WHAT IS AN ARCHEOPHYTE?

ILKKA KUKKONEN

Botanical Museum, University of Helsinki,
Unioninkatu 44, SF-00170 Helsinki, Finland

Abstract

Human influence on the flora of South-West Finland is examined using the Dropwort (*Filipendula vulgaris* Moench.), Thyme (*Thymus serpyllum* L.) and Spiked Speedwell (*Veronica specata* L.) as examples.

Introduction

Whenever the transition to agricultural society occurred in SW Finland, the extensive clearing of the forest presumably destroyed a host of ecological niches. At the same time, however, it created a variety of new habitats in which plant species could thrive. We may ask to what extent does the present-day flora portray this early change?

This kind of transition was analysed by Linkola (1916) at a stage when slash-and-burn cultivation was still practised in the region N of Lake Ladoga. It has been claimed that in other regions, e.g. in Central Europe or SW Finland, it is too late or, at least, extremely difficult to estimate the original frequency of a given plant species (Jalas 1958). The same applies to estimation of the share of human influence in its present distribution. Nevertheless, the aim of this paper is to examine these questions in the light of three examples.

For the post-glacial shore-line displacement of the Baltic Sea, see e.g. Glückert (1976) and Eronen (1974).

Definitions

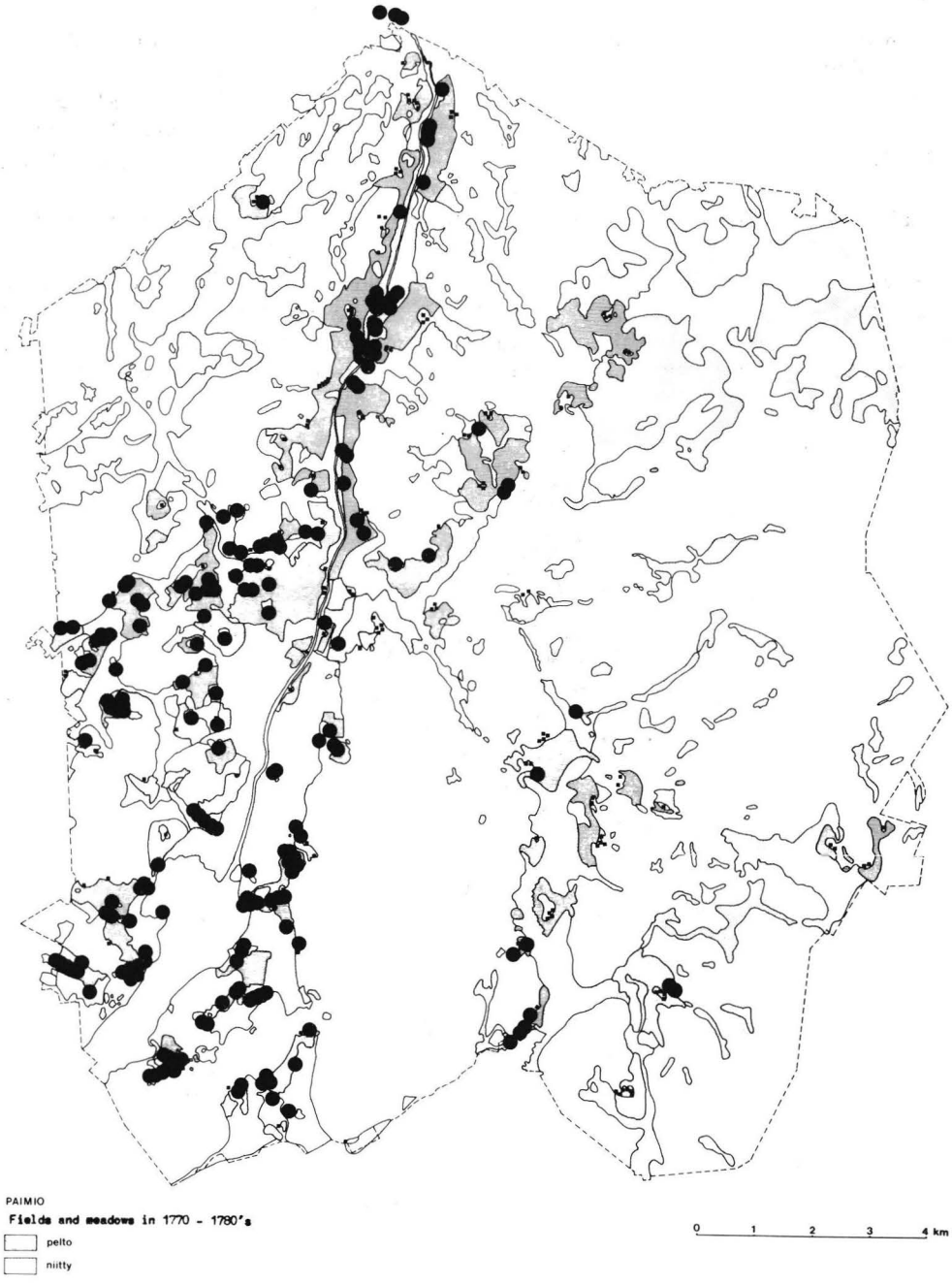
An *archeophyte* is a plant species which is an integral part of the present-day flora of the region, but has presumably immigrated in prehistoric times due to man's activities (Simmons 1910: 150).

