



G rasslands

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A newly described grasslands species from the Santa Rosa Plateau and surrounding areas

Brodiaea santarosae

The Santa Rosa Basalt Brodiaea

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B*rodiaea santarosae* is a newly recognized species found only on basalt soils in areas currently or recently covered by the Santa Rosa Basalt of southwest Riverside County and a neighboring small part of San Diego County.

It is the rarest of the southern California brodiaeas, with just four known populations occupying only a small portion of an area only 10 miles long and 3 miles wide, plus a fifth very small population separated by 7 miles from the rest of the population.

Specimens of *B. santarosae* have been confused with two other rare species, *B. filifolia* and *B. orcuttii*, based solely on two internal parts of its flowers. Our studies have shown these specimens are very different from those other two species; we have found 11 differentiating characteristics. For a complete species description, see Madroño 54(2):187–198 (2007).



Santa Rosa basalt brodiaea (*Brodiaea santarosae*) on Avenaloca Mesa. The long stamen filaments are similar to *B. orcuttii*; however, the long, slender staminodes and larger flowers are unlike *B. orcuttii* or *B. filifolia*. Photo: Wayne Armstrong

Other specimens of *B. santarosae* have been thought to be hybrids between *B. filifolia* and *B. orcuttii*. That hypothesis is ruled out because *B. filifolia* and *B. orcuttii* only occur together well to the south of the Santa Rosa Basalt in San

Marcos in San Diego County. In fact, we were lucky enough to find true hybrids of *B. filifolia* and *B. orcuttii* in San Marcos. Those hybrids are clearly distinguished from specimens of *B. santarosae*.

Species found only on a given soil type are of great interest to botanists in how they have adapted to difficult soils such as basalt. In *Introduction to California Soils and Plants* (University of California Press, 2006), A. R. Kruckeberg made a prediction that was borne out by our recognition of this species: “most new species will be in places . . . with kooky soils . . . in . . . remote . . . out-of-the-way places in southern California.”

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