Keil, D.J. 2018. *Erigeron conditii* (Asteraceae), a new species from the Santa Lucia Range of central-western California. Phytoneuron 2018-79: 1–6. Published 5 November 2018. ISSN 2153 733X

ERIGERON CONDITII (ASTERACEAE), A NEW SPECIES FROM THE SANTA LUCIA RANGE OF CENTRAL-WESTERN CALIFORNIA

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ABSTRACT

Erigeron conditii D.J. Keil, **sp. nov.** (Asteraceae), is described from the San Carpoforo Creek Canyon of southwestern Monterey and northwestern San Luis Obispo counties, California. It is a member of the *Erigeron foliosus* complex and is disjunct from the taxa recognized in recent treatments as *E. foliosus* var. *mendocinus* and *E. foliosus* var. *hartwegii*, the complex members that it most closely resembles. **Erigeron mendocinensis** D.J. Keil, **nom. nov.**, is proposed as a replacement name at the species level for the illegitimate *E. mendocinus* Greene [=*E. foliosus* var. *mendocinus*].

In May 2004, as a part of a botanical survey, I observed what appeared to be an undescribed species of *Erigeron* L. (Asteraceae) in the San Carpoforo Creek Canyon in northwestern San Luis Obispo Co., California. Because of a confidentially agreement, I was unable to proceed with a formal description of the taxon. In September 2018, I discovered two early 1900s collections of this undescribed *Erigeron* in the University of California Herbarium, one from Monterey Co. and one from San Luis Obispo Co. (Figs. 1, 2). Investigation of these specimens led me to conclude that they are part of the *Erigeron foliosus* Nutt. complex and represent a previously undescribed species.

ERIGERON CONDITII D.J. Keil, **sp. nov.** **TYPE**: **USA**. **California**. Monterey Co.: San Carpojo [Carpoforo], coast, [ca. 35.798461°, -121.282496°], [ca. 215 m], Jun 1912, *I.J. Condit s.n.* (holotype: UC 195576).

Perennial herb from woody base, antrorsely strigillose ± throughout with acute-tipped, multicellular trichomes 0.2–0.3 mm long. Stems multiple, slender, 25–45 cm, simple or sparingly branched, leafy throughout, internodes along most of stem 2–10 mm long. Leaves linear, along most of stem 2.5–6 cm long, 0.7–1.7 mm wide, distally decreasing to linear bracts 2–20 mm long, 0.2–0.8 mm wide. Peduncles not much differentiated except by proximal increase in internode length and gradual decrease of leaves to bracts, trichomes just proximal to heads ascending to spreading. Involucre cup-shaped; phyllaries in 4 series, inner 2 series subequal, 5–6 mm long, 0.5–0.7 mm wide, linear-oblong, acute to acuminate, bodies green with paler marginal zone, narrowly scarious-margined, drying ± straw-colored with darker centers, outer series graduated, 1.5–4 mm long, narrower, linear-acuminate, without paler margin or this very narrow, phyllary bodies minutely puberulent with gland-tipped trichomes ± 0.05 mm long, at least outer phyllaries with appressed to ± ascending, acute-tipped trichomes 0.2–0.75 mm, phyllary midvein with narrow embedded resin gland, this drying golden-brown. Ray flowers 30–40; corollas purple, tubes 2.5–3 mm, puberulent with ascending, gland-tipped trichomes 0.1–0.2 mm long, rays spreading, 6.5–9.5 mm long, 0.8–1.5 mm wide, glabrous. Disk flowers ± 140; corollas yellow, 4–5 mm, tube and throat puberulent with ascending, gland-tipped trichomes ± 0.1 mm long. Achenes [immature] ± 1.5 mm, puberulent with ascending, apically forked trichomes ± 0.2 mm long, ribs 2, golden brown; pappus bristles ± 25, subequal, 4–5 mm long, outer pappus not differentiated.