A *native species* is believed to have occurred in the area before man or to have immigrated without his aid.

Native species which appear in man-made habitats, evidently drawing benefit from human activities are called *apophytes* (Linkola 1916, Jalas 1955, Ahti and Hämet-Ahti 1971: 15).

The Dropwort (Filipendula vulgaris Moench) in Paimio

It has been pointed out that the distribution of the Dropwort in SW Finland closely



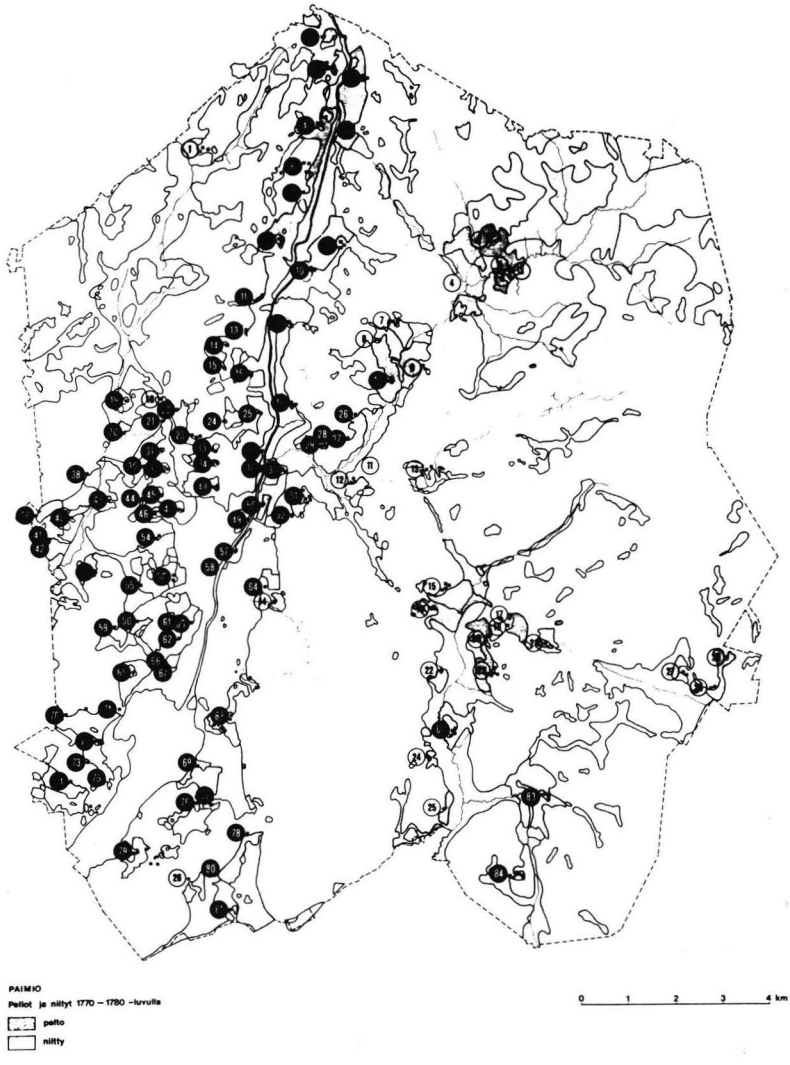
Map 1. Distribution of the Dropwort in Paimio parish. The base map, produced by Esa Hiltunen (see Hiltunen 1985), shows the distribution of fields (dark shading) and grazed meadows (light shading) in Paimio in the 1770–1780's.

