

2007

Ranunculus arvensis (Ranunculaceae), an Alien Weed New to Southern California

Richard E. Riefner Jr

Rancho Santa Ana Botanic Garden, Claremont, California

Steve Boyd

Rancho Santa Ana Botanic Garden, Claremont, California

Follow this and additional works at: <http://scholarship.claremont.edu/aliso>



Part of the [Biodiversity Commons](#), and the [Botany Commons](#)

Recommended Citation

Riefner, Richard E. Jr and Boyd, Steve (2007) "Ranunculus arvensis (Ranunculaceae), an Alien Weed New to Southern California," *Aliso: A Journal of Systematic and Evolutionary Botany*: Vol. 24: Iss. 1, Article 4.
Available at: <http://scholarship.claremont.edu/aliso/vol24/iss1/4>

RANUNCULUS ARVENSIS (RANUNCULACEAE), AN ALIEN WEED NEW TO
SOUTHERN CALIFORNIA

RICHARD E. RIEFNER, JR.^{1,3} AND STEVE BOYD²

¹Research Associate and ²Herbarium, Rancho Santa Ana Botanic Garden, 1500 North College Avenue,
Claremont, California 91711, USA

³Corresponding author (rriefner@earthlink.net)

ABSTRACT

We report the first known records of *Ranunculus arvensis* from southern California. This alien species shows a tendency to behave as a facultative wetland plant, and could become a pest in scoured washes and flood plains, ephemeral pools, and on disturbed stream banks in the coastal lowlands.

Key words: facultative wetland species, invasive weed, Ranunculaceae, *Ranunculus arvensis*, southern California.

INTRODUCTION

Ranunculus arvensis L. (corn buttercup, field buttercup, or hungerweed), native to Eurasia, is a weed of fields, grasslands, ephemeral pools, waste places, and ditches, mostly at sites less than 1200 m in elevation (Wilken 1993; Whittemore 1997). In North America, it has been documented from Washington, Oregon, Idaho, Utah, and California eastward to the eastern United States (Abrams 1944; Muenscher 1980; Wilken 1993; Whittemore 1997). Within California, *R. arvensis* has been documented from the Klamath and Cascade Ranges south into the foothills of the Sierra Nevada and the outer South Coast Ranges (Wilken 1993). *Ranunculus arvensis* has not been reported previously from southern California (i.e., Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura counties) in treatments of the Ranunculaceae in major floristic accounts of California (Abrams 1944; Munz and Keck 1959; Munz 1974; Wilken 1993; Whittemore 1997), in treatments of non-native plants in California (Hrusa et al. 2002), or in numerous recent local floras covering the south coast region of southern California, including the Santa Ana Mountains (Boyd et al. 1995; Boyd 2001), Santa Monica Mountains (Wishner 1997–1998, 2000, 2002), Los Angeles County (Ross 1996; Mattoni and Longcore 1997; Boyd 1999; Schneider-Ljubenkov and Ross 2001), Orange County (Roberts 1998; Bowler and Bramlet 2002; Bowler and Elvin 2003), Riverside County (Roberts et al. 2004), San Diego County (Rebman and Simpson 2006), and Santa Barbara County (Pyke et al. 2003). Herein, we report the first known records of *Ranunculus arvensis* from southern California.

SPECIMENS SEEN

Ranunculus arvensis L. (Ranunculaceae), Orange Co., uncommon, wet ditch around horse corral at Santiago Equestrian Center,

Santiago Canyon Rd., N 50 m from Ridgeline Rd., UTM 11S 0441558E 3728472N (NAD 83), 392 m elevation (1286 ft), *Riefner 00-166*, 2 Apr 2000 (RSA); uncommon, horse corral ditch and cobble-strewn wash of Trabuco Creek, vicinity of Trabuco Canyon Rd. and Rose Canyon Rd., UTM 11S 0445503E 3724529N (NAD 83), 312 m elevation (1025 ft), *Riefner 00-412*, 2 May 2000 (RSA).

Ranunculus arvensis, an annual or biennial, is a distinctive species with linear stem leaves and spatulate basal leaves, and is easily separated from all other buttercups in southern California by the conspicuous spines on the keel of its fruits; see the illustrations in Abrams (1944) or Wilken (1993). *Ranunculus muricatus* L. (prickle-fruited buttercup), also an annual or biennial, is similar, but its fruits are larger and lack the spiny keel (Wilken 1993).

In the southeastern states, *R. arvensis* is an especially troublesome invasive weed in disturbed sites such as agricultural cornfields, hence the common name corn buttercup (Southern Weed Science Society 1998). It is not, however, considered noxious in North America (Rice 2004). Accordingly, the latitudinal range of a species, and whether it is invasive elsewhere, have high predictive value in determining the ability of a plant to invade a particular region once introduced to it (Reichard and Hamilton 1997). *Ranunculus arvensis* is not known to be an aggressive invader of natural communities within its known range in California (Bossard et al. 2000). Therefore, it seems unlikely that corn buttercup will aggressively disrupt natural habitat functions and displace native species in the southern portion of the State. However, the plant shows a tendency to behave as a facultative wetland species throughout most of its range in the United States, including a NI status (no facultative indicator recorded due to insufficient information) in California and the Northeast, an obligate upland (UPL) indicator status (a plant that occurs in wetlands in other regions, but almost always [estimated probability >99%] occurs in non-wetlands) in the Northwest region, a facultative upland (FACU) indicator status (a plant that usually occurs in non-wetlands [estimated probability

66–99%], but occasionally may be found in wetlands [estimated probability 1–33%]) in the Central Plains and Intermountain regions, and a facultative (FAC) indicator status (a plant equally likely to occur in wetlands or non-wetlands [estimated probability 34–66%]) in the Southeast and North Central regions (Reed 1988). Therefore, it could become a pest in irrigated croplands and drainage ditches at agricultural or urban sites, and disturbed stream banks, scoured washes, ephemeral pools, and flood plains in native habitats in the coastal lowlands. Because the spiny fruit of *R. arvensis* can easily cling to animal fur and produce large numbers of seeds, we are likely to see additional southern Californian records for the species soon.

