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Swidden Cultivation in Finland as a Cultural System

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Swidden Cultivation As a Means of Livelihood

An Iron Age Economic Practice

Eastern Finland was one of the last areas of the swidden culture in the European coniferous zone in historical times. In addition to the settlers of Savo and Karelia, swidden cultivation techniques were familiar to the various peoples of Northern Russia, who settled areas further to the north. In the Baltic-Finnish area, swidden cultivation and the closely linked practice of animal husbandry were new economic practices and forms of livelihood in the Early Metal Period and came into use in the coastal areas of Lake Ladoga and the Gulf of Finland around 3500 years ago in the so-called Early Proto-Finnic Period.(1 At that stage farming populations were distributed along the coastal zone of the Gulf of Finland, extending from the Baltic area to the eastern end of the gulf and via the Karelian region of Lake Ladoga (Vuoksi) to the archipelago of SW Finland and the Åland Isles and finally to the river valleys of the provinces of Satakunta and Ostrobothnia. In the Viking Period during the Late Iron Age the inland regions of Satakunta and Häme were colonized and settlement gradually spread into the inner parts of Finland. By the end of the Iron Age village-type farming settlement had spread throughout most of southern Finland from the province of Satakunta to Lake Ladoga. The coastal and cultivated areas of the south were contrasted by the inland, the regions of Eastern and Northern Finland, which were the territory of the Sami fisher-hunters.

At first animal husbandry and cultivation supported the wilderness exploitation economy, intensive use of marine resources and hunting, but in the course of time a structurally distinctive ecosystem came about, which can be called the cultivating/hunting economy or the culture of swidden farmer. In the settled areas of Southern and Western Finland intensive farming – i.e. the agrarian peasant culture – established itself as early as medieval times. On the other hand, the swidden farmers of Eastern and Northern Finland began to expand their settlements after the 10th century. This spread of settlement was at its most intensive in the 16th and 17th centuries during the period of the Savo-Karelian expansion. In the late 18th century, the swidden farmers began to spread to the last boundaries of the Sami area, i.e. beyond the so-called Lapp frontier in Lapland. Applying their techniques of burn-clearing, the settlers from Savo spread to Norrbotten in Northern Sweden and occupied areas as far south as Vermland in the forested regions of Sweden.(2 In the 17th and 18th centuries the swidden farmers took under cultivation areas, which the field cultivators could not utilize. In the outlying regions of Eastern Finland and Karelia, the economy based on the utilization of wilderness resources remained in function until the late 19th century (map 1).

The swidden economy was part of the Savo-Karelian culture as one of the basic structures (core elements) of its ecosystem. It is probable that Iron Age wilderness farming communities in the coastal regions of the Gulf of Finland and Lake Ladoga were the places of origin of the old metre and its style of recital as well as the pre-Christian farming rites among other features. The "ancient religion" of the Finns and the “Kalevala”-related culture were part of the

heritage of the early swidden period.

