Centranthus ruber

Red valerian
Valerianaceae

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OVERVIEW

Centranthus ruber, native to the Mediterranean region, is widely cultivated as an ornamental landscape plant throughout the world (Wagner et al. 1999). Numerous red, pink, and / or white funnel shaped flowers are born on erect stems, are attractive to insects and bees, and self seed, becoming naturalized where they are planted (Brickell and Zuk 1997). *C. ruber* is not reported as a major pest anywhere, though it is known to be weedy in gardens. In Hawai'i, *C. ruber* is known only from one location on Maui, Pohakuokala gulch, East Maui, where it is naturalized and common in the gulch area around 5,000 ft (1,524 m) elevation. *C. ruber* was first collected in 1982 (*Medeiros 8*, BISH) (Wagner et al. 1999). It is not known how invasive this species will become in Hawai'i in the future.

TAXONOMY

Family: Valerianaceae (Valerian family) (Wagner et al. 1999).
Latin name: *Centranthus ruber* (L.) DC (Wagner et al. 1999).
Synonyms: *Valeriana ruber* L. (Wagner et al. 1999).
Common names: Red valerian, Jupiter's beard, keys of heaven (Brickell and Zuk 1997).
Taxonomic notes: *Centranthus* is a genus of eight to twelve species primarily of the Mediterranean region, from Southern Europe and North Africa to Turkey (Wagner et al. 1999). Several forms of *C. ruber* are cultivated, including form 'albus', a compact and bushy shrub with dense white flower clusters along the stems, form 'coccineus', with larger, carmine-red to deep crimson flowers, and form 'roseus', which bears rose-pink flowers (Brickell and Zuk 1997). The plants on Maui are referred to as subsp. *ruber* and have white flowers (Wagner et. al 1999).
Nomenclature: The genus name, *Centranthus*, is derived from the Greek word, *kentron*, meaning prickle or spur, and *anthos*, meaning flower, in reference to the spurred flowers in species of this genus (Wagner et al. 1999).
Related species in Hawai'i: No other *Centranthus* species occur in Hawai'i. There are no other plants in the family Valerianaceae known from Hawai'i currently.

DESCRIPTION

"Glabrous and +- glaucous, rhizomatous perennial herbs; stems ascending, 3-8 dm long, usually branched. Leaves lanceolate to ovate or broadly ovate, 3-8(-12) long, (0.5-)1-5(-6) cm wide, entire or the uppermost occasionally irregularly dentate, sessile and amplexicaul. Flowers numerous, crowded in usually oblong, cymose inflorescences;

corolla red, pink, or white, the tube (5-)7-11 mm long, with a basal spur (2-)5-12 mm long. Fruit 3-4 mm long, ribbed." (Wagner et al. 1999).

BIOLOGY & ECOLOGY

Cultivation: *C. ruber* is commonly planted in borders, on walls, and on stony banks (Brickell and Zuk 1997). In the United States, plants grow less vigorously in hot and humid summers of the south than in cool summer climates (Missouri Botanical Garden 2002). *C. ruber* grows in well-drained, poor to moderately fertile, preferably alkaline soil in full sun (Brickell and Zuk 1997). They also recommend deadheading and replacing every 3 or 4 years.

Invasiveness: *C. ruber* freely sets seeds and often naturalizes where it is planted (Brickell and Zuk 1997, Wagner et al. 1999). According to the Missouri Botanical Garden (2002), *C. ruber* is invasive in parts of the west coast of the United States where it "freely self-seeds in optimum growing conditions to the point of being invasive and weedy". Others (Falcon 2002) also report *C. ruber* as potentially invasive in the garden. The John Muir National Historic Site landscape management plan reports *C. ruber* as "a rank, invasive weed, but showy" and removed it in 1997 from the area. In 1999, the California Exotic Pest Plant Council considered *C. ruber* for inclusion in their list of pest plants with greatest ecological threat to wild land areas. It was recorded as a weed in road cuts in Marin County, though it was eventually not included in the list and deemed not to be a threat to wild land areas (CalEPPC 1999). In Hawai'i, *C. ruber* is known from one infestation on Maui in Pohakuokala Gulch, near 5,000 ft (1,524 m) elevation. *C. ruber* likely competes with native plants also located in the area of infestation. It is not known how the *C. ruber* got there. It is also not known how far plants will spread or how invasive it will become in the future. If plants spread higher in elevation towards Haleakala National Park or towards native rain forests, it could become a higher priority.

Pollination: Brickell and Zuk (1997) report that *C. ruber* is attractive to bees and other insects.

Propagation: *C. ruber* can be propagated from seeds or root divisions (Brickell and Zuk 1997).

Dispersal: It is not known how seed is dispersed, however, on Maui, plants seem to be germinating nearby parent plants.

Pests and Diseases: *C. ruber* has very few pests and diseases (Brickell and Zuk 1997).

DISTRIBUTION

Native range: *C. ruber* is native to the Mediterranean region (Brickell and Zuk 1997, Wagner et al. 1999).

Global distribution: *C. ruber* is widely cultivated throughout the world and often naturalized (Wagner et al. 1999).

State of Hawai'i distribution: *C. ruber* is known only from Pohakuokala Gulch, East Maui (Wagner et al. 1999).

Island of Maui distribution: *C. ruber* is located in Pohakuokala Gulch, East Maui, near 5,000 ft (1,524 m) elevation. In this area, the climate is mild and cool throughout the year. Average annual rainfall in the area is 40-60 in (Juvik and Juvik 1998). *C. ruber* grows to medium sized shrubs within the gulch. The gulch is surrounded by cattle pastures and no plants are found far from the gulch. The upper and lower extent of the infestation is not well defined and needs more investigation.

CONTROL METHODS

Physical control: Control methods have not been tested for *C. ruber* on Maui. It is likely that small seedlings can be hand pulled and small plants grubbed out.

Chemical control: Not certain, though it is likely that larger plants may be chemically treated using the cut stump or basal bark method.

Biological control: There are no known biological control agents for *C. ruber*.

Cultural control: The public could be informed not to grow *C. ruber* or other plants that may escape the garden and become invasive. The Missouri Botanical Garden (2002) recommends promptly removing spent flower stems to encourage additional blooms, as well as to prevent seeds from forming.

Noxious weed acts: None known.

MANAGEMENT RECOMMENDATIONS

C. ruber is known from a single location in Pohakuokala Gulch, East Maui, near 5,000 ft (1,524 m) elevation. Though known to freely set seed and naturalize where planted, *C. ruber* is so far reported as a minor weed. On Maui, it is not known how invasive this plant will become. The upper and lower extent of the infestation is not well defined and could use more extensive surveying. Future monitoring is recommended due to the close proximity to native wet forest and Haleakala National Park. Any plants that show up in natural areas should be controlled as early as possible to prevent larger infestations.

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