

Historical Sketch of Barilla (*Halogeton glomeratus*)

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INTEREST in barilla (*Halogeton glomeratus*) is increasing as an aggressive, stock-poisoning plant, especially in the Intermountain Region. For this reason and because of its absence from the botanical manuals, with lack of readily available description, coupled with conflicting statements on certain matters, such as its nomenclature, both scientific and common, and as regards its time of introduction into this country, it seems desirable to provide a chronological historical sketch of the plant.

EARLY COLLECTORS OF HALOGETON

The discovery and first collection of barilla appears to have been made by Stephan late in the 18th or early in the 19th century. His specimens (which undoubtedly are the botanical "type" of this species and hence of great importance taxonomically) presumably are in Moscow or Leningrad; the Iron Curtain precludes inquiry about these specimens and their exact date and place of collection. Stephan labeled this material *Salsola glomerata*, but never published the name so that it has no botanical standing. In 1808 the distinguished Marshal von Bieberstein described and legally published this plant as *Anabasis glomerata*; he reported that it grows in the remoter deserts of Siberia. C. A. Meyer, in Ledebour (1829), first proposed and published the generic name *Halogeton*, as well as the combination *H. glomeratus* (M. Bieb.) C. A. Mey. Meyer states that this species is abundant in desert areas, in dry saline clays, from Sungaria to the Kirghiz

Steppe (northwestern China and southwestern Siberia).

Since there are scanty, if any, ready references to Stephan, von Bieberstein, and Meyer, and those mostly in German, brief biographical sketches of these three men are appended:

Christian Friedrich Stephan, author of a Flora of Moscow, was born in Leipzig, Germany, in 1757 and died December 17, 1814, in St. Petersburg, Russia. He received degrees in medicine and philosophy at Leipzig and Leyden, went to St. Petersburg in 1782, the Crimea in 1783, and became Professor of Chemistry and Botany of the Moscow Academy in 1786, with the same position at St. Petersburg in 1804. He became connected with the newly established Forest Institute in St. Petersburg in 1811. He was active as a plant explorer and collector and in the development of drug-plant and botanical gardens.

Baron Friedrich August Marschall von Bieberstein was born in Stuttgart, Germany, August 10, 1768. He graduated from the Karl Military Academy and became an associate of Prince von Oettingen-Wallenstein. In 1792 he obtained an army secretaryship in Jassy under the Russian General Count von Kochowski and in 1793 became an Imperial Russian Aide-de-Camp. He accompanied the distinguished Russian botanist Pallas to the Crimea and, in 1796, was an officer under Count Valerian von Zubow in Persia. After the death of Czar Paul in 1797 he was settled in St. Petersburg and died June 28, 1826 near the city of Kharkov. He published a report on plant products

in the Caspian Sea area between the Terek and Kur Rivers.

Carl Anton Meyer was born March 20, 1795 in Vitebsk, west Russia, the son of an apothecary. Meyer entered the University of Dorpat in 1813 and studied pharmacy. In 1818 he sold his apothecary business and became associated with the distinguished Russian botanist Karl Friedrich von Ledebour at the Dorpat Botanical Garden. In 1826 he accompanied Ledebour and Alexander von Bunge on their "grosse Reise" to the Altai Mountains, and was associated with Bunge and Ledebour in the latter's "Flora Altaica" (1829). He was called to the St. Petersburg Botanical Garden in 1831 and, after the death of Trinius in 1844, was put in charge of the Royal Academy of Science (in Botany). He died December 24, 1855.

The genus *Halogeton* is mainly distinguished by its annual habit; small fleshy often fingerlike leaves ending in a sharp point; flowers without corolla or true involucre, the calyx-lobes 5 (or sometimes 3) separated into distinct sepals; stamens 5 (occasionally 1 or 3); seeds borne vertically (instead of horizontally) in the small flattened fruit (utricle) which is subtended by the persistent winged sepals (Fig. 1, F.). *Halogeton* belongs in the saltberry subtribe (Anabasinæ) of the Russian-thistle tribe (Salsoleæ), seepweed subfamily (Suaedoideæ) of the goosefoot family (Chenopodiaceæ). The name *Halogeton* is evidently derived from the Greek *hals*, *halos* (ἅλς, ἅλός), salt and *geiton* (γείτων), neighbor. The genus contains twelve species, 5 essentially Siberian, 3 species in the Caspian-Aral-Turkestan area, and one species each in the general Mediterranean region, Algéria, Arabia, and Iran. It is perhaps only a question of time when one or more of these other species will emigrate to this country.

With the exception of Holmgren's proc-

essed Handbook (1942) no botanical manual of the United States mentions *Halogeton glomeratus*. For example, neither genus nor species appears in Standley (1917), Tidestrom (1925), nor Davis (1945).

Ulbrich (1934) in his classic treatment of Chenopodiaceæ describes the genus *Halogeton*, with three species, and gives the natural distribution of *H. glomeratus* as in the saline steppes of south Russia from the Ural Mountains and the Aral-Caspian region to Sungaria and the Tibetan wastes.

HALOGETON IN THE UNITED STATES

In early 1936 the "77th Intermountain Forest and Range Experiment Station Collection" was forwarded to the Washington office of the U. S. Forest Service. In this collection were two specimens, S-43 and S-44, Forest Service Herbarium Nos. 71799 and 71800, respectively, collected June 20, 1934, one mile northeast of Wells, Elko County, Nevada, at 5500 feet, and reported to be "common on disturbed areas." These specimens, collected by Mr. Ben Stahmann, then a Forest Service officer, caused considerable difficulty in identification, and later proved to be *Halogeton glomeratus*—apparently the first collection of this species and genus in this country. An account of Dr. Stahmann's connection with this plant has been published in the Salt Lake Tribune (1951) but does not cite his 1934 collections.

The first published record of the occurrence of this plant in this country appears to be by Standley (1937), who based his note on a "plant collected in August, 1935, at Wells, Nevada, by Ben Stahmann." Standley evidently was unaware of Stahmann's earlier (1934) collections and he reported the plant under the name *Halogeton sativus* (L.) C. A. Meyer, although Macbride (1918) had indicated

that *H. sativus* is a synonym of *H. souda* (Loefl.) Macbride. Fosberg (1940) lists *Halogeton souda* as introduced into

the United States is not *H. souda* (syn. *H. sativus*) but *H. glomeratus*.



FIG. 1. Barilla (*Halogeton glomeratus*): A. Plant in fruit ($\times \frac{1}{2}$). B. Foliage ($\times 3$). C. Leaf ($\times 6$). D. Fruit clusters ($\times 1$). E. Fruits and scales ($\times 6$). F. Individual fruit with persistent calyx ($\times 6$). G. Scale subtending fruit ($\times 6$).

Elko County, Nevada, from the Mediterranean region. Morton (1941) called attention to the fact that the plant intro-

To Fleming, Miller, Vawter, *et al.* (1944-) of the Nevada Agricultural Experiment Station belongs the credit of