Wooded Meadow Gardening in Southern Sweden during the Past Centuries

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Abstract

The fruit tree meadows in Southern Sweden is a phenomenon interconnecting horticulture and agriculture as well as the garden and the landscape. Wooded hay meadows close to farms and villages were at least in the 18th and 19th centuries, not only a place for winter fodder collection, but also a substitute for formal gardens by houses. Here, the farmers kept their fruit-producing trees. From the end of the 19th century, the role of the wooded meadow was reduced. The exception is some remote areas in the woodland region of Southern Sweden where wooded meadows were transformed into fruit tree meadows. In these areas, the vestages of fruit tree meadows are still to be seen. This article presents a succession model characterising the development and the decline of the fruit tree meadow, and gives an overview of the structure, tree pattern and plant types of the meadows. The results of this study show that the Swedish fruit tree meadow in principle developed from a deciduous forest plant community with the wooded meadow as an intermediate stage. The grafting of wild-growing seedlings of fruit trees gives a very irregular and natural character to the system, distinguishing it from the common type of fruit tree meadow in Central Europe.

INTRODUCTION

In Sweden, there are records from at least the 17th century about farms and farming villages keeping fruit-trees. However, it is known that long before this, the agrarian population in Southern Sweden that practised pig breeding favoured wild-growing fruit trees (especially crab apple) as forage complement (Linnaeus, 1977; Sjöbeck, 1931). When fruit growing skills and proficiency were introduced to the countryside of Southern Sweden, the wild-growing fruit trees were used as rootstocks not least in the wooded meadows that constituted the main part of the infields. The meadow-based fruit production system in Sweden reached its zenith in the first half of the 20th century and has since been replaced by more intense and rational systems based on dwarf trees planted in arable fields. Today, the remaining fruit tree meadows in cultivation cover less than 25 hectares and are concentrated to an area by Lake Åsnen in the southeast of Sweden.

The phenomenon of meadow-based fruit growing or fruit tree meadows, (also called meadow orchards and in German 'Streuobst Wiesen') is known from most parts of temperate Europe with an east-west, central belt that stretches through France, southern Germany and Switzerland to Poland (Herzog, 1998 and 2000). This has been described in articles and books over the last 30 years focusing on ecological, visual, socio-cultural and economic functions and values (Weller, 1981; Lucke, 1985; Lucke et al., 1992; Herzog and Oetmann, 1997; Ruzickova and Halada, 2005; Thieme et al., 2008). The Swedish fruit tree meadow seems to differ from the typical central European type by being located in semi-natural hay meadows and by the grafting on wild growing fruit trees as the main propagation method. They have been described in a few popular articles and books in Swedish with the main focus on the cultural and visual aspects (Gunnarsson, 1990, 1997;

Hallberg, 2008). However, there has been non scientific data published to date on this theme. The aim of this article is to give an overview of the landscape-based development of the phenomenon. In addition, it describes the main patterns and structures and information about the varieties and cultivars of fruit trees grown in the meadows is presented.

MATERIALS AND METHODS

The study is based on the following three main sources. The first and most important is the remaining fruit tree meadows by Lake Åsnen. These were inventoried between 1989 and 1992 taking into account: soil condition; plant species and plant communities; fruit varieties; tree pattern; vegetation structures and maintenance levels. Since then complementary surveys have been made noting species- and tree-stock changes, as well as changes in their preservation. In connection with this fieldwork, the fruit growers were interviewed.

The second source of knowledge has been documentary evidence found in archives such as photos, account books, social history records, and land survey- and land reform maps from the last 250 years. Published literature predominantly from the 19th and 20th centuries within the realm of horticulture, husbandry, social history, ethnology, cultural landscape history and botany, is the third main source in this study (Klingspor, 1912, 1925; Sjöbeck, 1931, 1932, 1942; Sörlin, 1942). However there is a paucity of literature about fruit tree meadows. This can be partly explained by the fact that the farming population (being the real experts) was poorly literate. Moreover the phenomenon was often overlooked by the literate elite as it took place in a remote area, was characterised by a high rate of integration in natural landscape patterns and lacked the recognisable row-planted appearance of normal orchards (Gunnarsson, 1997).