LITERATURE CITED

- ABRAMS, L. 1944. Illustrated flora of the Pacific States, vol. II. Stanford University Press, Stanford, California, USA. 635 p.
- BOSSARD, C. C., J. M. RANDALL, AND M. C. HOSHOVESKY. 2000. Invasive plants of California's wildlands. University of California Press, Berkeley, USA. 360 p.
- BOYD, S. 1999. Vascular flora of the Liebre Mountains, Western Transverse Ranges, California. *Aliso* **18**: 93–139.
- . 2001. Additions to the vascular flora of the Santa Ana Mountains, California. *Aliso* **20**: 43–44.
- , T. ROSS, AND F. M. ROBERTS. 1995. Additions to the vascular flora of the Santa Ana Mountains, California. *Aliso* **14**: 105–108.
- BOWLER, P. AND D. E. BRAMLET. 2002. Vascular plants of the University of California, Irvine Ecological Preserve. *Crossosoma* **28**: 27–49.
- AND M. ELVIN. 2003. The vascular plant checklist for the University of California Natural Reserve System's San Joaquin Freshwater Marsh Reserve. *Crossosoma* **29**: 45–66.
- HRUSA, F., B. ERTTER, A. SANDERS, G. LEPPIG, AND E. DEAN. 2002. Catalogue of non-native vascular plants occurring spontaneously in California beyond those addressed in The Jepson Manual. Part I. *Madroño* **46**: 61–98.
- MATTONI, R. AND T. R. LONGCORE. 1997. The Los Angeles coastal prairie, a vanished community. *Crossosoma* **23**: 71–102.
- MUENSCHER, W. C. 1980. Weeds, 2nd ed. Cornell Univ. Press, Ithaca, New York, USA. 612 p.
- MUNZ, P. A. 1974. A flora of southern California. University of California Press, Berkeley, USA. 1086 p.
- AND D. D. KECK. 1959. A California flora and supplement. University of California Press, Berkeley, USA. 1681 p. + 224 p.
- PYKE, C. R., B. BIERWAGEN, M. DE LA GARZA, C. WILD, J. HARRIS, AND J. MERRICK. 2003. Floristic analysis of an interior vernal pond complex, Santa Barbara County, California. *Madroño* **50**: 147–161.
- REBMAN, J. P. AND M. G. SIMPSON. 2006. Checklist of the vascular plants of San Diego County, 4th ed. San Diego Natural History Museum, San Diego, California, USA. 100 p.
- REED, P. B., JR. 1988. National list of plant species that occur in wetlands: national summary. Biological Report 88 [24], US Department of the Interior, US Fish and Wildlife Service, Washington, D.C., USA. 244 p.
- REICHARD, S. H. AND C. W. HAMILTON. 1997. Predicting invasions of woody plants introduced into North America. *Conservation Biol.* **11**: 193–203.
- RICE, P. 2004. Invaders database system. Division of Biological Sciences, University of Montana, Missoula, Montana, www.invader.dbs.umt.edu (Sep 2004).
- ROBERTS, F. M., JR. 1998. A checklist of the vascular plants of Orange County, California, 2nd ed. F. M. Roberts Publications, Encinitas, California, USA. 96 p.
- , S. D. WHITE, A. C. SANDERS, D. E. BRAMLET, AND S. BOYD. 2004. The vascular plants of western Riverside County, California: an annotated checklist. F. M. Roberts Publications, San Luis Rey, California, USA. 192 p.
- ROSS, T. S. 1996. Additions to the flora of mainland Los Angeles County, California. *Crossosoma* **22**: 77–94.
- SCHNEIDER-LJUBENKOV, J. A. AND T. S. ROSS. 2001. An annotated checklist of the vascular plants of the Whittier Hills, Los Angeles County, California. *Crossosoma* **27**: 1–23.
- SOUTHERN WEED SCIENCE SOCIETY. 1998. Weeds of the United States and Canada. Southern Weed Science Society, Champaign, Illinois, USA. CD-ROM.
- WILKEN, D. A. 1993. *Ranunculus*, pp. 923–928. In J. C. Hickman [ed.], The Jepson Manual: higher plants of California. University of California Press, Berkeley, USA. 1400 p.
- WISHNER, C. 1997. Flora of the Santa Monica Mountains: synonymized checklist and index. *Crossosoma* **23**: 3–63.
- . 1998. Addendum: flora of the Santa Monica Mountains: synonymized checklist and index. *Crossosoma* **24**: 111–112.
- . 2000. Addendum II: flora of the Santa Monica Mountains, Los Angeles and Ventura counties: synonymized checklist and index. *Crossosoma* **26**: 13–14.
- . 2002. Addendum III: flora of the Santa Monica Mountains, Los Angeles and Ventura counties: checklist and index. *Crossosoma* **28**: 14.
- WHITTEMORE, A. T. 1997. *Ranunculus*, pp. 88–135. In Flora of North America Editorial Committee [eds.], Flora of North America, vol. 3, Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, New York, USA. 616 p.