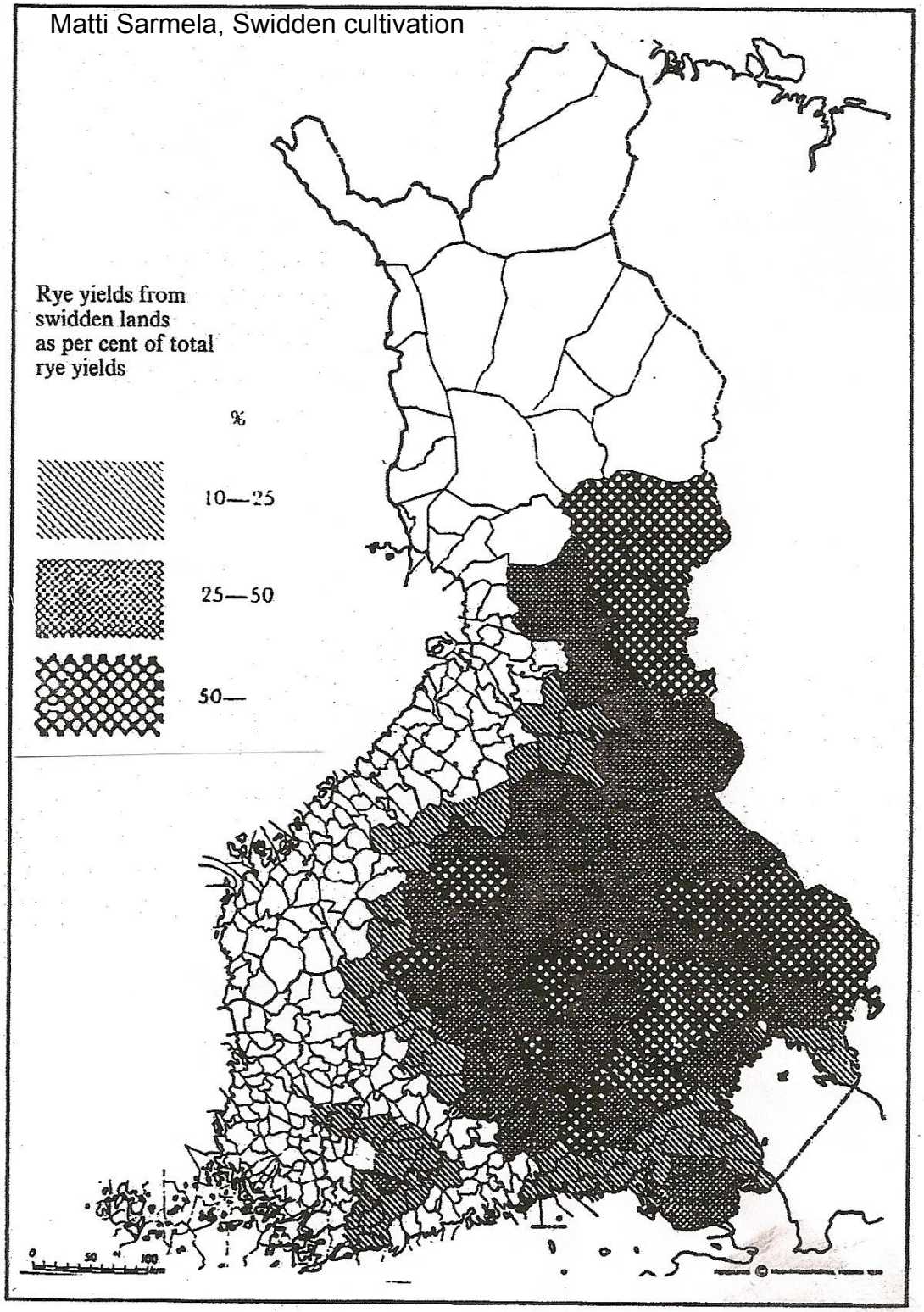
Farming Techniques of the Swiddeners

Swidden and field cultivation were two completely different techniques of cultivation, adapted to different environmental conditions. In all locations, burn-clearances were cultivated in sloping and hilly terrain, e.g. on mountain slopes, where there was no need for ditches to lead away rain water. The slopes could be burn-cleared evenly by drawing burning tree trunks and brushwood downhill along the slope. Swidden techniques were especially well adapted to the hilly terrain of Eastern and Northern Finland. In Savo and Karelia the loose mineral soils of the hills and ridges had been preserved and the fertile forested slopes extended to the highest parts of the hills. At the bottom of the slope there would often be a bog or a lake. In following the swidden areas, settlement spread along the hills, from where the settler could see far into the surroundings, to his clearances and fishing waters.

In the field cultivation areas of Western and Southern Finland the fertile mineral soils had been washed into the valleys by the effects of the last Ice Age. Typical landscape types of these regions are river valleys and plains bordered by outcrops of bedrock with pine forest. These had been islands in the ancient seas following the Ice Age. The bedrock slopes were unsuitable for swidden cultivation and the earliest swidden areas were limited to the banks of rivers and lakes.

Map 1
The swidden regions of Finland in the 1830s
(Soininen 1974, map 2)

Swidden cultivation was practised in Eastern Finland and Karelia alongside field cultivation until the 20th century. In the easternmost



regions and in Dvina intensive field cultivation came about only in the late 19th century. East-Karelian regions in Russia (Dvina and Onega) are not marked on the map.

Natural conditions also drew boundaries between the areas of field and swidden cultivation in Finland and had effects on the differences between the Finnish tribal cultures. In the river valleys of Western and Southern Finland with their clay soils, swidden cultivation was obviously only a technique of Iron Age land clearing, which rapidly gave way to cultivation with the plough and hoe. In the medieval period peasant culture became established in Southern Finland and in the 18th and 19th centuries acquired an increasing number of the structural features of European agrarian culture.(3 On the other hand, the settlement of the hills of Savo-Karelia (i.e. Eastern and Northern Finland) was predominantly of the swidden culture as late as the 19th century. Even later, agriculture in the eastern regions made use of small-scale diversified economic practices as opposed to the plains farming of Western Finland.

Diversified Swidden Agriculture

Swidden farming was well suited to the natural growth and renewal of the forests of the coniferous zone, i.e. their ecosystem. In the north the forests were renewed through fires, caused by lightning in the old virgin forests. In the burnt soils deciduous species, mainly young birch, were the fastest to grow. Later the mixed forest, dominated by deciduous species, changes to coniferous forest and finally after 100-150 years becomes wilderness forest. The common swidden species

of grain were best suited to growing in birch ashes. Thus, the burn-clearances had to have "white trees", birch and alder, whose leaves nourished the soil better than the resinous conifers and their needles. The burn-clearances that had been left to revert to forest (Fi. *aho*) naturally grew deciduous species and the areas cultivated by the swidden farmers were the birch-overgrown hills, on the slopes of which the holdings or the extended families marked out or occupied each year as much swidden acreage as they felt they required. In earlier times and until the 19th century in the more remote regions the burn-clearance areas could be freely claimed. However, along with government controls of new settlement (since the 17th century) the privileges of the tax-paying holdings became regulated and the former freedom of the wilderness period started to come to an end. The founding of taxpaying holdings, commercial swidden farming and finally the division of land on the basis of private ownership gradually changed the structures of the original, Iron Age swidden farming culture. In its original form the swidden culture survived only in the outlying regions of Karelia (Dvina) and Eastern Finland.