By looking at the growth, extension, structure, plant material and the working methods of the fruit tree meadows using the described sources in a critical way, a rather distinct and scientifically reliable result has been achieved.

RESULTS AND DISCUSSION

The study area is situated in a mixed forest region dominated by Norwegian spruce (*Picea abies*), beech (*Fagus sylvatica*) and pedunculate oak (*Quercus robur*) on rather plain to slightly broken ground in close relation to a climate-regulating large lake. The dominating soil type is a sandy moraine with a low clay content and a pH-value around 5-6. In the fruit tree meadows the most common field layer types are common bent respectively viper's grass meadows (*Agrostis capillaries-Alchemilla* spp.-*Trifolium repens* respectively *Leucanthemum vulgare-Scorzonera humilis* meadow types) and to a certain degree of herb-rich heather heath type (*Calluna vulgaris-Hieracium pilosella* heath type) where the habitat conditions are more dry and pore (Nordiska Ministerrådet, 1998). Where not affected by fertilizers the meadows are rather rich in species. As part of the field layer, scythe trained tufts of trees and shrubs are growing next to rocks and amongst mounds of stones as relics of the forest- and wooded meadow periods.

Principle Development of the Fruit Tree Meadow

The origin of the typical fruit tree meadow is probably a forest plant community on rather fertile soil dominated by deciduous and to a certain degree broadleaved tree species like small-leaved lime (*Tilia cordata*), ash (*Fraxinus excelsior*) and pedunculate oak (*Quercus robur*) and in the under story species like hazel (*Corylus avellana*), guelder-rose (*Viburnum opulus*) and crab apple (*Malus sylvestris*). For at least 1000 years woodlands of this type in close proximity to permanent human settlements have been developed into wooded hay meadows with a mixture of open glades and groups of trees and shrubs producing winter fodder (both hay and leafs from the coppiced and pollard trees and shrubs). In the wooded meadows the wild-growing fruit trees were favoured and the fruits used both as forage and food (Sjöbeck, 1931, 1932 and 1942).

When the grafting technique as well as good varieties of fruit reached the farming

population of the region (probably 300-500 years ago), the wild growing fruit trees were used as rootstocks and were grafted where they happened to grow. From the end of the 18th century and up to the middle of the 20th century a growing market for fruit gave rise to a gradually transformation of the wooded meadows with scattered fruit trees into more or less pure fruit tree meadows (Gunnarsson, 1990; 1997). During the last 50 years, most fruit tree meadows have been abandoned, reverting rapidly to deciduous woodland plant communities when the tufts of trees and shrubs are no longer trained.

Tree Pattern and Structure of the Fruit Tree Meadow

As the wild seedlings of fruit trees (mainly crab apple-plants) are grafted where they happen to grow, the tree pattern of a fruit tree meadow is very irregular with a varied distance between the trees from less than half a meter up to 15 to 20 meters. Fruit tree meadows being continuously rejuvenated, consists of a free mixture of young and old trees and of different kinds and varieties of fruit. The asymmetrical and natural-like layout of the Swedish fruit tree meadow (being a variant of the semi-natural Scandinavian wooded hay meadow) is quite distinctive from the symmetry and order of a row-planted orchard. In structural terms the fruit tree meadow can be described as a half-open low woodland type of stand. The height and shape of the trees is influenced by age and type of rootstock, but also by maintenance and land-use in addition to fruit growing. If the meadow is grazed after the hay-harvest the trees usually are grafted at a height of almost 2 meters and the crowns of the trees are kept on this height to avoid grazing and damage to the branches. Without grazing the trees could be kept lower in order to facilitate maintenance and the picking of fruit.

The Most important Kinds and Cultivars of Fruit

Apples and to some degree pears have been the most important kinds of fruit grown in the meadows. In the self-sufficiency directed economy that was common up to the beginning of the 19th century, the varieties of fruit were mainly local or regional, originating in seedlings found in the landscape. An increasing market orientation during the 19th century created the opportunity for national and to some extent international cultivars like *Malus* × *domestica* 'Vitgylling', 'Grågylling', 'Järnäpple', 'Melon' and 'Åkerö' and *Pyrus communis* 'Augustipäron' and Kanelpäron'; although the most commonly grown variety of apple was the regional cultivar *Malus* × *domestica* 'Urshults Kungsäpple' (Klingspor, 1912; 1925). In the beginning of the 20th century some farmers specialised more towards fruit growing and new international cultivars of apple were grown like *Malus* × *domestica* 'Cox´s Orange', 'Gul Rickard', 'Gravensteiner', 'Signe Tillisch' and 'Ribston' and of pears like *Pyrus communis* 'Greve Moltke' and ' Doyenne du Comice'(Klingspor, 1912; 1925). Continuous new cultivars have been brought into use in the study area and today *Malus* × *domestica* 'Lobo', 'Ingrid Marie', Aroma' and 'Summered' are among the most important.