corresponds to the area in which there is archeological evidence of permanent Iron Age settlements and the existence of hill fortresses (Jalas 1957: 18, Lindgren 1955, 1960, see also Lempiäinen 1978, 1982, Engelmark 1984, Fogelfors and Steen 1982).

An attempt may be made to refine the picture by studying the occurrence of the Dropwort in Paimio. Its distribution within the parish was roughly known (Kukkonen 1958) and this information was supplemented during excursions made jointly or seperately by Mr. O. Silkkilä and the author in several summers. Mr. J. Vilkki further complemented the findings in summers 1982 and 1983. As a result map 1 could be compiled. Here the minimum distance between the indicated localities is c. 100 m.

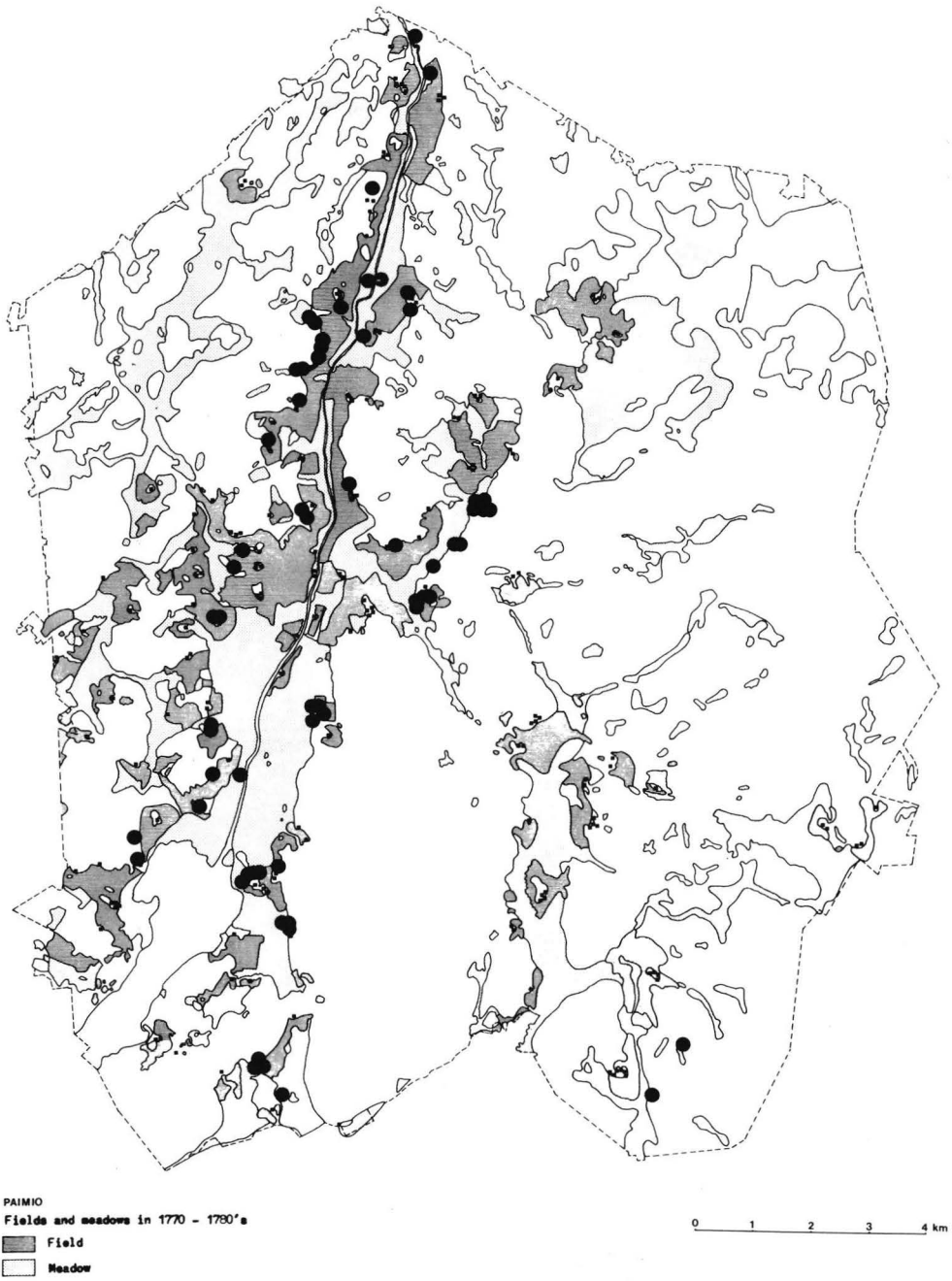
The distribution of the Dropwort in Paimio follows the distribution of fields as revealed by the maps of the »General parcelling out of land», accomplished in Paimio in the 1770–1780's (see Hiltunen 1985, Hiltunen and Luoto 1985).