The techniques of swidden farming have varied over the centuries and they have been adapted to local conditions, soils, forests and even the growth conditions of local grain species. The techniques of cultivation have been given different classifications in the literature, but in general swidden practices can be divided into two main forms: (1) burn-clearing of coniferous forest (Fi. *huuhta*) and (2) burn-clearing of deciduous forest (Fi. *kaski*). Because the original virgin forest was coniferous, the huuhta clearances were felled by the new settlers and the permanently residing swidden farmers when taking new lands into use. However, wilderness areas were especially felled in joint burn-clearing ventures for commercial purposes. There were two basic methods of cultivation in utilizing clearances of coniferous forest. (a) The coniferous wilderness forests were converted to deciduous growth through drying. This was done by ring-barking the spruces or pines gradually from the base and letting the needles and trunk dry. The ring-barked and dried forest (Fi. *pykälikkö*) let light through to the ground, starting the growth of grasses and deciduous trees; the coniferous forest areas could be left ring-barked for periods of over ten years. The other technique (b) was apparently based on the use of a special species of swidden rye. The conifer clearance could be sown already in the third year and the crop could be harvested the fourth summer after clearing. The rye clearance was often burned over during two summers, whereby the nutrients were better absorbed into the soil and the resinous (acidic) effect of the needles was decreased. Swidden rye was the only successful species in the coniferous clearances and usually only one crop of it was grown.

It is possible that the Iron Age practice of swidden cultivation was based on the drying or ring-barking of conifers, which could well have been applied already in the Bronze Age and even earlier in Stone Age conditions. Ring-barked

and dried timber could be felled by burning with the largest trees left standing. Trees were also left to fall by themselves in the autumn storms. The ring-barked burn-clearances also grew barley, which is the oldest grain species in Finland. The new technique of clearing coniferous forest, based on the growing of rye, apparently came into use in the 16th-17th centuries and made possible the Savo-Karelian expansion of settlement. This form of cultivation was also used by the Finns in Sweden.(4

Under normal conditions a household involved in swidden cultivation would clear and cut down older plots that had been burned over previously and such a clearance would give three or four crops, rarely more. At first rye or barley was sown. These were "heavy" species of grain requiring many nutrients, after which the clearances were used to grow turnips, sometimes flax and from the late 18th century onwards, oats. The growth of new forest suitable for cultivation took 15-20 years and 30 years or more in the northern regions. The clearances of deciduous forest were usually felled in the early summer, when the leaves were full-grown, and burned over the following spring. Only in exceptional situations was the clearance felled, burned over and sown in the same summer. The sowing periods varied according to the species grown. In the north rye has been a so-called autumn grain, which will keep over the winter under the snow and can be harvested the next year. The variation of grain species was also part of the natural ecosystem, the varied economy. The clearances of deciduous forest that had been cultivated for several years had to be worked with a special type of forked plough with an upright end part suited to the stony soil with its many roots. In the cultivation of the conifer clearances the seed was sown straight into the ashes and the plot was not even cleared of un-burnt timber. The seed was covered over with a wooden hoe or harrow of branches; the latter was often the branched top of a spruce.(5

The clearances that had been left to grow over were good pastures for cattle and also provided leaves for winter fodder and whisks for the sauna. As the birches grew they also provided bark for containers and other purposes.(6 The clearances were often rich in berries and birds. Game such as rabbit, deer and elk often found their way there. The swidden farmers also cleared alluvial pastures on the riverbanks and on the bogs for the cutting of wild hay. Along the large rivers, as for example in the 19th century in Kainuu in the Oulunjoki river system, the burning of tar and its transport to the towns on the coast provided a considerable part of the farmer's yearly income.(7

In addition to swidden cultivation and animal husbandry, hunting, trapping and fishing retained their position especially in Karelia. Fishing saunas were still built on the shores of lakes and during the spring fishing, periods of up to several weeks were spent there. The farms and holdings also had their own trapping routes in the forests with lures and traps

for forest fowl and fur animals. Trapping was practiced in the autumn until the first snows. In the spring when the surface of the snow had hardened enough to bear skiers elk and deer were hunted as well as bear from its winter lairs. The wilderness farmer used the natural resources of a wide area. The structure of the economy is reflected by the number of forest saunas. These were built at fishing sites, along trapping routes, at the forest meadows and burn-clearances. At far-off burn-clearances threshing sheds were sometimes built. In his immediate environment the swidden farmer had burn-cleared forests of different age and different types of clearing, some of which were ring-barked and drying, some felled and awaiting burning and some growing crops. As a farming system the swidden practice was varied in its use of natural resources and in its own environment it was among the most developed forms of multiple economy practised by man in the northern forests.

Swidden Cultivation As a Form of Production

What then was the nature of swidden farming as an economic or ecological system of production? This point can be discussed in terms of comparisons with the rice cultures of Thailand. In South-East Asia different techniques of farming and cultivation are still used simultaneously and comparable empirical data is available. The data refers to tropical cultivation, but the results can be assumed to have been similar in Finnish conditions as well (table 1).