CONCLUSION

This investigation of the fruit tree meadow system makes clear that it represents a meeting between horticulture and agriculture and between gardening and wooded meadow cultivation. It has even been stated among social historians that in areas where the wooded hay meadow tradition was strong, the wooded meadow played the role both aesthetical and functionally of a garden substitute (Sjöbeck, 1932; 1942). This was especially the case in areas of fruit tree meadows with the result that symmetric gardens in front of the houses were introduced late. The wooded meadow type with fruit trees has been an inspiration to the garden art development in Sweden during the first half of the 20th century strongly influencing the design of parks and residential areas.

The social history values as well as the ecological values of the fruit tree meadow culture in Sweden are strongly connected to the vegetation system and the maintenance of this system. Therefore the handicraft skill of the remaining orchard meadow farmers is of great importance. When these fruit tree meadows have been in use and productive the

fruit cultivars have been gradually exchanged. Thus the authenticity of the fruit tree meadow heritage is not so much connected to preservation of old cultivars as to the qualities and maintenance of the system. If the maintenance ceases, the fruit tree meadow as well as the fruit trees degenerate and the vegetation system reverts to the stage of a deciduous forest. This means this heritage is very vulnerable as so much lies in the hand of a few rather old transmitters of tradition.

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Figures

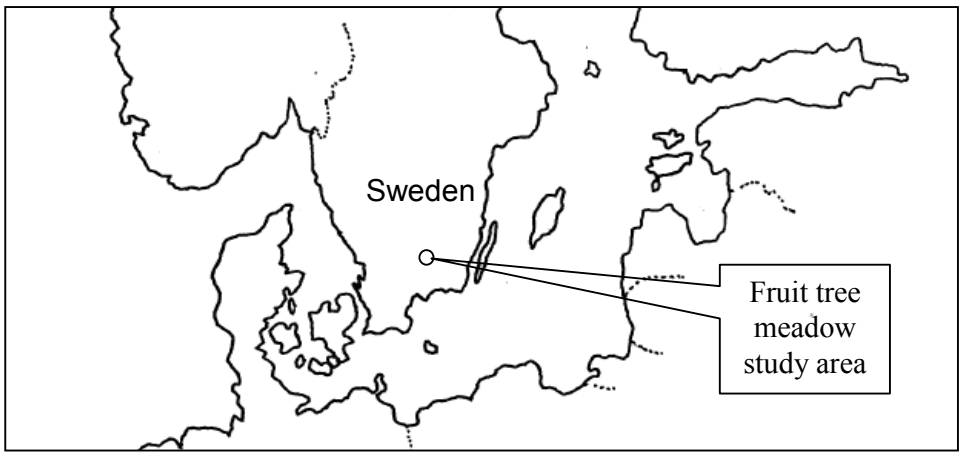

Fig. 1. The position of the study area in the southeast of Sweden.

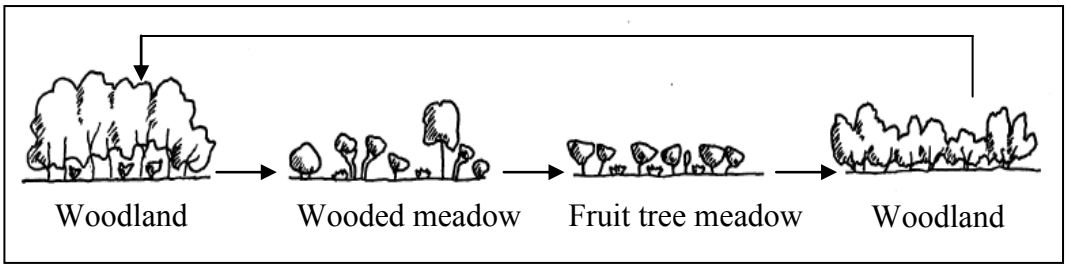

Fig. 2. Succession model showing the principal steps of a fruit tree meadow development from woodland through a wooded meadow stage and back to woodland when abandoned.