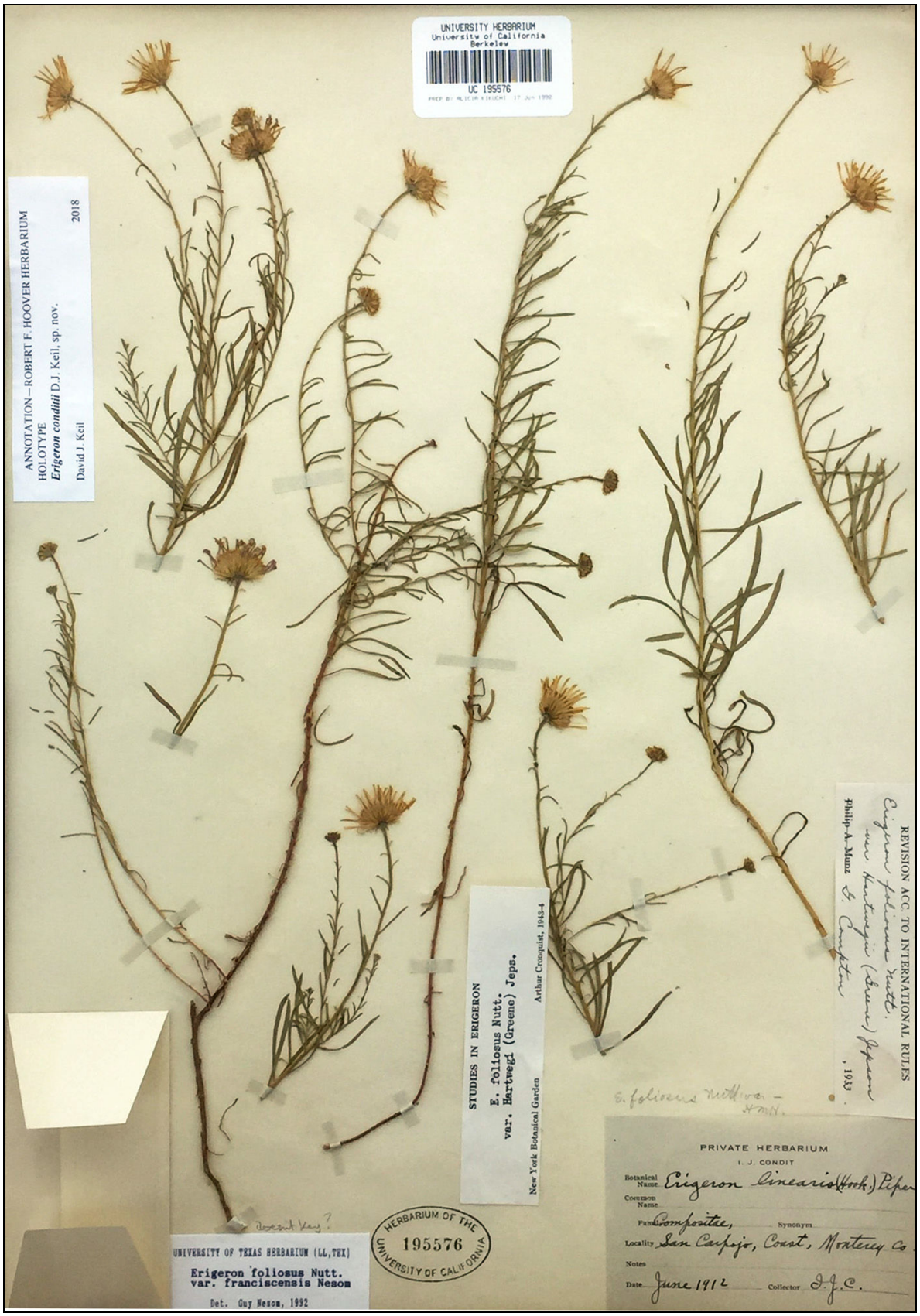

Figure 1. *Erigeron conditii*, holotype (UC 195576).

Figure 2. *Erigeron conditii*, paratype (*Unangst 901*, UC 146422).

Additional collection examined. **California**. San Luis Obispo Co.: San Carpojo [Carpoforo], in tufts, [ca. 35.771887°, -121.278480°], [60 m], 23 Jul 1908, *Unangst 901* (UC 146422).