In comparing the forms of cultivation from the point of view of swidden techniques the following conclusions may be reached:
1. Swidden cultivation is productive without a very large input of labour or large investments. Bumper crops are bigger than in any other form of cultivation in a natural economy, but there are extreme differences between crops. Bigger crops can be obtained only with artificial fertilizers and modern
technology.(8
2. Transition from swidden practice to field cultivation, e.g. the planting of rice (irrigation cultivation), has provided better opportunities to regulate and control growing conditions, eliminate the effects of changes in the weather (trenching of fields) and peaks of labour use (i.e. so-called ecological crises). Swidden cultivation is an uncertain means of livelihood requiring a diversified technique of cultivation, e.g. plots in different stages of clearance and use.(9

Table 1

Structures of cultivation systems

(According to Lucien Hanks, Rice and Man 1972)

Structure	***Swidden cultivation***	***Field cultivation***	***Irrigation cultivation***	***Industrial cultivation***
Land requirement	very great	small	very small	great
Investment	very small	small	great	very great
Labour requirement	small	great	very great	very small
Productivity	good	small	great	very great
Settlement	impermanent	house groups	villages	isolated houses
Family	extended	household	compound	nuclear family
Property	labour	tools	irrigation	technology
Distribution of production	within labour force	within family	within family and village	own consumption
Production deology	independence	self-sufficiency	self-sufficiency (of village)	commercial maximization

3. Swidden cultivation requires few investments, but it does not create much wealth. In a swidden economy the private ownership of land is not known in the same sense as in field cultivation. Labour is more significant than owning the means of production. In Finland, the axe was sufficient as an implement of labour. In the working of the burn clearance all of the implements and tools were made on the spot (hoes, branch harrows) and the only permanently used and kept implements were the light ploughs (Fi. sahra, hankoaura) that came into use in the 17th and 18th centuries.

4. Swidden cultivation requires additional means of livelihood. The mean acreage of cultivated land is small and the swidden practice was usually linked to an intensive utilization of wilderness resources, gathering, hunting and fishing, or field cultivation in its early stages. Some of the burn-clearances were cleared into fields.

5. Swidden cultivation requires large reserves of land for the ecosystem to remain in balance with the natural environment. It is better suited to small independent economic units rather than dense village type settlement. Mean population is usually small in the areas of the swidden cultures, about 12 persons/km2, while in the rice-planting area of South-East Asia population density may rise to 500 persons per square kilometre, which corresponds to urban settlement. Irrigated farming, like field cultivation in Finland, kept the labour force in place, guaranteed a regular income, created agrarian infrastructures, networks of co-operation and neighbourly assistance and technology that required a larger and larger input of labour.(l0

All in all, swidden cultivation is under favourable conditions extremely productive, but also uncertain on the other hand. The technique entails many possibilities for ecological crisis. Burning over the land and the growth of grain required good weather conditions and suitable soils. The swidden farmer was not able to ensure an even crop with his own efforts in the same way as the field farmer, who by trenching, fertilizing and increasing the topsoil layer each year continually improved his lands. The hunter-gatherer economy also had its own crises of ecology. The game stocks varied yearly and for example the occurrence of the major species of game fowl follows a long-term periodic cycle. The variation of game populations is part of the natural ecosystem, which man cannot affect to any great extent. The swidden farmer was not yet able to control or regulate his natural environment. Ecological security was based on a varied economy and social structures supporting a varied and diversified use of natural resources – the institution of the extended family.

The Working Year of the Diversified Economy

The working year of an extended farming family of the swidden period can be reconstructed on the basis of an ethnographic study of a North Karelian village in 1932.(11 The village had gone over to field cultivation at that stage and the former extended families had disbanded, but the interviewees had a distinct recollection of the way of life of an extended family household in the swidden period. Work acted to cultivation was begun in late winter with the felling of coniferous clearings (huuhta). These areas were best reached while the snows still had a hard crust (night frosts). Clearances in outlying areas ere jointly worked by several households and they ere cultivated for commercial purposes to obtain grain for sale. In the grown-over clearances, the growth of deciduous forest was felled later in the spring, but

was burned over only the following year, round Midsummer; the wilderness clearances were burned in July. The clearings were planted mainly with autumn grain (rye), which remained under the snow the following winter and was harvested in August-September the following year (table 2).

