

## TINY SPECIES: *MYOSOTIS STRICTA* LINK, A RARE COMPONENT OF SOME VERNAL MICROFLORAS IN NEW YORK AND ONTARIO ALONG THE NIAGARA RIVER

Imagine in the region of Niagara Falls a habitat on the edge of an island, or a ballast-berm or the lip of a rocky gorge under the open sun, perhaps at the edge of the forest canopy, in the face of the prevailing wind. The soil beneath you is dry, hard-packed clay, or gravel in a hard clay matrix, or thin clay soil over dolomite bedrock. Imagine also it is spring to early summer (March to early June). At your feet are an array of tiny plants with small flowers - some are familiar to you as common weeds, but others may be uncommon ephemerals—here today, probably gone tomorrow, but gone at least before the grass elongates and the trees are fully leafed out.

Many of these plants occur in gravelly patches in lawns where bedrock outcrops occur, such as in parks and golf courses, but in the habitats described, they form a microflora of their own kind, often with other plants normally quite tall and occurring throughout the summer, but now stunted by the harsh conditions subsequent to winter.

On the western side of Navy Island, Ontario, in the edge of a gallery of oak: *Quercus rubra*, *Q. macrocarpa*, and Hickory (*Carya ovata*), at the top of a clay embankment occurs Whitlow Grass (*Draba verna* L.), one of the tiniest of Mustards growing from March to May. Beside it is the white-flowered root parasite Bastard Toad Flax (*Comandra umbellata* (L.) Nutt.), our only species in the Santalaceae. Here and there occurs the familiar weed of sidewalks the Mouse-eared Chickweed (*Cerastium fontanum* Baumg.) and a single population of Field Chickweed (*Cerastium arvense* L.) with its conspicuous white petals.

Here, among the grasslike species is the Woodrush (*Luzula campestris* var. *multiflora* (Retz.) Celak) growing here and throughout the Niagara gorge area amid grasses at the base of oaks, and various meadow-grasses (*Poa compressa* L., *Poa annua* L., the thin-leaved variety of Kentucky Blue-grass (*Poa pratensis* var. *angustifolia* (L.) Gaudin), and the familiar Path Rush (*Juncus tenuis* Willd.).

The often-encountered, small, blue-flowered Thyme-leaved Speedwell (*Veronica serpyllifolia* L.) grows on Navy Island beside the rare Eurasian Forget-me-not (*Myosotis stricta* Roemer & Schultes [= *Myosotis micrantha* Pall.]), abundantly growing here. This species has not yet previously been reported from western New York State and is listed by the NYFA (1990) as a New York State Rare Introduction. The plant is known for the flora of Ontario (Morton and Venn 1990), but whether from the Regional Municipality of Niagara is not yet known to the author, but perhaps it is a newcomer to the Niagara Frontier Region.

Another peculiar, and not common, plant growing amid this assemblage is European Corn-salad (*Valerianella olitoria* (L.) Poll. [= *V. locusta* (L.) Betcke.]) with minute flowers a pale-bluish white.

Crossing over into the channel of the Niagara River passing the eastern shore of Navy Island is a man-made berm and an arm of land created out of rocky ballast that is an extension of Buckhorn Island State Park in New York. It is densely populated by sea-gulls and the open conditions are very harsh. Many tiny exotic plant species occur here as well, but also taller ones stunted by the wind and baked clay. Again we find the Whitlow Grass and the chickweeds, but now there is also the Spring Mouse-Ear (*Cerastium semidecandrum* L.) in mats, together with

nearly identical Thyme-leaved Sandwort (*Arenaria serpyllifolia* L.). A tiny yellow mustard proves to be a stunted expression of Sand Rocket (*Diploaxis muralis* (L.) DC.), recently described as a rare introduction (Mitchell 1986) but now frequent in the streets of Buffalo and Niagara Falls and throughout the rocky Niagara Gorge. The grasses previously mentioned occur here (except Woodrush), with the addition of *Bromus tectorum* L. (Downy Chess) with stunted Field Cress (*Lepidium campestre* (L.) R. Br. and Pineapple-weed (*Matricaria discoidea* DC.). One of the prettiest is the yellow-blooming Mossy Stonecrop of our rock gardens (*Sedum acre* L.) known also from Niagara Glen, growing with common Corn Speedwell (*Veronica arvensis* L.).

The final special habitat in this area is at Devil's Hole State Park, the upper overlook which is exposed dolomite bedrock and shallow soil, with Bastard Toad Flax at the crest and here and there in cracks and solution cavities Silvery Cinquefoil (*Potentilla argentea* L.), Thyme-leaved Sandwort, Whitlow Grass, Spring Mouse-ear, and Common Corn Speedwell. Recently a rare moss was found lending a reddish color to the hard, wet spring mud adjacent to the rock platform: Starck's Little Bryum (*Microbryum starckeanum* (Hedw.) Zander).

Certain peculiarities apply to these species: except for the grasses, the plants mostly form small basal rosettes or low-growing, tangled mats. Their niche in the world is a very dry one. Nearly all of them are exotics, new to our region. Their common names often refer to "Mouse Ears," due not only to their shape, but to the pubescence common to many of their leaves and stems.

Other diminutive plants growing in different habitats are the purple-flowered Small-flowered Crane's-bill (*Geranium pusillum* L.) growing in the lawns on Goat Island, and the smaller strawberry, *Fragaria vesca* L. Appearing later in the year are strikingly lovely tiny native species of the shallow soils on the lip of the Niagara gorge, on both sides of the river, sentimentally called Bluets, Quaker-ladies or Innocence (*Houstonia caerulea* L. and *H. longifolia* Gaertn.).

I recently was presented with a cultivated variety of the tiny Mouse-ear Cress (*Arabidopsis thaliana* (L.) Heyn.). It was being grown in an empty container for photographic film. It was grown in these small tubes for children who could then manipulate growing conditions and examine how their small green prisoner reacted. All these species are generally too small for rock gardens—terrariums more likely. We may refer to them, if we like, as our thimble flora.

Mitchell, Richard S. 1986. A Checklist of New York State Plants. New York State Museum Bulletin 458.

Morton, J. K. & Joan M. Venn. 1990. A Checklist of the Flora of Ontario Vascular Plants. University of Waterloo Biology Series No. 34. Obtainable from Department of Biology, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1.

New York Flora Association. 1990. Preliminary Vouchered Atlas of New York State Flora. Ed. 1. New York State Museum Institute, Albany.

— P. M. Eckel

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