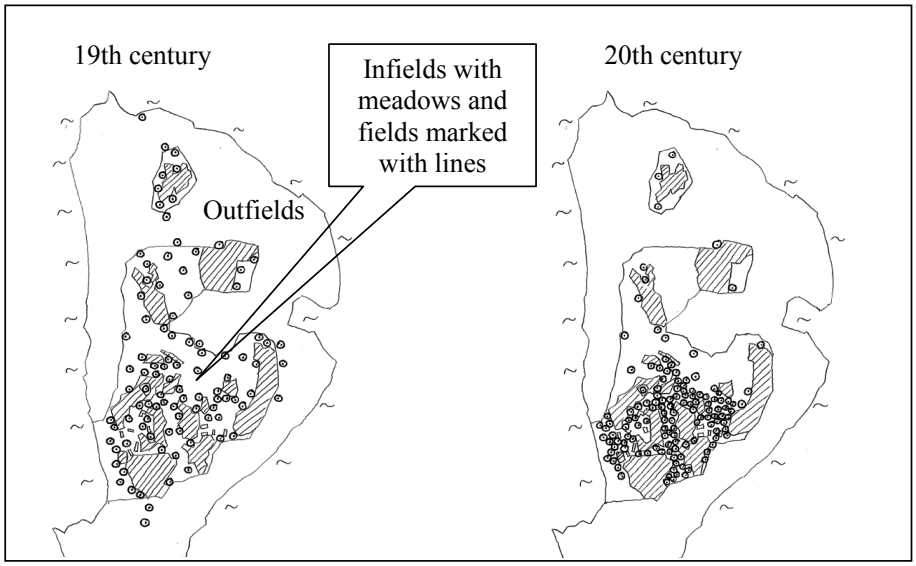

Fig. 3. To the left a typical village from the 19th century with scattered fruit trees mainly growing in the wooded meadows of the infields and to the right the same village in the first half of the 20th century with the fruit-trees concentrated to the meadows close to the houses.

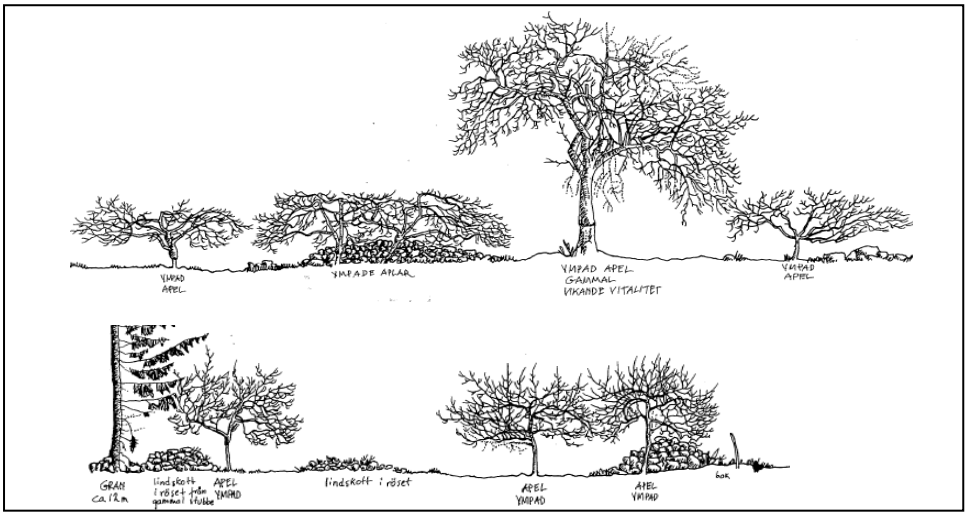

Fig. 4. The structure and tree-forms in two fruit tree meadows. Above fruit-producing and trained trees kept low with except for a very old tree and below a meadow with rather free-growing trees and sprouts of lime amongst the mounds of stones.