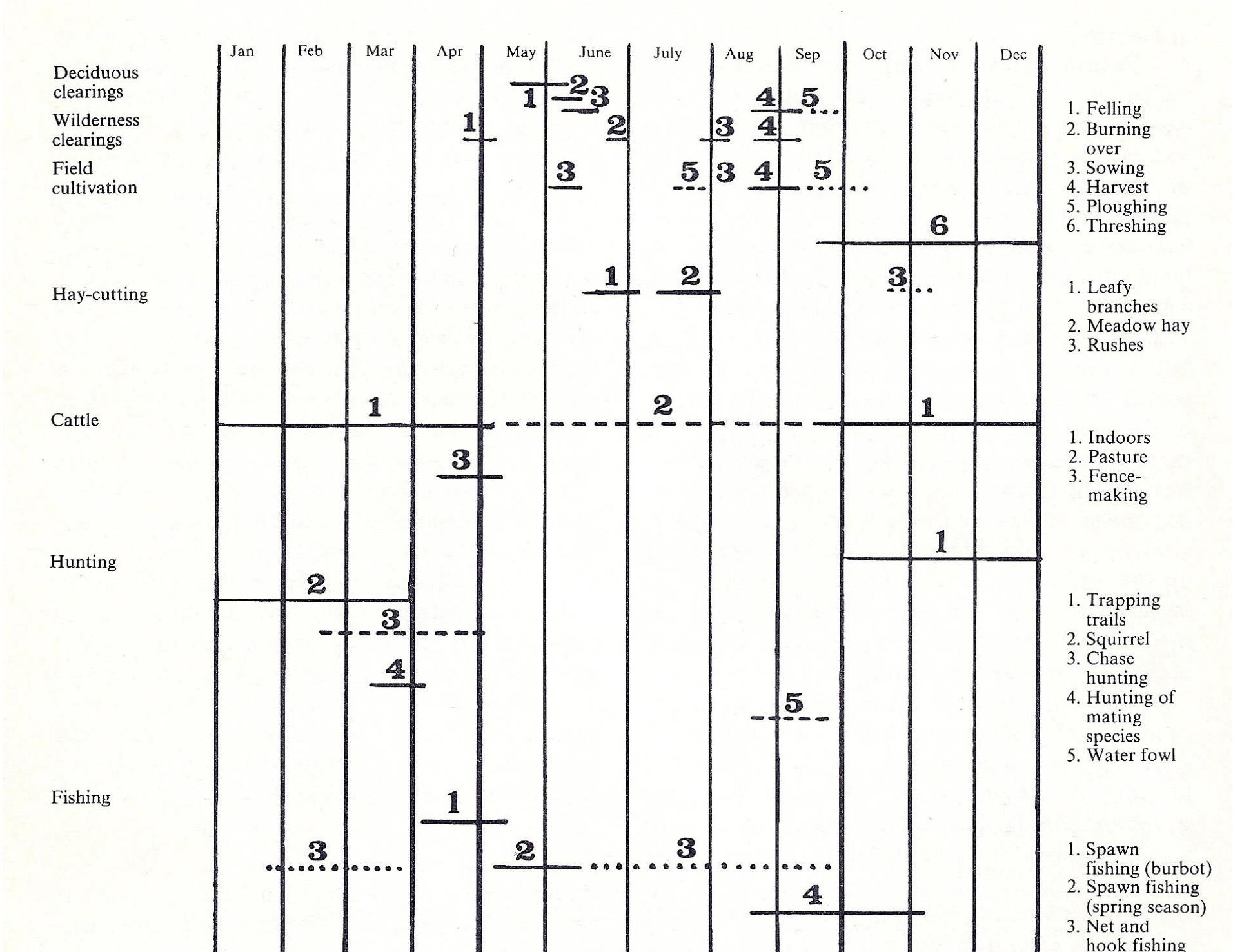
The clearances near the farms were gradually converted into fields, but the hills were stony and field clearance concentrated mainly on bogs or the drying of lakes. Along with swidden cultivation there was also increasingly intensive cultivation of permanent fields with diversification of farming work related to cultivation. The harvested grain was stored in stacks in the clearances in the fields and was threshed in drying barns in the autumn. In the Finnish threshing sheds the sheafs were dried before threshing. The sheds had chimneyless ovens and a shedful of dried grain was threshed at a time. Threshing continued throughout the autumn and from the most remote clearances the grain was taken in only with the coming of the snows. In the swidden period winter fodder was collected from natural meadows on the shores of rivers and lakes or leafy birch branches were gathered. The clearing of alluvial meadows and the fencing of fields were carried out in the spring and in the summer the cattle freely roamed the forests.

The cultivation economy was complemented by intensive hunting and fishing. Spring was the main fishing season, when at least part of the extended family – both men and women – lived at the fishing cabins for several weeks catching and salting the fish in barrels. The second fishing season was the late autumn when dragnets (or seines) were used; this practice was also carried out in winter on iced-over lakes. The hunting season began in the autumn with the

Table 2

Schematic diagram of the working year of a swidden household

Kansatieteellisiä muistiinpanoja Ilomantsin itäkylistä 1939
(Ethnographical observations concerning the eastern villages of Ilomantsi 1939)


Jan
Feb
Mar
Apr
May
June
July
Aug
Sep
Oct
Nov
Dec
Deciduous clearings
Wilderness clearings
Field cultivation
1. Felling
2. Burning over
3. Sowing
4. Harvest
5. Ploughing
6. Threshing
Hay-cutting
1. Leafy branches
2. Meadow hay
3. Rushes
Cattle
1. Indoors
2. Pasture
3. Fence-making
Hunting
1. Trapping trails
2. Squirrel
3. Chase hunting
4. Hunting of mating species
5. Water fowl
Fishing
1. Spawn fishing (burbot)
2. Spawn fishing (spring season)
3. Net and hook fishing

The diagram shows the division of the swidden household's working year into several periodical phases. Subsistence was based on swidden cultivation (two types of clearance) and partial field cultivation; the second means of livelihood was provided by animal husbandry in natural conditions, which entailed several stages of work such as the cutting of leafy branches, wild hay, rushes etc. Intensive hunting and fishing was the third form of subsistence. Hunting and fishing were seasonal in nature and limited to certain times of the year (mating and spawning, trapping routes and trails in autumn).

The whole family took part in work on clearances; hunting and fishing was often the task of the older men and children herded the cattle in the forests. In the diversified economy the tasks were allocated according to the age and skills of the members of the family and kin group.

placing of traps for birds along established routes. There were hundreds, even thousands, of traps in use and the trapping route could take several days to complete. Most of the fowl caught was sold and when fowling ended with the onset of winter, the hunting of squirrel and other fur animals began. This was also a commercial practice. In late winter elk and deer were hunted on skis and bear was hunted at its winter lairs. In the diversified economy the extended families farmed, kept cattle, hunted, fished and gathered natural produce. The working year was very varied and the tasks involved did not become as laborious or monotonous as in the agrarian culture.

