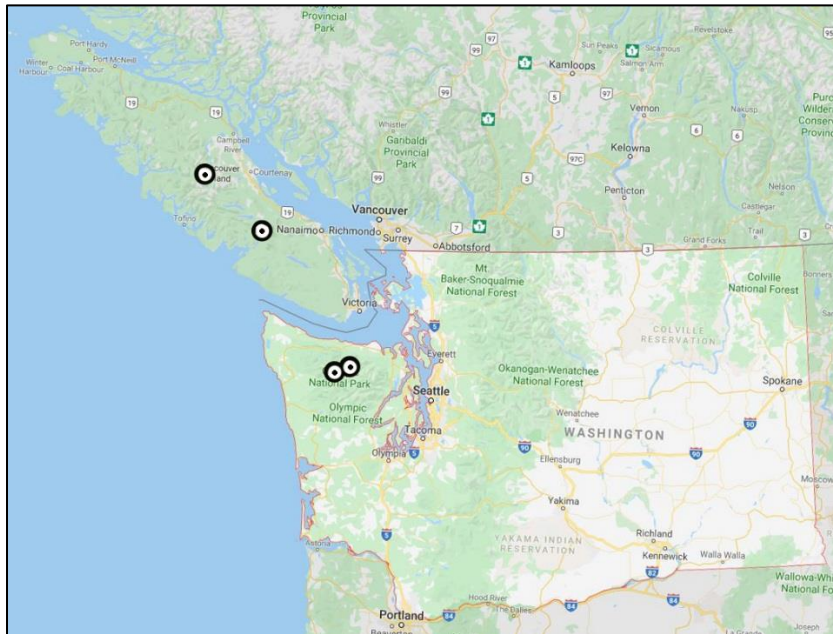


Figure 1. Distribution of *Erythranthe veronicifolia*. Detailed localities are shown in Fig. 2.

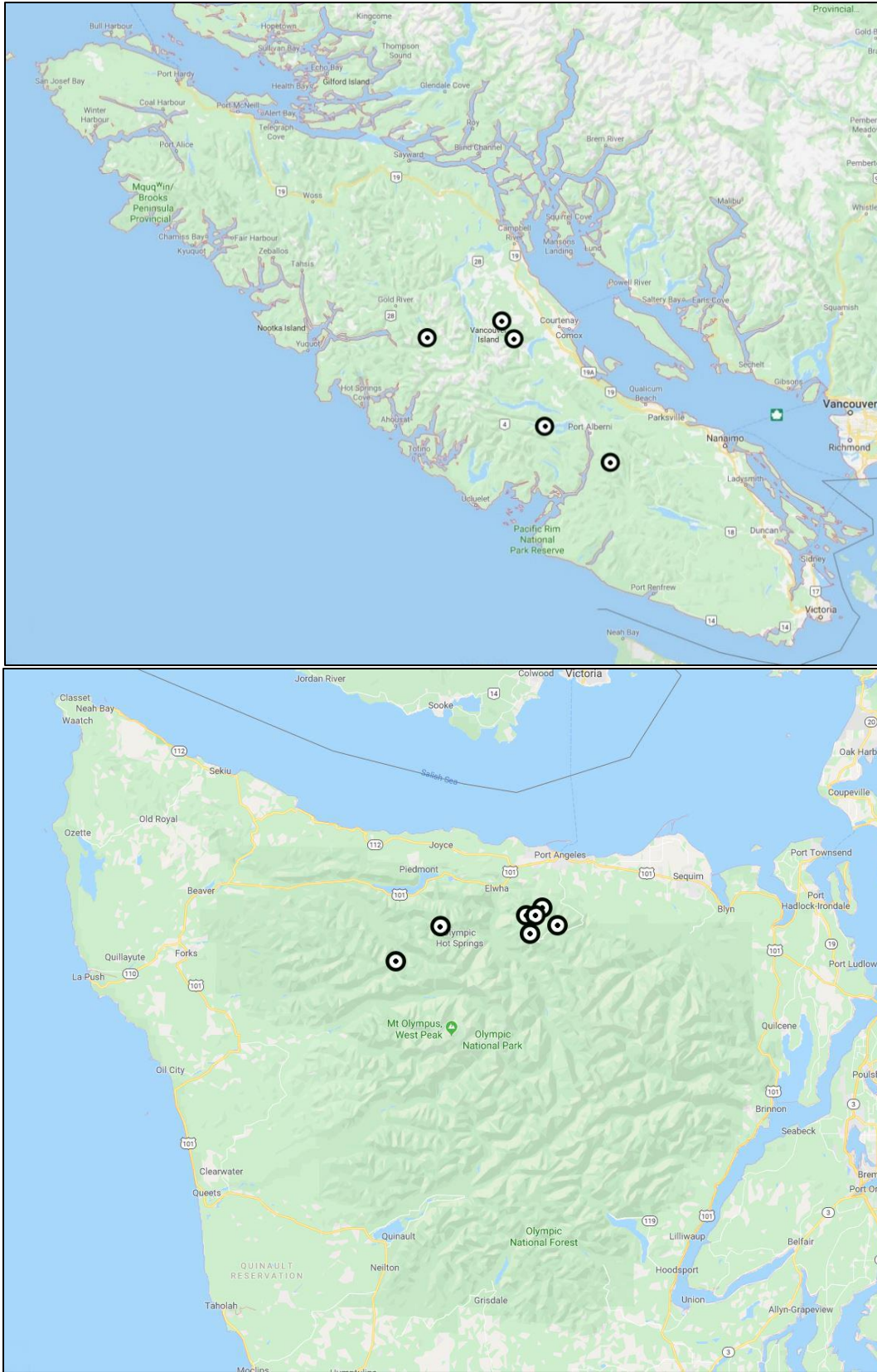


Figure 2. Distribution of *Erythranthe veronicifolia*. Top: Vancouver Island. Bottom: Olympic Mountains.



Figure 3. *Erythranthe veronicifolia*. Olympic Mountains, holotype, NDG.



Figure 4. *Erythranthe veronicifolia*. Olympic Mountains, Thompson 7849, WTU.



Figure 5. *Erythranthe veronicifolia*. Olympic Mountains, Thompson 7555, WTU.



Figure 6. *Erythranthe veronicifolia*. Olympic Mountains, Jones 8487, WTU.



Figure 7. *Erythranthe veronicifolia*. Vancouver Island, Ceska et al. 15208 (UBC).



Figure 8. *Erythranthe veronicifolia*. Vancouver Island, Taylor 1267 (UBC).



Figure 9. *Erythranthe veronicifolia*. Vancouver Island, Underhill 338 (UBC).



Figure 10. *Erythranthe veronicifolia* in Olympic National Park. "Moist area near the trailhead for the switchback trail up the south side of Klahhane Ridge" (Slichter 2016). Photo by Paul Slichter, 26 July 2014, used by permission. Klahhane Ridge is between Mt. Angeles and Rocky Peak, about 1 mile west of Mt. Angeles.

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