Etymology. The new species is named in honor of Dr. Ira J. Condit (1883–1981), who was an instructor in botany and horticulture from 1907 to 1912 at the newly founded California Polytechnic School [now California Polytechnic State University] in San Luis Obispo, California. During his time at Cal Poly, he explored San Luis Obispo Co. and collected plant specimens, often accompanied by Judge E.P. Unangst (Condit 1967), and visited and collected in other parts of the state. He founded a short-lived California Polytechnic School Herbarium of about 4000 specimens, which was later incorporated into the University of California Herbarium (Condit 1967). Many of his collections in UC bear labels from the Cal Poly Herbarium [the type of *Erigeron conditii* is labeled as having come from his private herbarium]. Condit later taught horticulture at the University of California, where he earned a masters degree in 1928; he was awarded a Ph.D. from Stanford University in 1932. Dr. Condit researched and published on a number of subtropical fruit crops in California. He is best known for his research and numerous publications on the genus *Ficus* (Moraceae) (Condit 1967; Riverside Public Library 2006–2009; Wikipedia 2018).

Suggested common name. Condit's fleabane daisy.

Habitat. San Carpoforo Creek [known colloquially as San Carpojo Creek] originates in the Santa Lucia Range of southwestern Monterey Co. and flows into the Pacific Ocean in northwestern San Luis Obispo Co., just to the north of the coastal prominence called Ragged Point (south of the village of Ragged Point). The creek and its tributaries have carved canyons into the rugged western slopes of the Santa Lucia Range. Along some parts of the San Carpoforo Creek Canyon, a well-developed riparian corridor of deciduous and evergreen trees and shrubs borders the channel; in other areas the canyon cuts through exposed bedrock, and vegetation along the channel is sparse.

Specimen labels for the two early collections of *Erigeron conditii* lack habitat data. Access to San Carpoforo Canyon for Condit and Unganst would likely have been via the road to the Polar Star Mine, a complex of nine now-inactive mercury mines located about three miles up San Carpoforo Creek from the coast (Cambria Historical Society 2018; The Diggings 2018). The Polar Star Mine was intermittently productive from 1870 until the mid-20th century. Mining activities in the early 20th century would likely have resulted in considerable disturbance to the vegetation of the canyon.

The population that I observed in San Luis Obispo Co., upstream of the mine, consisted of scattered individuals growing in partial shade of riparian-corridor trees from cracks in a steep sandstone outcrop along the canyon wall at about 60 m elevation. Plants growing nearby included *Eriophyllum confertiflorum*, *Toxicodendron diversilobum*, and *Rubus ursinus*. The site in Monterey Co. where the type specimen was collected would be upstream of that site at a somewhat higher elevation; upper San Carpoforo Creek reaches an elevation of about 340 m. Additional populations are to be sought in similar habitats within the San Carpoforo Creek Canyon or nearby canyons.

Relationships. The holotype and paratype specimens have been annotated by different researchers as three different varieties of *Erigeron foliosus* or noted as having intermediate characteristics. The most recent determination, by Guy Nesom in 1992, is *E. foliosus* Nutt. var. *franciscensis* Nesom. However, a note in an unknown hand above Nesom's annotation label on the paratype sheet (*Unangst 901*) summarizes the problem: “doesn't key there.” With its combination of strigillose stems and leaves, narrowly linear leaves, strigillose and minutely, densely glandular-puberulent phyllaries, long ray corollas, and narrow resinous phyllary midribs, it doesn't key well to any of the varieties of *E. foliosus* in the keys of Nesom (1992, 1993, 2006) or Keil and Nesom (2012).

Various members of the *Erigeron foliosus* complex have been recognized at both the species and varietal ranks. Varietal rank was employed in recent treatments (Nesom 1992, 1993, 2006; Keil & Nesom 2012), but Guy Nesom (pers. comm. 2018) has expressed the opinion that "each of the 'vars.' of *E. foliosus* can justifiably be recognized as species—very little if any intermediacy among them, and each is essentially allopatric with all the others." *Erigeron foliosus* var. *foliosus* [*E. foliosus* sensu stricto] is the only other member of this complex that occurs in the central Santa Lucia Range. It differs from *E. conditii* in having a corymbiform capitulescence with usually more numerous heads, shorter involucres (3.2–4.5 vs. ± 6 mm), more strongly graduated phyllaries, and shorter ray corollas (6–10 vs. 9–12.5 mm). Leaves vary in shape from linear-oblong in forms on the coastal slope to linear-filiform in the interior [the latter recognized by some authors, but not by Nesom (1992), as *E. foliosus* var. *stenophyllus* (Nutt.) A. Gray]. In its general growth form and dimensions, *E. conditii* more closely resembles *E. foliosus* var. *mendocinus* G.L. Nesom of north-coastal California and *E. foliosus* var. *hartwegii* (Greene) Jeps. of the central and northern Sierra Nevada foothills. It is disjunct from both. It differs from *E. foliosus* var. *mendocinus* in having narrower leaves (0.7–1.7 vs. 2–4 mm wide), narrower phyllaries (0.5–0.7 vs. 0.8–1 mm), thick or only narrowly scarious vs. broadly scarious phyllary margins, and orange-resinous phyllary midribs. It differs from *E. foliosus* var. *hartwegii* in having leaves without a prominent unidirectional orientation vs. often mostly with orientation to one side of stems, leaf faces densely and uniformly strigillose vs. faces glabrate to sparsely strigose, abaxial phyllary surfaces densely and prominently glandular vs. glandless or sometimes sparsely and obscurely glandular, and phyllary midnerves narrowly orange-resinous vs. usually not distinct and orange-resinous.