The Social Structures of the Swidden Culture

Hierarchy of the Natural Economy

The swidden culture kept to a natural order and hierarchy of existence. The farm as well as the outlying forest and fishing saunas were still part of the natural environment. The yard of the farm did not follow any strict peasant-type order. The buildings were placed apart and in many places it was the custom to build smaller log buildings – sheds and stables – for different purposes and the yard could include several dozen grey log buildings. In the summer the

different families of the household would each sleep in their own granary. The farmhouse of the swidden farmer was a chimneyless cabin with a simple interior and no ornaments or decorations. In Savo and Karelia the chimneyless living rooms with their large greystone ovens remained long in use. The oven was heated once a day and food was prepared in it. Oven-made foods such as soft bread, pies, fish pasties and roasted game were typical fare of the swidden farmers not only in Savo and Karelia but also in Northern Russia. As the extended families grew in size, the log houses became larger and the ovens also grew in size. The same dwelling house was the home of a household of several dozen persons, but the basic form of habitation remained the same. The chimneyless dwelling house was made for a diversified household economy. The living room could be used as a sauna in the same way as the fishing saunas were later used. It was here that grain was dried and threshed and in winter the horses and other animals were brought indoors for feeding. In the early stages of the swidden period man still lived outdoors in his natural surroundings and not indoors as in the peasant households.(12

The swidden culture did not yet recognize the private ownership of land (13; status symbols or inherited social categories were few. A natural hierarchy existed among people where the status of an individual was based on his position in his family and his age or gender group or on his personal skills and activity.

The Extended Family

In the diversified household the extended family was the natural social structure.(14 The peak period of the Savo-Karelian extended family was especially the late 18th and early 19th centuries, when swidden cultivation as such began to decrease and new means of livelihood had to be found by clearing more permanent fields (map 2). At that stage there were joint households of up to dozens of nuclear families and a single extended family could include up to a hundred people. The extended family was usually formed by brothers joining with their families in a joint household, but especially in Savo the joint household could also include the families of daughters, unmarried and married uncles and aunts, adopted children, and even outside partners, who were not related. In the swidden period the kinship was still a flexible social structure. In the extended families the kin was segmented into a subsistence group capable of utilizing the resources of its environment in varied ways and maintaining the social security of its members. There were also many ways of recruiting kinship ties. Especially in Savo the swidden farmers adopted sons or formed joint households among themselves, i.e. formed kinship relations of a fictive or ritual nature. Written contracts on adoption

and joint ventures of families have been preserved from the 17th century onwards.

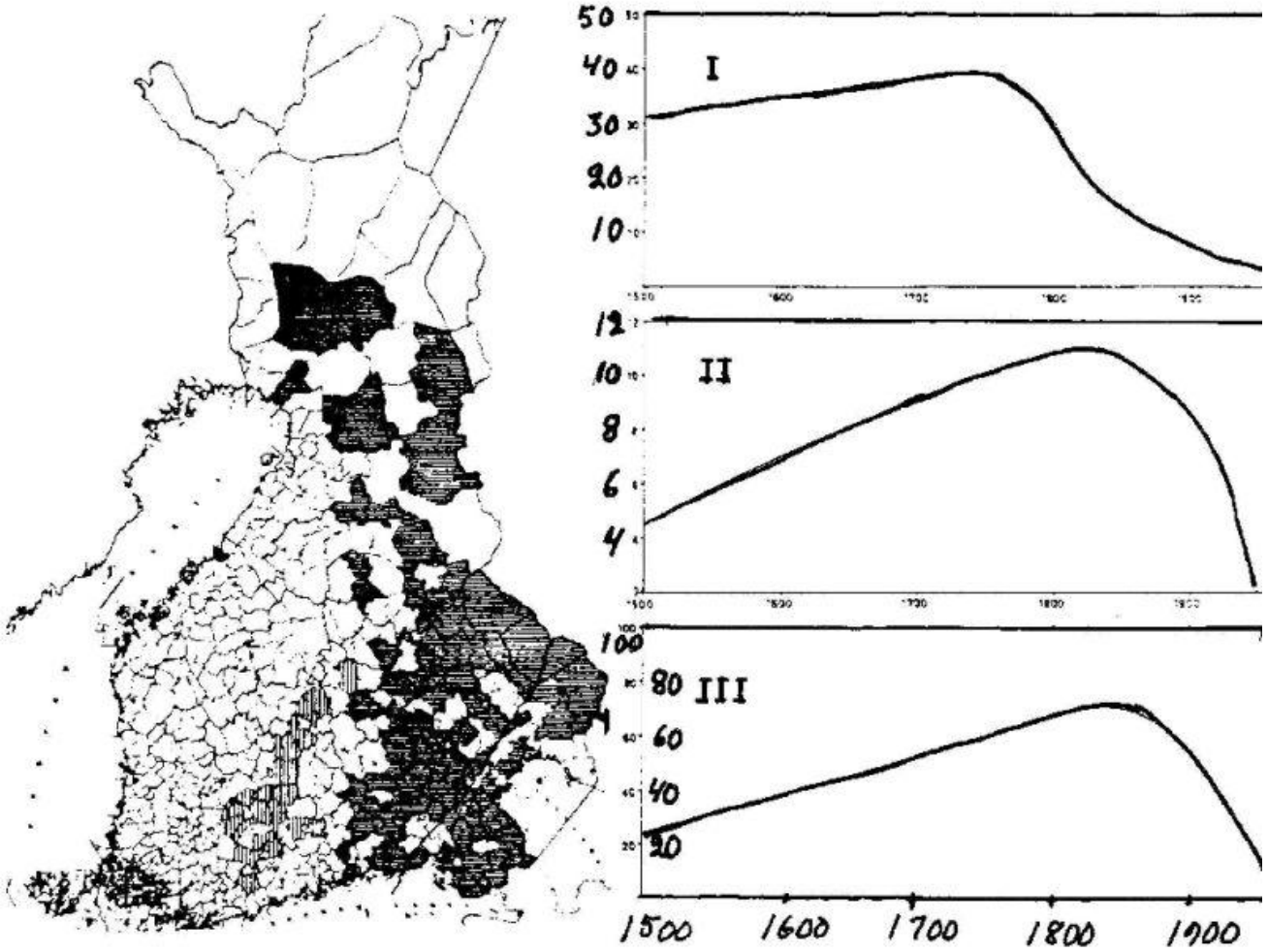
In the kinship bound community problems of labour as well as other ecological crises still had to be dealt with through creating kinship institutions. On the other hand, the agrarian communities of Western and Southern Finland began to hire outside labour, yearly servants, as early as the Middle Ages. The extended family fulfilled the ideal of independence and self-sufficiency in the world of the swidden farmers in Savo and Karelia. The extended family with its numerous members was independent in all its dealings, with labour available for clearances and fields, herding cattle, fishing and hunting. Later, this labour force could also be sent out for logging and other paid work. In the extended family both young and old had their natural position. Co-operation ensured one's livelihood and security. The extended family also expressed the views of the members of the kinship community regarding human relations. In the joint household the individual could live among his kinsmen; the larger one's family was, the more it had prestige in the eyes of others. It is from this period that the large farmhouses in Karelia and Savo date. In these houses all the members of a household numbering several dozen could live, eat and sleep in the winter.

