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Stellaria nemorum on the Åland Islands, SW Finland

Ralf Carlsson & Carl-Adam Hæggström

Carlsson, R. Husö Biological Station, AX-22220 Emkarby, Åland, Finland. Correspondence address: Högbackagatan 10, AX-22100, Mariehamn, Åland, Finland. E-mail: ralf.carlsson@lyceum.ax
Hæggström, C.-A. Botanical Museum, P.O. Box 7, FI-00014 University of Helsinki, Finland. E-mail: carl-adam.haeggstrom@helsinki.fi

The Wood Stitchwort (*Stellaria nemorum*) is common in most parts of Scandinavia and Finland. However, until now only two finds, one in Sund and one in Hammarland, are known from the Åland Islands. We found it on a new locality in Sund in 2008. *Stellaria nemorum* grows along a brook where vegetative shoots only were seen. We re-visited the locality in Hammarland, but the species could not be found by us. We noted that these two localities are similar, with moving soil water. The soil of the new locality was studied for pH and exchangeable macronutrients. The accompanying vascular plant flora was annotated. The dispersal of *S. nemorum* and the common species *S. graminea* and *S. media* is briefly discussed.

The Wood Stitchwort (*Stellaria nemorum*) is common in most parts of Scandinavia (Hultén 1971) and Finland (PA 2007), but until now only two finds are known from the Åland Islands. The species was collected at Kastelholm in the municipality of Sund in 1894 by Buddén. The voucher comprises three richly flowering shoots. Another locality in Åland was found by Palmgren in Kattnäs in the municipality of Hammarland on July 11, 1920. Two vouchers are preserved in H; one comprises two flowering shoots, the other four vegetative shoots.

Palmgren (1925a, b) published his find from Hammarland. The locality was a slope with deciduous trees. The soil was rich in springs. Palmgren (1925a) mentions some species growing on the slope, among them the rare sedge *Carex remota* and *Menyanthes trifoliata*, a peculiar habitat for this fen species. He pointed out that the shoots of *S. nemorum* were mostly vegetative and extraordinarily small.

When searching for protected and endangered vascular plants, the author CAH came to a rather steep water logged slope with springs in Hammarland on August 1, 1976. Several tufts of the sedge *C. remota* grew here together with *M. trifoliata* and several other species mentioned by Palmgren (1925a). The locality was obviously the same that Palmgren described. However, he had given wrong data on its location, because the village is not Kattnäs but Hellesby and the slope is not located one kilometre south of the sawmill [at the Kattnäs promontory in 1920] but 450 m east of it.

Table 1. pH and concentrations of exchangeable macronutrients of the soil in the locality of *Stellaria nemorum* in Sund, Brännbolstad.

	Surface soil, mull	Mineral soil, silt
pH	5.06	5.2
Ca, mg/l	1 432	962
P, mg/l	5.0	1.6
K, Mg/l	180	148
Mg, mg/l	188	138
NO_3, mg/l	< 1	< 1

Fig. 1. A clone of *Stellaria nemorum* growing along the brook in Brännbolstad in the municipality of Sund, Åland. 16/7-2008, photo RC.

Stellaria nemorum was not seen in 1976 in this locality, but around a large spring about 500 metres further to the northeast.

We re-visited the both spring localities in Hammarland Hellesby in September 2008. The locality on the slope was heavily disturbed by cutting and digging and *S. nemorum* could not be found there. The terrain around the large spring was also thoroughly searched by us, but in vain.

In June 2008, the author RC noted some unfamiliar leaves of a plant (Fig. 1–2) along a gully of a small brook in a spruce forest of Brännbolstad in the municipality of Sund. The plant covered two patches of about 10 × 15 m and the shoots were about 0.2–0.4 m high. The stems were fragile and the plants seemed to reproduce vegetatively with stolons. The pale green opposite heart-formed leaves had long petioles all along the stem, but somewhat shorter closer to the top. The stems and petioles were covered with very tiny hairs. We waited for the plants to flower but not a single flower was seen in all summer. We finally managed to identify the plant and found that it was *Stellaria nemorum* ssp. *nemorum* L. and later on, Arne Anderberg at the Swedish Museum of Natural History, Stockholm, confirmed our identification.

We took two soil samples; one from the surface (humus layer) and one from the mineral soil. The samples were extracted for one hour in a solution of ammonium acetate (pH 4.65) and analysed for exchangeable Ca^{++}, Mg^{++}, K^{+}, PO_4^{2-} and NO_3^{-}, determined with atomic absorption spectrometry at the laboratory of The Agri- and Horticultural Research Station of the Åland Islands. 25 ml of dried, ground soil was mixed with 62.5 ml of ion-exchanged water and the pH was measured after 17 hours. NO_3^{-} was measured on moist soil potentiometrically. The pH is rather high for being in a coniferous forest and the calcium-values are equal to or a little bit higher than those given for forest soils by Högnäs (1966). The area seems to be an old wooded pasture, since there are some old birch pollards (*Betula pendula*) close to the locality and in the forest nearby, some old fences were found.

The number of species along the brook is fairly low, numbering just a little more than thirty. The canopy was dominated by *Picea abies* mixed with some *Pinus sylvestris, Alnus glutinosa* and *Betula pendula*. The bush layer was more or less absent and the field layer was dominated by some species, indicating fertile soil, such as *Anemone nemorosa, Carex digitata, Hepatica nobilis, Mycelis muralis, Paris quadrifolia, Stachys sylvatica* and *Tussilago farfara*. Other more or less common plants were e.g. *Equisetum pratense, Filipendula ulmaria, Gymnocarpium dryopteris, Maianthemum bifolium, Oxalis acetosella, Phegopteris connectilis,*

Fig. 2. Overview of the gully. The brook was rather dry due to dry weather conditions during the previous weeks. 16/7-2008, photo RC.

Stellaria media and *Vicia sylvatica.* (Vascular plant nomenclature is according to Hämet-Ahti *et al.* 1998.)

This is obviously the third find of *Stellaria nemorum* on the Åland Islands. The present locality is shady, which may explain the absence of flowers. Otherwise the plants seem to thrive and leaves were still seen in November. We have transplanted some plants to a nearby location to see if more light will make them flower. The location close to the brook may be crucial since we believe that the plants will do best with moving soil water.

Palmgren (1925b) mentions that there is a group of species that are very rare or even lacking in the Åland Islands, although they are quite common in the adjacent areas of both Finland and Sweden. *Stellaria nemorum* belongs to this category. Of the other *Stellaria* species growing in Åland, *S. holostea, S. longifolia* and *S. alsine* are also rare. The two most common species are *S. graminea* and *S. media*, the former occurring in dry and mesic meadows, rock meadows and on roadsides, the latter on seashores and as a common weed in gardens, cereal fields and ruderal soil. These two have apparently an effective mode of dispersal of their tiny seeds. *S. nemorum* ssp. *nemorum*, on the other hand, seems to have a rather poor dispersal ability. The southern *S nemorum* ssp. *glochidisperma* Murb. [ssp. *montana* (Pierrat) Berher], occurring in South Scandinavia and Central and South Europe, has seeds with hooked warts adapted to an epizoochorous dispersal.

Eklund (1927) studied the germination of seeds in brackish water of an equal salinity to the Baltic Sea of the SW coast of Finland, that is about 0.5% S. A batch of 100 ripe seeds of *S. nemorum* were put into a vessel with brackish water. They sank immediately and nothing happened to them during the following two months. Romell (1938) mentions that the buoyancy of the seeds of *S. graminea* and *S. media* is less than one hour.

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