When the distribution is compared with map 2, showing the villages of Paimio in existence before AD 1300 (v. Hertzen 1973), the resemblance to the pattern of human settlement is also striking. However, a closer comparison shows some differences; e.g. the species occurs in the village of Pennainen in the NW of the



Map 2. Distribution of villages in existence before 1300 in Paimio (black dots) and those founded later (circles): according to information from v. Hertzen (1973) and Esa Hiltunen (1985), base map as in Map 1.

parish, although this village is younger. The same concerns the village of Rekottila in the N end of a valley penetrating the central SE parts of the parish from the south. Furthermore, some of the localities in the SW are so near sea level that they must be rather recent. This indicates that the Dropwort has been able to extend its area since at least AD 1300.



Map 3. Distribution of Thyme in Paimio. The base map as in Map 1.

Map 1 also shows the local northern limit of the area of the Dropwort, just N of the border, on the side of Tarvasjoki parish.

That the Dropwort was already present in Paimio in prehistoric times, is suggested by the ethnobotanical findings in Spurila from the Younger Roman Iron Age (Seppä-Heikka 1985).

Today it is difficult to point out in Paimio one locality where the Dropwort can be considered native, althought, it may once have been so.

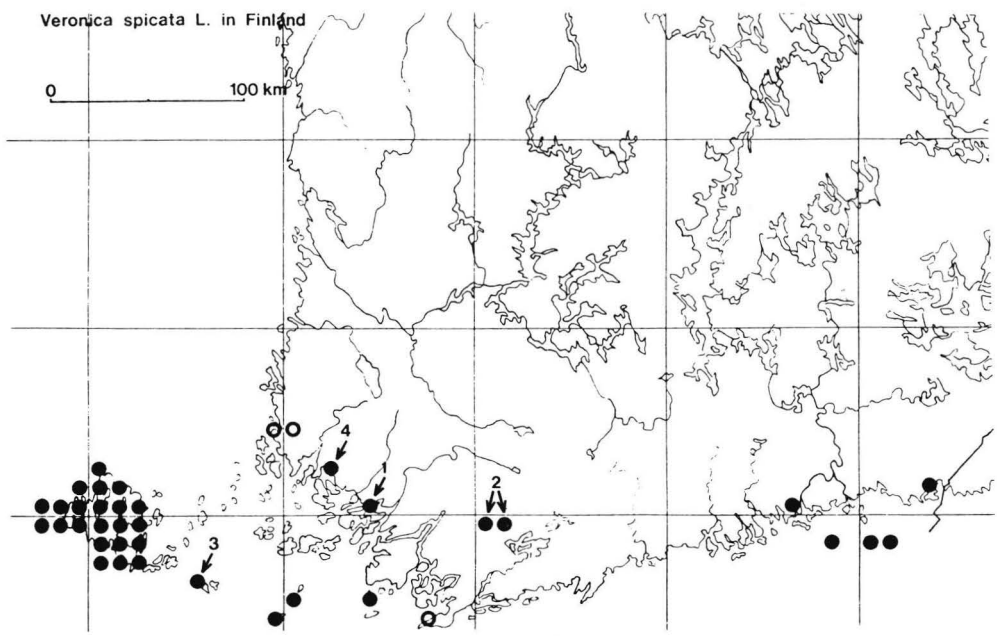
Thyme, Thymus serpyllum L.

Thyme is ecologically quite different from the Dropwort. It is a plant of eskers (Jalas 1950), but also occurs on dry hill sides, e.g. on terraces, or on shallow soil on top of rock outcrops. In some localities on the southern coast of Finland, it is considered to mark the sites of ballast heaps.