Map 2

1. Map. Distribution of the extended family
according to data based on Voionmaa 1915 (Piha 1964)
2. Diagrams. Prevalence of the extended family and its disappearance
(Piha 1964)

I. Extended families from all households (%) 1500-1900
II. Average number of the nuclear families joined to a household 1500-1900
III. Average number of members in the extended families 1500-1900

1. Map 2. Diagrams



In Finland the extended families lived in the same regions as the swidden economy. According to calculations (Piha 1964, 129) the extended families numbered 30-40 per cent of all households (diagram 2.I). The main period of this institution was the late 18th and early

19th century, when there were cases of joint households including up to ten nuclear families (2.II) and several dozen individual members (2.III). In East Finland, where the extended families lived in a single large cabin in the winter, the joint household had to have a definite economic basis. The graphs also demonstrate the rapid disappearance of the extended family institution with the spreading of private land ownership (Fi. isojako) and the cash economy into Eastern Finland. The map and statistics are based on scanty historical sources, and they do not include Dvina and Onega (East Karelia).

The private ownership of land, land division measures (Fi. *isojako*), inheritance disputes and the transition to a monetary economy and paid labour rapidly dispersed the extended families in the late 19th century. The jointly used fields as well as the rest of the property were divided among the sons. In some cases even the large farmhouses were torn down, so that each of the brothers could build his own house. The holding and farmhouse-centred way of thought spread in this way to Eastern Finland and Karelia.

The Cult of the Dead – The Religion of the Wilderness Farmers

Religious institutions characteristic of extensive cultivation have been the ancestor cult and the sorcerer.(15 The cult of the deceased was probably the main religion of the Bronze and Iron Ages also in the early farming communities along the Gulf of Finland both on the Finnish coast and in the Baltic area. Cult sites of the period were groves of the dead (Fi. *hiisi*). The dead were buried close by the fields and clearances in hiisi groves or in stony outcrops in the cleared fields. From their places of habitation the dead could watch over their clearances and fields, in the clearing and working of which they may have participated during their lifetime. It can be assumed that so-called cup-marked stones are among the oldest symbols of occupying cultivated lands and settlement. In the lands around the Baltic these prehistoric remains are dated to the Bronze and Iron Ages. In Finland the cult of the deceased also used sacred or sacrificial trees, which were in use until the 20th century especially in Savo and the Lutheran regions of Karelia. There is historical data on sacrificial trees from Finland-Proper (SW Finland) as well. In Savo the sacrificial trees were cut down and destroyed especially in the 17th century. A great deal of personal recollections and similar data have been gathered in the swidden regions of Savo regarding sacrificial stones, cup-marked stones and ordinary large stones and rocks in their natural state. The sacrificial trees of single households remained and were preserved when the Lutheran church concentrated its cemeteries near its churches in the main villages. On the other hand, in the Greek Orthodox regions, especially in Dvina (Fi. Viena) in Karelia, the smaller village cemeteries and places of worship (Fi./Kar.

tshasouna) were preserved and Orthodox Karelia was one of the last areas where the Pre-Christian cult of the dead remained alongside village Christianity and veneration of the saints well into the 20th century.

In SW Finland and Estonia the Iron Age cult of the dead is attested to by hiisi place-names (and cup-marked stones). In Eastern Finland the sacrificial trees and stones of the households remained and in the Greek Orthodox regions the cult of the deceased was living tradition well into the 19th and 20th centuries.

