

NEW TAXA AND COMBINATIONS IN WESTERN NORTH AMERICAN  
LILIACEAE

Dale W. McNeal

Department of Biological Sciences, University of the Pacific, Stockton,  
California 95211 U.S.A.

ABSTRACT

New combinations are validated for two taxa of Liliaceae in California and Oregon so that the names may be used in forthcoming publications. These include: *Allium bolanderi* S. Watson var. *mirabile* (L. Henderson) McNeal and *Zigadenus micranthus* Eastwood var. *fontanus* O. Welsh ex McNeal. In addition, *Allium peninsulare* Lemmon ex Greene var. *franciscanum* McNeal & Ownbey is described as new.

KEY WORDS: Taxonomy, Liliaceae, *Allium*, *Zigadenus*, California, Oregon

In the process of completing treatments of *Allium* and *Zigadenus* for the *Jepson Manual: Higher Plants of California*, it is necessary to make two new nomenclatural combinations. Each of the new combinations is formally made below with a discussion of the reasons for making them. In addition, *A. peninsulare* var. *franciscanum*, a distinct variety discovered several years ago by myself and Dr. Marion Ownbey but never validly published, is described here.

NEW COMBINATIONS

*Allium bolanderi* S. Watson var. *mirabile* (L. Henderson) McNeal, *stat. et comb. nov.* BASIONYM: *Allium mirabile* L. Henderson, *Rhodora* 32:22. 1930. TYPE: UNITED STATES. Oregon: Josephine Co.: Eight Dollar Mt., near Selma, 17 June 1926, L. Henderson 6098 (HOLOTYPE: ORE!; Isotypes: GH!, OSC!).

*Allium bolanderi* var. *mirabile* differs from the typical variety in its unique elongate, irregularly shaped bulbs which suggest small tubers; the typical variety has ovoid to subglobular bulbs. Variety *mirabile* also differs in its narrower perianth segments. Both varieties have a delicate, highly contorted bulb coat reticulation that is unique in the genus (Fig. 1). This reticulation pattern supports the conclusion of a close relationship between the two taxa. Because, presumably, the bulb shapes differ, the broken edge of the bulb coat in var. *bolanderi* tends to be sharply serrate and regular while that of var. *mirabile* is wavy and quite irregular.

*Allium bolanderi* var. *bolanderi* occurs on heavy clays, usually of serpentine origin, from Douglas and Josephine counties in southwest Oregon south in the coast ranges to Lake Co., California, with a disjunction on Mt. Hamilton in Santa Clara Co. Variety *mirabile* has been collected on similar habitats in Curry, Jackson, and Josephine counties in Oregon and south into Humboldt Co., California.

Representative Specimens: UNITED STATES. California: Humboldt Co.: Van Duzen River Valley, opposite Buck Mtn., June 27-July 30, *Tracy 2771* (UC). Siskiyou Co.: 2.5 mi. W. of Hilt, 16 May 1992, *McNeal 3910* (CPH). Trinity Co.: Mad River, 11 mi. SE. of Ruth. Oregon: Curry Co.: Rogue River Trail, 5 mi. E. of Illahe, 31 May 1947, *Baker 4400* (OSC). Douglas Co.: Glendale, 19 June 1902, *Jones s.n.* (DS). Jackson Co.: Eight Dollar Mtn., 18 June 1932, *Applegate 7308* (DS,GH,UC); Grants Pass, 17 May 1889, *Howell 1394* (ND).

**Zigadenus micranthus** var. **fontanus** (Eastwood) O.S. Walsh *ex* McNeal, *stat. et comb. nov.* BASIONYM: *Zigadenus fontanus* Eastw., *Leafl. West. Bot.* 2:41. 1937. TYPE: UNITED STATES. California, Marin Co.: Bootjack, Mt. Tamalpais, 7 June 1936, *J.T. Howell 12656* (HOLOTYPE: CAS!).

This combination was first proposed by O.S. Walsh in a Ph.D. thesis at the University of California, Berkeley (1940), but has never been validly published. Walsh demonstrated that varieties *micranthus* and *fontanus* were interfertile in reciprocal crosses. Seeds yielded a wide array of intermediate phenotypes. Variety *fontanus* is apparently a physiological variant adapted to vernal moist or saturated serpentine soils where the typical variety does not occur. It differs from var. *micranthus* in its larger size (stem 60-80 cm in variety *fontanus* vs. 15-50 for var. *micranthus*) and larger flowers and fruits. Further, variety *fontanus* has a paniculate inflorescence with the lowermost flowers of the lateral branches staminate while the typical variety is racemose or only rarely paniculate and then all flowers are perfect. In var. *fontanus* the stamens are subequal.

