

1982

Introduced Annual Eriogonum in Minnesota

Charles L. Argue
University of Minnesota

Steven R. Argue
Murray Junior High School, St. Paul, Minnesota

Follow this and additional works at: <https://digitalcommons.morris.umn.edu/jmas>



Part of the [Plant Biology Commons](#)

Recommended Citation

Argue, C. L., & Argue, S. R. (1982). Introduced Annual Eriogonum in Minnesota. *Journal of the Minnesota Academy of Science*, Vol. 48 No.3, 7-7.

Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol48/iss3/4>

This Article is brought to you for free and open access by the Journals at University of Minnesota Morris Digital Well. It has been accepted for inclusion in Journal of the Minnesota Academy of Science by an authorized editor of University of Minnesota Morris Digital Well. For more information, please contact skulann@morris.umn.edu.

Introduced Annual *Eriogonum* in Minnesota

CHARLES L. ARGUE* and STEVEN R. ARGUE**

ABSTRACT — A selected summary of the utility of data derived from the recording and analysis of immigrant plant species is considered in relation to an apparently introduced Minnesota population of *Eriogonum annuum* Nutt., the Annual Eriogonum. Fruiting specimens and one flowering specimen of this species, heretofore reported on xeric sites from the western Dakotas, Montana, and Wyoming south into Mexico, were collected October 13, 1982, on the Sherburne National Wildlife Refuge near Zimmerman, Minnesota, and represent the first records of an *Eriogonum* in this state.

Discoveries of new plant introductions do not generally contribute to the understanding of phytogeographic or taxonomic relationships and thus lack the inherent interest that surrounds the finding of new native species. Nevertheless, a record of introduced species is prerequisite to a definition of the indigenous flora. The recording and analysis of introductions serve to update the distribution data in regional manuals, document the variable role of human activity in the redistribution of species, establish a base for the chronological assessment of possible continued dispersal, and under particular circumstances, provide comparative data on extended ecological tolerances and divergent patterns of variation. The role of directed and stochastic processes effecting rapid genetic change in small, isolated populations is a subject that requires much additional study (cf., e.g., Dobzhansky, 1977). One particularly promising opportunity for comparative analysis of drift and potentially strong selection in response to altered growing conditions would seem to be provided by small, persistent, outcrossing by isolated populations of variable, annual species introduced from dissimilar eco-geographical regions.

Such a species is *Eriogonum annuum* Nutt., the Annual Eriogonum. This species normally occurs from the plains of Nebraska to Texas, to New Mexico and south into Mexico (Britton and Brown, 1970) and has been reported on xeric sites in the western Dakotas (Bolley and Waldron, 1900; Winter et al., 1959), Montana (Rydberg, 1900), and Wyoming (Nelson, 1896). However, a population composed of less than 200 individuals recently has been found on a sparsely vegetated sandy area at the Sherburne National Wildlife Refuge near Zimmerman. Fruiting specimens and one flowering specimen, representing the first records of an *Eriogonum* in Minnesota, were collected on October 13, 1982. These along with detailed notes on locality and associates have been deposited in the Botany Herbarium, University of Minnesota. Duplicate specimens are being distributed.

Eriogonum can be distinguished from most other members of the buckwheat family, including all three genera native to Minnesota, because it lacks an ocrea or sheathing growth at the base of its petiole and because its flower clusters are subtended by a

special involucre of united bracts. The genus includes 246 other species occurring mainly in dry habitats in the western United States (Reveal, 1978). All are North American, but one species, *E. divaricatum*, has been discovered as an introduction into Argentina (Spegazzini, 1902). Unlike many taxa of possible interest in evolutionary and genetic studies, its chromosomes are easily examined (Stokes and Stebbins, 1955).

There can be little doubt that the Sherburne population has been introduced. Various sites within the refuge were seeded with prairie grasses over the 21-year period 1958–1978. Although the provenance of these seeds is varied and uncertain, some were harvested in Nebraska (Will Nidecker, personal communication), where seeds of the Annual Eriogonum would be an expected contaminant. However, recent seedlings have in general, employed local seed stocks (Dr. Gerald B. Ownbey, personal communication) and are far removed from the site now occupied by *E. annuum* in the Sherburne Refuge. It is therefore likely that the Sherburne population has been established longer than the four reproductive years that have elapsed since 1978. This small population of *E. annuum* which has colonized an area well outside its normal range merits further monitoring and study.

REFERENCES

- BOLLEY, H.L. and WALDON, L.R. 1900. A Preliminary List of the Spermatophyta, Seed Bearing Plants of North Dakota. Fargo, State Agricultural College Government Experiment Station Bulletin No. 46.
- BRITTON, N.L. and BROWN, A. 1970. An Illustrated Flora of the Northern United States and Canada. New York, Dover Press.
- DOBZHANSKY, T. 1977. In DOBZHANSKY, T. AYALA, F. J., STEBBINS, G.L. and VALENTINE, J.W. Evolution. San Francisco, W.H. Freeman and Co.
- NELSON, A. 1896. First Report on the Flora Of Wyoming. Laramie, University of Wyoming Experiment Station Bulletin No. 28.
- REVEAL, J.L. 1978. Distribution and Phylogeny of Eriogonoideae (Polygonaceae). Great Basin Naturalist Memoirs 2.
- RYDBERG, P.A. 1900. Catalogue of the flora of Montana and Yellowstone National Park. Memoir of the New York Botanical Garden 1.
- SPEGAZZINI, C. 1902. Nova addenda ad Floram Patagonicam, 3. Anales Mus. Nac. Hist. Nat. Buenos Aires, 7.
- STOKES, S.C. and STEBBINS, G.L. 1955. Chromosome numbers in the genus *Eriogonum*. Leaflet W. Bot., 7.
- WINTER, J.M., WINTER, C.K., and VAN BRUGGEN, T. 1959. A Check List of the Vascular Plants of South Dakota. Vermillion, State University of South Dakota.

*CHARLES L. ARGUE is a research associate in botany at the University of Minnesota, where he received his Ph.D. in 1971.

**STEVEN R. ARGUE was thirteen years old and an eighth grader at Murray Junior High School in St. Paul at the time of his discovery of *Eriogonum annuum* in Minnesota. In addition to his interest in Minnesota plants, he enjoys drawing, birding, and collecting invertebrates.