

CALIFORNIA

SCHIZYMENIA DUBYI (Chauvin ex Duby) J. Agardh 1851: 171 (SCHIZYMENIACEAE).—Monterey Co., attached to floating docks Monterey Marina, Monterey Harbor, Monterey. 36°36'07"N, 121°53'25"W. Thalli cystocarpic and sterile (13 September 2006 (UC 1934344), 15 July 2007 (UC 1934344), 8 November 2007 (UC 1934345), 6 March 2008 (UC 1934346), *J. R. Hughey*).

Previous knowledge. Native to Europe, Africa, Asia, New Zealand, and Australia (M. D. Guiry and G. M. Guiry, *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. <http://www.algaebase.org>; searched on 24 May 2008). Type locality: Cherbourg, Manche, France (P. C. Silva, P. W. Basson & R. L. Moe, Catalogue of the Benthic Marine Algae of the Indian Ocean, 1996: 323). First reported from Pacific North America based on material from Esquimalt, British Columbia (W. H. Harvey 1862, Journal of the Linnean Society of London: Botany 6: 174). Citing Harvey, W. A. Setchell and N. L. Gardner (1903, University of California Publications Botany 1:356) included *S. dubyi* in their list of algae from northwestern America. They admitted however "we know nothing of this plant, but suspect that we may have included it under *Sarcophyllis californica*." [*Dilsea californica* (J. Agardh) Kuntze 1891: 892]. Y. Yamada (1928, Scientific Reports of the Tohoku Imperial University, Biology 3:497–534) reported *S. dubyi* from Japan, but it was later removed from the flora by I. A. Abbott (1967, Bulletin of the Southern California Academy of Sciences 66:162) who treated Japanese specimens as conspecific with *Schizymenia pacifica* (Kyllin) Kyllin 1932: 10. Based on a recent phylogenetic analysis of the large subunit of ribulose-1, 5-biphosphate carboxylase/oxygenase gene (*rbcL*), Gavio et al. (2005, Gulf of Mexico Science 83:38–57) demonstrated that *S. dubyi* from Japan is conspecific with *S. dubyi* from the Atlantic ocean, but different from *S. pacifica* from the northeastern Pacific. However, the two earlier reports of *S. dubyi* from the eastern Pacific have gone without comment by later workers.

Significance. Previously misidentified specimens (as *S. pacifica*) include: 26 May 1978, *R. Setzer* (AHF 84371 in UC); 14 July 1977, *I. A. Abbott* (GMS 13296); 24 May 1974, *I. A. Abbott* (GMS 13187); 17 June 1972, *I. A. Abbott* (GMS 11395); 8 May 1970, *L. A. Midon & J. N. Norris* (AHF 80259 in UC); 24 June 1966, *N. L. Nicholson* (GMS 2121 & 2122). *Schizymenia dubyi* also occurs in Ventura Co. just east of Carpinteria (13 January 1957, *E. Y. Dawson*, AHF 63782 in UC) and in Los Angeles Co. in the upper mid-littoral at Royal Palms (26 June 1972, *R. Setzer* (AHF 78717 in UC); 8 March 1972, *R. Setzer* (AHF 77975 in UC)). Mature thalli of *S. dubyi* can usually be distinguished from *S. pacifica* by their darker color (maroon rather than brown-pink), ruffled margins, longer stipe (3 mm vs. 1 mm or lacking), and ostioles that are approximately twice as large (45–60 µm) as those found in *S. pacifica* (25–40 µm). Our identification was confirmed by analyzing *rbcL* gene sequences following the methods described by J. R. Hughey et al. (2008, Phycologia 47:124–155). Two specimens were analyzed and found to be identical in sequence (GenBank FJ013041 & FJ013042), but differed from *S. dubyi* from Brittany, France (AY294389) and Iwateken, Japan (AY294388) by 5 nucleotides. In comparison, an *rbcL* sequence of *S.*

pacifica from Washington (AY294393) differed from *S. dubyi* by 69 nucleotides. These data confirm the presence of *S. dubyi* in California, but highlight the need for further investigations into the life history and taxonomy of species of *Schizymenia* in the northeast Pacific.

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COTONEASTER HORIZONTALIS Decne. (ROSA-CEAE).—Del Norte Co., pasture edge, 3 air km N of Lake Earl, elev. 8 m, 18 Jul 2007, *Zika 23166* (CAS, DAO, GH, HSC, OSC, RSA, UC, WTU).