Some of the localities in Paimio (Map 3) may be considered native; e.g. those above the 40-m contour line on hill slopes E of Spurila in central parts of the parish. It is probably also native in some dry, sandy localities in southern Paimio. However, the sites where it grows close to the Dropwort, e.g. along the Paimio River banks, show that it has clearly gained from human activities (see also »local apophytes» in Ahti & Hämet-Ahti 1971: 15). It may be noted, in addition, that for some reason it seems to be mising from Piikkiö, the neighbouring parish to the west of Paimio.

The Spiked Speedwell, Veronica spicata L.

The Spiked Speedwell occurs sporadically in southern Finland, being fairly common only on the Åland (Ahvenanmaa) Islands. It does not grow in Paimio. In distribution map 4 each dot represents one 10 × 10 km square.



Map 4. Distribution of the Spiked Speedwell in Finland. Numbers: – 1, location in Kuusisto; – 2, locations in Kisko and Suomusjärvi; – 3, Kökar; – 4, location near Naantali. Extinct occurrences shown with circles.

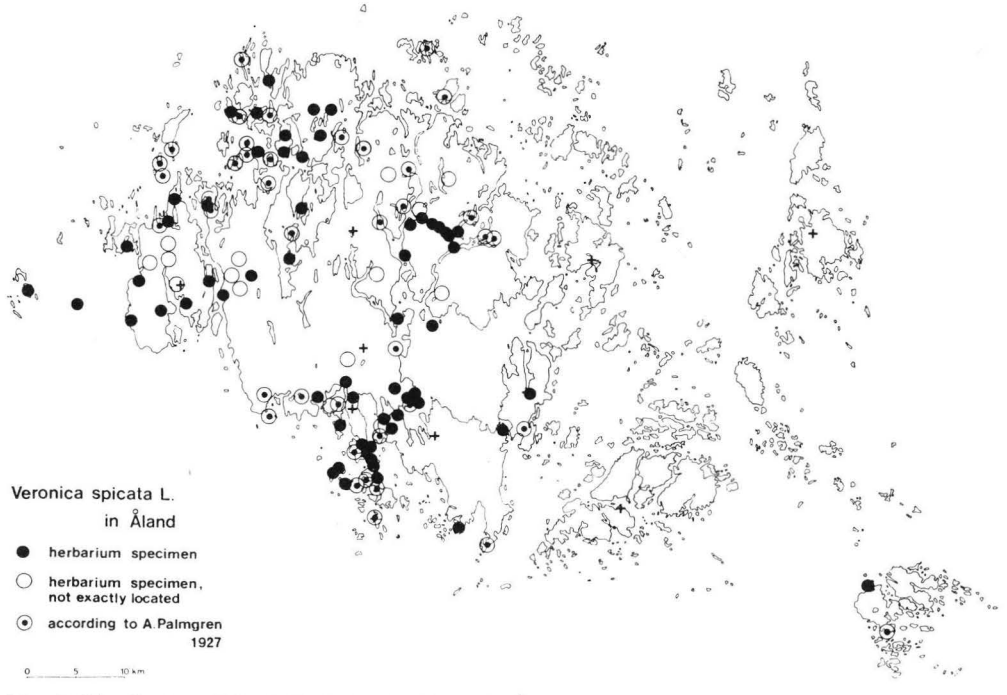
The Spiked Speedwell is first mentioned from Finland in a hand-written note »Copiose in Kustö» (Kuusisto), probably by Johan Leche c. 1750, in an annotated copy of »Catalogus plantarum . . .» by Tillandz (1683), preserved in the Library of the University of Helsinki (1 in Map 4). At present it occurs in four sites on Kuusisto Island, all quite near the ruins of the medieval Bishop's Castle. The castle was situated on the eastern tip of the island, just across the bay from Piikkiö church village.

