
The Military Botanist

American LHS member, Deborah McMillin, first became interested in an unusual botanist after a trip to Tromsø in Norway.

Stories of botanical collectors of the 17th through to the early 20th century, often portray a life of travel, excitement, danger and at times death, in pursuit of their singular passion. Many of these individuals would have been educated in the sciences at prestigious universities. Financial backing and support for their exploits could have come from botanical institutions, wealthy benefactors or commercial horticulture businesses. There have also been individuals with interest in the collection of new species whose main education and occupation was other than botanist or plant hunter. I found that, using their own resources, they used the opportunity of their employment to make significant contributions of new botanical species.

I found an example of such an individual when identifying a photograph I had taken of a group of lilies at the northerly Botanical Garden of Tromsø, Norway. I was introduced not only to the stately Caucasian lily, *Lilium monadelphum*, but also to a botanical explorer of the Caucasus mountain range which extends through the territories of Russia, Georgia, Armenia and Azerbaijan. His career was in the military, but he learned to use every assignment as an opportunity to expand his botanical studies.

German born, Friedrich August Marschall von Bieberstein (1768-1826), followed his father in a military career, working first for the German prince of Oettingen-Wallerstein in Vienna, then as a secretary to a Russian general in Romania. In 1792 he became aide-de-camp to the general and was posted to Crimea during the Polish-Russian war. After meeting fellow German naturalist and zoologist Peter Simon Pallas, who encouraged his interest in natural history, he began to collect herbarium specimens in earnest for three years while stationed in Crimea.

In 1795 he returned to St Petersburg and was sent with the invading Russian forces into Persia. There he explored the western shore of the Caspian Sea collecting herbarium specimens while continuing with his military duties. When the conflict ended in 1796, he returned to Moscow and in 1798 published, in French, an account of his botanical explorations. This writing contained 74 new species descriptions and considerable



Left and above : *Lilium monadelphum*, the Caucasian lily growing in Norway

botanical information. Later it was published in German and English. During 1798 he took his second trip to the Caucasus where he explored the northern and eastern parts of the mountains.

In 1799, Marschall von Bieberstein returned to Southern Russia where he was appointed in an advisory capacity to a government position in which he was responsible for the development of silk worm breeding. He took the opportunity to continue his botanical studies while traveling in the region. When the Russian government sent him on a scientific mission to Germany and France in 1804, he used the opportunity to study Near East specimens in the Tournefort Herbarium in Paris in anticipation of a future flora publication.

Marschall von Bieberstein's third trip to the Caucasus was in 1802. He travelled with his friend, Count Appolo Mussin-Pushkin (the genus *Puschkinia* honors his name) a Russian chemist, plant collector and foreign member of the Royal Swedish Academy of Science. After Marschall von Bieberstein's marriage to a Finnish woman in 1804, a permanent move was made to Merefá, Ukraine. He developed orchards in Central Ukraine and supervised military pharmaceutical gardens. His fourth and last trip was made to Caucasus and Georgia in 1805.

Flora Taurico Caucasica was published by Marschall von Bieberstein in 1808 and a second volume in 1819, which covered additional specimens he later discovered in the region. These two volumes covered 2,322 species of the Caucasus region from his numerous trips. This was the first comprehensive flora catalogue of the Crimeo-Caucasus region. He used what was then the new Linnaean classification system. In 1910 he published a work, *Centuria plantarum rariorum Rossiae meridionalis*, with 50 of his own hand-coloured engravings of south Russian plants.

The Royal Botanical Garden of Edinburgh holds an herbarium specimen of the *Lilium monadelphum* M. Bieb., collected by Marschall von Bieberstein, but the date and exact location of the collection of this impressive member of the Liliaceae family was not recorded with the specimen.

We do know that *L. monadelphum* is endemic to the Caucasus regions and found in the upper mountains and sub-alpine belts of the northern regions of Georgia and Azerbaijan. In its natural habitat this lily prefers growing in moist gritty-loamy soil on sunny slopes or at the forest edges of mountain meadows. The *Lilium monadelphum* has sweet-smelling, down-facing florets which are straw-to-butter yellow (with at times purple spotting). At a height of over 4 feet the stems are rigid and strong and are able to hold in place up to 24 florets, plus withstand the winds at altitudes up to 6,900 feet above sea level, and temperatures chilling down to -20°F in the mountains.