Previous knowledge. Wall cotoneaster is recorded as a garden escape on the coast of Oregon, Washington and British Columbia, so wild plants on the north coast of California were expected. It is a low shrub readily distinguished from all other wild deciduous *Cotoneaster* in California by the small leaves, less than 2 cm long and less than 1 cm wide. It is recognizable at a distance by the strongly planar branching in a herringbone pattern.

Significance. First collection for California as an escape from cultivation.

COTONEASTER FRIGIDUS Wall. ex Lindl. (ROSA-CEAE).—Alameda Co., below Engineers Road, Strawberry Canyon, Berkeley, 27 Sep 1934, *C. M. Belshaw 199* (UC).

Previous knowledge. Tree cotoneaster is uncommon in cultivation in North America, but is a common escape from gardens in the British Isles (Stace, in New Flora of the British Isles, 2nd edition, Cambridge University Press, Cambridge, UK, 1997). Hrusa et al. (Madroño 49:61–98, 2002) were presumably including this databased specimen, which was labeled *Cotoneaster lacteus* W. W. Sm., when they said *C. lacteus* was: "noted elsewhere in the east San Francisco Bay Area." The two can be separated by their foliage in the following key.

- 1a. Leaves thin, deciduous, often 10–15 cm long; veins superficial *C. frigidus*
- 1b. Leaves thick, evergreen, less than 10 cm long; veins sunken. *C. lacteus*

Significance. First collection for California as an escape from cultivation.

PRUNUS SPECIOSA (Koidz.) Nakai (ROSACEAE).—Alameda Co., Strawberry Canyon E of UC-Berkeley campus, wooded area at base of fire trail behind UC Botanical Garden, 15 Apr 1999, *B. Erter 16502* (UC); shady riparian of Strawberry Creek, near Hamilton Gulch, Strawberry Canyon, elev. 230 m, 19 Mar 2007, *Zika 22924* (DAO, NY, RSA, UC, UWEC, WTU).

Previous knowledge. *Prunus speciosa* (syn. *Cerasus speciosa* (Koidz.) H. Ohba, *Prunus lannesiana* (Carrière) E. H. Wilson forma *albida* (Makino) E. H. Wilson) is known as Oshima cherry, and is endemic to Japan (Chang et al., in Botanical Journal of the Linnean Society 154:35–54, 2007). It is cultivated on the Pacific

Coast as an ornamental, but much less commonly than garden hybrids derived from it. This population was reported as *Prunus serrulata* Lindl. of China (syn. *Cerasus serrulata* (Lindl.) Loudon) in Hrusa et al. (loc. cit.). *Prunus speciosa* has leaf teeth with glandular tips and glandular-serrate sepals, while *P. serrulata* has leaf teeth without glands and entire sepal margins. *Prunus speciosa* is also known as an escape in Orange Co., North Carolina (*Weakley s.n.* NCU).

Significance. First report as an escape from cultivation in California.

PRUNUS × *YEDOENSIS* Matsum. (ROSACEAE).—San Francisco Co., city of San Francisco, adventive tree 4 m tall, Golden Gate Park, elev. 75 m, 22 Mar 2007, *Zika* 22931 (NY, UC, UWEC, WTU).

Previous knowledge. *Prunus* × *yedoensis*, yoshino cherry, is traditionally considered to be a hybrid between *P. subhirtella* Miq. and *P. speciosa* derived and grown in Japan in the 1800's (Rehder, Manual of Cultivated Trees and Shrubs Hardy in North America, MacMillan Co., New York, 1927), and the protologue suggests the type was cultivated (Japan: in hortis Tokyoensibus ample culta). Recently classified at the rank of species, with no mention of hybridity or parentage, by Ohba (in Iwatsuki et al., eds., Flora of Japan, Volume IIb, Kodansha Ltd., Tokyo, 2001) and also by Chaoluan and Bartholomew (Flora of China 9:404–420. 2003). Those authors treat it in the genus *Cerasus*, as *C. yedoensis* (Matsum.) A. N. Vassiljeva, but we prefer to treat *Cerasus* as a subgenus of *Prunus* (Jacobson and Zika, *Madroño* 54:74–85. 2007). *Prunus* × *yedoensis* is a commonly planted ornamental in North America. Chaoluan and Bartholomew (loc. cit.) say it is native to Japan and Korea (Cheju Island), but do not provide supporting details, and possibly they are referring to naturalized plants spread from cultivation. Garden plants produce viable seed, and yoshino cherry has been collected escaped from cultivation in Washington.

Significance. First report as an escape from cultivation in California.