On both sides of the border between the parishes of Kisko and Suomusjärvi in SW Finland (2 in Map 4), the Spiked Speedwell is most probably native. Five localities are known there today, all in an area of less acidic rocks and all from c. 80 to 120 m above the present sea level. All other localities in Finland are below the 20-m contour line.

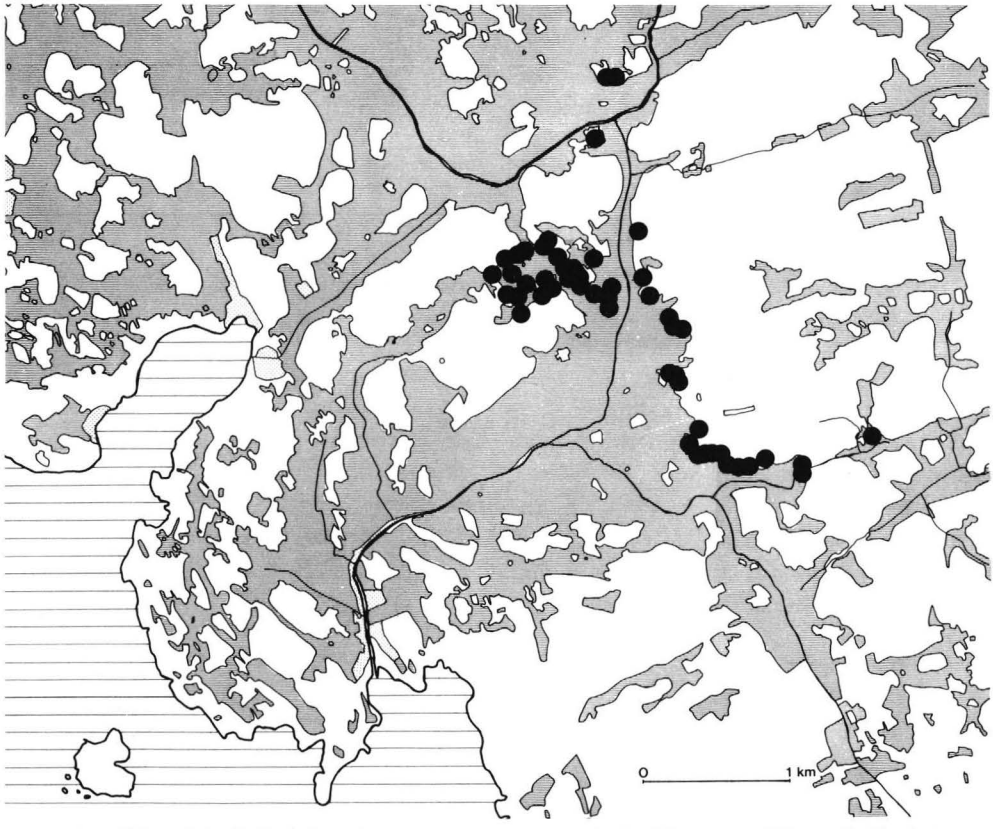
On the Åland Islands (Map 5), in most of its eastern localities, the Spiked Speedwell shows a clear connection with ancient human activity. For example, it is frequent around the remains of the medieval Franciscan Cloister in Kökar, active in the later part of the 15th century (3 in Map 4). A few kilometres south of the cloister ruins it also occurs on the site of the Old Seafarer's Chapel, whose location is indicated in the Danish sea itinerary from Denmark to Estonia in the 13th century.