By the late 1800's the Caucasus or Steigenlilje lily, as it was named in northern Norway (growing in a prestigious farm in Steigen), spread to other gardens in Norway where it developed a popularity for its early flowers, disease-resistant and cold-hardy disposition.

In England, Henry John Elwes wrote in his 1880 treatise, *A Monograph of the Genus Lilium*, that the *Lilium monadelphum* grows abundantly in the northern and eastern parts of the Caucasian region. Elwes referred to a Mr Freshfield who wrote in his book of travels of it growing in the valleys amongst the herbaceous plants at an elevation of 4,000 to 6,000 feet. The early blooming flowers had sweet scent too strong to be desirable as a pot plant. In England it liked a 'strong soil' and when well established would grow to a height of 3-5 feet. Elwes indicated that it had been found that if the seed was sown at once it would germinate quickly, but would not show



Above: lithographs of *L. monadelphum* by W.H. Fitch

its cotyledons above ground. He wrote that the seedlings would grow very slowly and sometimes would not flower until the 10th year after sowing. This he said was 'a trial of patience too much for the amateurs, though the bulb growers of Holland, more accustomed to such operations have lately raised large quantities from seed.' From Elwes' treatise we find that it was introduced in England by Messrs Loddiges in the early 1800s but did not become common until the last few years before the publication of Elwes' treatise in 1880. The importation of the plant from its native country in large quantities contributed to its popularity.

Elwes wrote that the plant was first described by the Russian botanist Friedrich August Marschall von Bieberstein, having been found in the Caucasus when these mountains were first explored by the naturalist. The lithograph of the *L. monadelphum* by W.H. Fitch, was from a plant which flowered in the author's garden in June of 1875 and in 1876 produced 29 flowers on one stem.

Currently many of the plants that Marschall von Bieberstein assigned names to and wrote of (especially in Georgia, Armenia and Azerbaijan), are under threat due to rapid losses of natural habitats. Conservation

International indicates that this is largely due to the economic turmoil of the early 1990s, with political changes in what was then the Soviet Union. The threat is further exacerbated by the fact that the Caucasus area is home to approximately 1,600 endemic plants, an exceptionally large number, which is one of the reasons Conservation International has designated it as one of their 25 global biodiversity hotspots.

After Marschall von Bieberstein's death in 1826, approximately 10,000 specimens of his plant collection were donated to the Russian Academy of Science in St Petersburg. This collection is currently under the possession of the Komarov Botanical Institute, where in the late 1960s it was organized to be accessible to botanical scholars. According to the International Plant Names Index, Friedrich A. Marschall von Bieberstein is recognized as a scientific authority for naming 1,695 plant species. Marschall Von Bieberstein received the Imperial Russian honor of Order of Saint Vladimir for his continuous civil and military service. He is also acknowledged in literature as a scholar of antiquities in the Eastern Crimea and Taman Peninsula. Besides botany, his scientific career also covered biology and zoology. Closer to our interests, he was a Foreign Member of the Botanical Society of Edinburgh.

It is not Friedrich August Marschall von Bieberstein's military prowess that we will recall when we see the family name *Biebersteiniaceae* or the botanical epithets *Biebersteinii* (*Centaurea biebersteinii*) and *Biebersteinia*. We will recall the story of a young German man from Stuttgart who throughout his life took opportunities to broaden his passion to be a botanist and collector even though it moved him away from his homeland, and who by his mid-life had published the first comprehensive writings and illustrations of the flora of his adopted land of Russia.

References

- Illustrations of the *Lilium monadelphum* from the collection by the Biodiversity Heritage Library; contributed by the Missouri Botanical Garden, Peter H. Raven Library; From a *Monograph of the Genus Lilium*, by Henry John Elwes. Illustrated by W.H. Fitch 1880, Published by Taylor & Francis, London. (Plate 20 & 21). <https://www.biodiversitylibrary.org/item/10264#page/6/mode/1up>
- F.A. Stafleu, 1973, *Marschall von Bieberstein and his Flora Taurico Caucasica*, Taxon 22:126-128