Generally, *Zigadenus micranthus* var. *fontanus* is confined to vernal wet areas and marshes from Mendocino Co., California south to Santa Cruz Co. A

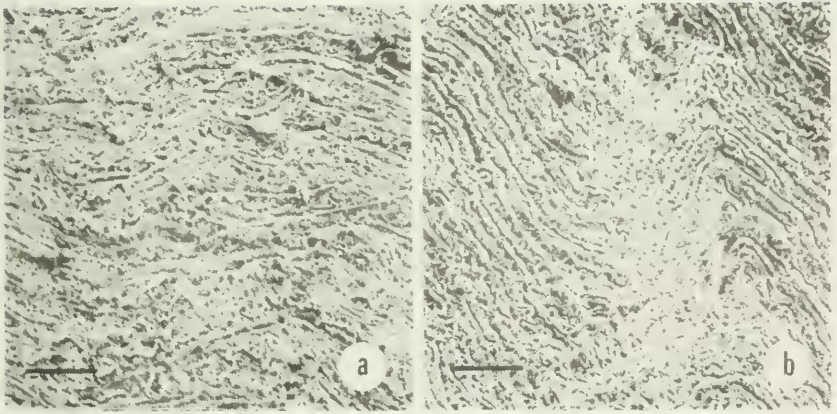


Fig. 1. Bulbcoat reticulation patterns in *Allium bolanderi* - a. var. *mirabile*. b. var. *bolanderi*. Scale = 100  $\mu$ m.

single disjunct population is apparently found at the Pinnacles in San Benito Co.

Representative Specimens: UNITED STATES. California: Marin Co.: Lake Lagunitas, 11 May 1918, *Eastwood s.n.*; Little Carson Falls, 26 May 1940, *Howell 15532* (CAS). Mendocino Co.: Near Comptche, 14 May 1939, *Constance 2516* (CAS,UC). San Benito Co.: The Pinnacles, 3 May 1937, *Eastwood & Howell 4221* (CAS). Santa Cruz Co.: New Almaden Trail from Loma Prieta, 22 July 1893, *Liethold* (CAS). Sonoma Co.: Pitkin Marsh, 3 July 1938, *Howell 13961* (CAS).

### NEW TAXON

*Allium peninsulare* Lemmon ex Greene var. *franciscanum* McNeal & Ownbey, var. nov. TYPE: UNITED STATES. California: San Mateo Co., Jasper Ridge Experimental Area (Grown at Pullman, Washington), June 1968, *Raven s.n.* (HOLOTYPE: WS!).

Folia 2-4, curvata ad arcuata; segmenta perianthii exterior erecta, expansa ad apices, 8-12 mm longa; stigma capitatum, vix incrassatum, integrum vel minute trilobum.

Variety *franciscanum* appears to be intermediate between var. *peninsulare* and *Allium dichlamydeum* E. Greene. *Allium dichlamydeum* is a very succulent species with erect pedicels, 3-6 arcuate to tortuous leaves per bulb and a capitate or obscurely 3 lobed stigma, it is found on the sea cliffs or open slopes above them from San Mateo Co., California to central Mendocino Co. Variety *peninsulare* is non succulent with spreading pedicels, 2 straight or nearly straight leaves per bulb and a trifold or distinctly 3 lobed stigma, it is widespread in the interior valleys and foothills from Butte Co. to northern Baja California. *Allium peninsulare* var. *franciscanum* is also non succulent with spreading pedicels, but has 3-4 arcuate leaves per scape and a capitate or obscurely 3 lobed stigma, it is found in dryer upland environments on the San Francisco Peninsula and at a few locations around the north end of San Francisco Bay. The distribution of var. *franciscanum* falls between and does not overlap with either var. *peninsulare* or *A. dichlamydeum*.

Variety *franciscanum* occurs on clay soils including serpentine in San Mateo and Santa Clara counties, California, and at the north end of San Francisco Bay in Sonoma Co.

Representative Specimens: UNITED STATES. California: San Mateo Co., Woodside, 4 May 1902, *Abrams 2411* (DS,NY); Jct. of Polhemus and Crystal Springs Rd., ca. 4 km W. of San Mateo, 13 May 1963, *Breedlove 4942* (CAS,JEPS,RSA,WS); Jasper Ridge near Sand Hill Caves, 13 May 1921, *Mason s.n.* (POM,WTU). Santa Clara Co.: Page Mill Creek. above Stanford U.,

9 May 1895, *Applegate 720* (DS). Sonoma Co.: Wood Rd., Hope Valley, SW of Kenwood, 1 May 1950, *Baker 12222* (RSA,UC); Petaluma, 2 June 1880, *Congdon s.n.* (UC).

## LITERATURE CITED

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