My choice to treat Condit's fleabane daisy as a species necessitates a reevaluation of the taxonomic rank for the taxa recognized as varieties of *Erigeron foliosus* in recent treatments. Valid names are available at the species level for two of these: *E. confinis* Howell (=*E. foliosus* var. *confinis* (Howell) Jeps.), and *E. hartwegii* Greene (=*E. foliosus* var. *hartwegii*). However, *E. foliosus* var. *franciscensis* G.L. Nesom and *E. foliosus* var. *mendocinus* lack valid names at the species level. No species name has been proposed for var. *franciscensis* and, because of its marked similarity to var. *foliosus*, I am not proposing a name for it at the species level. I believe that further investigation of the relationship of var. *foliosus* to var. *franciscensis* is needed. The species name *Erigeron mendocinus* was proposed by Greene (1909), and Greene's publication was the basis for Nesom's (1992) recognition of var. *mendocinus*. However, Greene (1894) had earlier published the name *E. mendocinus* as a replacement for the illegitimate name of a South American *Erigeron*, and therefore, his 1909 *E. mendocinus* is a later homonym. Nesom's use of the epithet "mendocinus" at the varietal level is to be treated as a nomen novum rather than a new combination (Kanchi Gandhi, pers. comm.)—hence the citation of Nesom as author of var. *mendocinus* without Greene's name in parentheses. I am proposing the following as a replacement name at the species level for Greene's illegitimate 1909 *E. mendocinus*:

Erigeron mendocinensis D.J. Keil, **nom. nov.** *Erigeron mendocinus* Greene, Leafl. Bot. Observ. Crit. 2: 9. 1909, nom. illeg.

Etymology. The epithet "mendocinensis" is derived from the geographic name Mendocino, which is used for a cape, city, and county in California. Greene's (1909) epithet "mendocinus" was similarly derived—from Mendocino Co., where the type of his *Erigeron mendocinus* was collected. However, Greene's (1894) epithet "mendocinus" was derived from the city and province of Mendoza in Argentina.

Conservation assessment. *Erigeron conditii* is documented at present by just the two collections cited. The plants I observed in 2003 very likely represent the same population visited in 1908 by Judge Unganst. The status of the Monterey Co. population sampled by Condit is unknown. I observed only a few individuals and did not make an effort to assess the size and extent of the

population. It seems likely that additional populations may be present along San Carpoforo Creek or in nearby canyons. The topography in the area is rugged and in large part inaccessible; large areas are in private ownership with limited or no access. The San Luis Obispo County site for *E. conditii* is located along the portion of San Carpoforo Creek that traverses the northern portion of the Hearst Ranch a short distance north of the inactive Polar Star Mine. Portions of the San Carpoforo Canyon in Monterey Co. are within the Los Padres National Forest. Recognition of *E. conditii* as a rare and potentially endangered species seems warranted; I recommend it be considered by the California Native Plant Society for California Rare Plant Rank 1B.1. When evaluated using IUCN (2000) Red List criteria, *E. conditii* qualifies as Endangered (EN) — high risk of extinction in the wild, based on extent of occurrence estimated to be less than ~100 km².

ACKNOWLEDGEMENTS

I thank Guy Nesom, Bruce Baldwin, and John Strother for reviewing my manuscript and for their comments and suggestions.

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