On small islands NW of the Åland mainland, the Spiked Speedwell grows on rock outcrops right by the sea, on most of which it is evidently independent of man's activities.

The occurrence of the Spiked Speedwell indicated as a single dot (4) in map 4 at the border between Masku and Naantali, in fact represents no less than 50 sites (Map 6). My attention was first directed to its frequency in this area by Mr. Onni Silkkilä. Here, the Spiked Speedwell grows on rock outcrops or in meadows nearby. The



Map 5. Distribution of the Spiked Speedwell on the Åland Islands. Signs: ●, herbarium specimens; ○, herbarium specimens not exactly located; ⊙, according to Palmgren (1927).



Map 6. Localities of the Spiked Speedwell in an area c. 4 km NNE of the town of Naantali. Shaded areas represent fields and meadows.

rock outcrops border fields, which must have been submerged under the waters of a bay until historical times; the bottom of the valley is only 1.5 m above sea level. Most of the sites are less than 10 m above sea level and the highest may be on the 15-m contour line. There are also indications that the rocks are less acidic here. The species produces abundant good seeds and man's more recent activities, e.g. cattle keeping, have clearly favoured local spreading. Since cattle keeping is no longer practised, the number of sites may be reduced in the near future. It may be noted that the northernmost site, Ploomamäki, is only c. 400 m S of the site where the Cloister of Naantali first started its activities in 1438. The site, however, was most likely inhabitated long before that.

Discussion

An attempt to read from the present flora details of events that probably happened 1000 years or more ago in a given area sounds, of course, unlikely to be successful. On the other hand, several features in the present flora can be understood only, when viewed against the historical background. In estimating the role played by human activity, we necessarily have to start from the situation before it commenced, although within 1000 or 2000 years the flora would naturally undergo considerable

changes even without the influence of man. The nature of the problem has been recognized before, also in Finland (Linkola 1916). However, the prospects of success may be somewhat better in Finland, where large areas of forest still remain, in comparison to the situation in Central Europe. E.g., about half of the area of Paimio parish is still forested today. The nature of these fundamental difficulties is evident from the few examples presented. An attempt to assign the definitions given above to the chosen species helps to make the problems more concrete.

It is difficult to decide whether the Dropwort is an alien in the flora of SW Finland or a native species greatly favoured by man's activities. Kalela (1961) has examined the distribution of southern elements in the Finnish flora without taking into consideration the human impact. Aspects of the influence of man were dealt with by Jalas (1958), partially with the same species. We know now that the Dropwort was most probably growing in Paimio in c. AD 200 (see above), but whether as an alien or a native species remains an open question. If it is considered to be an alien, we may call it an archeophyte. Lindgren (1960: 53) is tempted to accept this.

Thyme is not generally thought to be greatly favoured by man's activities, although its use originates from ancient times. In Paimio, it has clearly benefited much from human interference, occurring, for example, on grazed river banks. It is, however, most likely native in Paimio and, thus, by definition, is not to be called an archeophyte; it is an apophyte.

The Spiked Speedwell occurs in Kisko and Suomusjärvi c. 100 m above sea level on less acidic rocks, remote from present settlements. It may thus be taken as a relict from one of the postglacial climatic periods. The other sites in Finland are around or below the 20-m contour line. The historical record of the species in Finland goes back only 230 years, with some evidence connecting it to medieval sites. Such occurrences may well be of archeophytic origin.

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