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JUNCUS FALCATUS E. MEY. SUBSP. *SITCHENSIS* (BUCHENAU) HULTÉN (JUNCACEAE).—Del Norte Co., near lagoon, Crescent City, 1899, *W. R. Dudley s.n.* (DS); Humboldt Co., 0.5 mi SW of Samoa; 16 Jun 1936, *H. S. Yates* 5654 (RSA, UC); wet places near the shore, Stone Lagoon, 3 Aug 1924, *J. P. Tracy* & *H. E. Parks* 6746 (UC); Big Lagoon, 18 Oct 1925, *J. P. Tracy* 7290 (UC); low flats in sand dunes, ocean beach at N end of Humboldt Bay, 13 Oct 1930, *J. P. Tracy* 9218 (UC); sand dunes, Samoa Peninsula, 7 Aug 1965, *R. F. Thorne* 35223 & *P. Everett* (BM, CAS, RSA).

Previous knowledge. Mapped in Alaska, British Columbia and Oregon by Brooks (*Juncus* subg. *Graminifolii*, in Flora of North America 22: 228. 2000). Kirschner et al. (*Juncus* subg. *Juncus* sect. *Graminifolii*, in Species Plantarum: Flora of the World 7:49–50. 2002) cited specimens as far south as Coos Co., Oregon, while

noting reports from Asia or Japan refer to the related Asian species *J. prominens* (Buchenau) Miyabe & Kudô. All *Juncus falcatus* records in California were assigned to subsp. *falcatus* (as var. *falcatus*) by Swab (*Juncus*, pp. 1157–1165, in J. C. Hickman (ed.), The Jepson Manual, University of California Press, Berkeley, CA. 1993). *Juncus falcatus* subsp. *falcatus* is native to Australia as well as California, where it is restricted to the south coast (SCo) and central coast (CCo) geographic subdivisions. California plants can be divided into two subspecies using the following key.

- 1a. Inner tepals (petals) blunt or hooded, usually less than 4.5 mm long; anthers less than 1.7 mm long; fruit apex notched, conspicuous and roughly equaling the tepals, often globose to broadly elliptic; NCo subsp. *sitchensis*
- 1b. Inner tepals acuminate, usually more than 5 mm long; anthers usually more than 1.7 mm long; fruit apex usually acute to truncate, inconspicuous and much shorter than the tepals, usually elliptic to oblong; CCo, SCo. subsp. *falcatus*

Significance. First report for California. The plants are variable in size, and usually sort well into the two subspecies, but a few central California specimens show some transitions, and the rank of subspecies seems more appropriate than species for the two taxa. The relationship of Californian and Australian representatives deserves investigation; southern hemisphere specimens are traditionally called subsp. *falcatus* but may more closely approach subsp. *sitchensis* in some morphological characters.

JUNCUS INTERIOR WIEGAND (JUNCACEAE).—San Bernardino Co., granitic sand, Fourth of July Canyon, W New York Mountains, 1845 m, 4 Jun 1973, *J. Henrickson* 10551 (RSA); same canyon, 1829 m, 30 Aug 1973, *J. Henrickson* 12703 (RSA).

Previous knowledge. Interior rush was mapped from Ohio west to Saskatchewan, Wyoming and New Mexico by Brooks (*Juncus* subg. *Poiphylli*, in Flora of North America 22:228. 2000). Kirschner et al. (*Juncus* subg. *Agathyron* sect. *Steirochloa*, in Species Plantarum: Flora of the World 8:17–57. 2002) expanded the range west to include Utah and Arizona. Kartesz (Synthesis of the North American Flora, Version 2.0, CD Rom. 2003) shows herbarium records as far west as Mohave Co., Arizona, adjacent to San Bernardino Co., California.

Juncus interior often has a pinkish base to the rather tall stems, but otherwise closely resembles *J. tenuis* Willd., which has shorter stems only rarely pinkish instead of green at the base. *Juncus tenuis* is a common species on damp disturbed ground on the Pacific Coast. The two can be distinguished by the following key.

- 1a. Auricles of early season shoots acuminate (rarely acute), uniformly pale or translucent, 1–8 mm long; stem with 0–1 strong longitudinal ridges visible on one side; bracteoles subtending flowers acute to blunt. *J. tenuis*
- 1b. Auricles of early season shoots rounded (rarely acute), usually opaque and with the marginal (outer) half thinner textured than the basal (inner) portion, 0.2–0.6 mm long in CA collections; stem with 4–6 strong longitudinal ridges visible on one side; bracteoles subtending flowers acuminate, usually aristate. *J. interior*