In the villages of the forest farmers the dead were among their living relatives and family, in their own part of the environment. They were entitled to the first share (Fi. *esikoisuhri* 'first offering') of all of the produce of the field and cattle, even the first share of the catch of fish. In the hiisi groves and later in Savo at the sacred trees the first grain, the first milk after calving and the first share of the catch of fish when the season began were all given as offerings. Mothers took their infants to the sacred trees to have them accepted by the deceased and the trees were places where aid was sought for illness and misfortune. The deceased were remembered at crucial points of the working year – e.g. the end of the harvest season (i.e. the end of the year; Fi. *jakoaika*). It was then that the deceased were invited into the home. In Greek Orthodox Karelia the dead were sent for by horse from the village cemeteries and even in the 19th century the sauna was heated for them and a special room was prepared with a set meal. In some cases an empty place or plate was set at the family table for the deceased. West Finnish oral tradition also refers to a similar cult-like rememberance custom, but instead of the dead the guardian spirit of the house was shown respect.

The Greek Orthodox Church, which accepted many folk customs, preserved the practice of visiting the village cemeteries and family festivities in honour of individual dead persons. The calendar of the Greek Orthodox church of Karelia has four general days of rememberance of the dead in addition to which the individual deceased person was remembered on certain days following his death, with the one-year anniversary of his passing as the last one. On such days the Karelians of Dvina and Greek Orthodox Ladoga area visited graves with food and other gifts for the dead or they held feasts together with them in the same way as the Chinese venerated their ancestors. The graves were decorated with colourful ribbons and the women sang laments to the ancestors of their families. The village cemeteries of Karelia also had burial houses for the dead with windows and decorated eaves where the dead were thought to live.

In the Iron Age communities the cultivated land was literally the land of the ancestors. The dead gave the members of the families the collective or corporative right to their holdings, fields and clearances. The cult sites were "symbols of ownership". The dead upheld and maintained the social order based on kinship relations. As the cult of the dead de-

creased in importance the guardian spirits of the house overtook their roles in West Finnish oral tradition. These beliefs maintain that the spirit of the house was its first owner or the one who first lit the hearth or fire, which may have originally meant the first to light the clearance, i.e. the one who occupied the land. The founder of the farm or holding may also have stayed on as a spirit; he may have been the first to clear the fields and was buried near his clearance. In Western Finland the spirit of the house and household kept watch over the morals of its inhabitants and the order of the household in the same way as the deceased of the family had done. The cult of the deceased was preserved by taboos on village cemeteries and sacrificial trees among other features. The trees were bound by destiny to their household (family) and to cut down or damage the tree of the deceased brought punishment upon both the culprit and the members of the household. The one who felled the tree or the master or mistress of the household could become ill or die, or the whole household (kinship village) could suffer ruin.

The Sorcerer – the Ritual Expert of the Swidden Economy

With the beginning of extensive cultivation the shamans of the wilderness-hunting period gave way to the sorcerer. As possessor of a religious role the sorcerer was a ritual expert who knew the right techniques and the right words – the incantation or spell, while the shaman manipulated souls, the sorcerer controlled the supernatural forces, which affected the natural environment of the wilderness farmer. The role of the sorcerer, magical rites and incantations were especially part of the Savo-Karelian swidden culture. The Finnish material includes tens of thousands of versions of incantations with their main 19th century distribution in Savo and Karelia. The sorcerers had a two-fold role. The rite technique could deter evil, illness or misfortune, but on the other hand the sorcerer himself could cause harm to others and avenge his enemies. The sorcerer had the power to practise both white and black magic. to bind and to release, to heal and to cause illness.

There are several differences between the shamanism of the wilderness hunting period and the sorcerer phenomenon of the swidden period. Ordinary persons could also acquire magical knowledge and the rite technique did not require any special mental or spiritual skills as opposed to the role of the shaman, although the sorcerers of Finland retained many of the features of shamanism. An adept sorcerer could "become possessed", i.e. achieve a certain ecstatic state, above all when dispelling evil or exorcising it back upon its agent.

Both the sorcerer and the shaman had to find out where the posed threat in question came from or who had caused it. The sorcerer, however, did not seek his answers from the world of souls and spirits but from the immediate Umwelt and its social relations. Misfortune was caused by supernatural powers who had not approved of human actions in their environment and also by hostile persons, ecological rivals. In the early farming communities man forced himself further and further into the sphere of natural spirits, animals and other people. The activities of the sorcerers acquired formal features. The sorcerers of Savo and Karelia had their own "incantation of birth" or explanation of origin for all possible dangers to men: natural catastrophes, illness and wild beasts. By means of such an incantation the sorcerer took possession of the threatening power in order to dispel it with rites of prevention and appropriate incantation. Evil was exorcised back to where it had come from.

The sorcerer set up magical fences between man and the powers that threatened him and he knew the effective antidotes. The basic elements of the competence of the Finnish sorcerer were fire, water, earth and air in the same way as in the old cultural regions of Asia. In the Iron Age communities central elements were also iron (bladed weapons) and especially in the Christian period symbols of the cult of the dead – skulls, soil from the grave, excreta of the deceased, etc. which began to signify the worst possible evil and abhorrence. In the early farming communities the sorcerer was also a sacrificial priest in carrying out the communal offerings of animals.
The sorcerer was needed on special occasions: to heal the sick and to dispel evil. The sorcerer directed the wedding act and dispelled any evil that threatened the couple (and their kin) as well as ensuring fertility and success. In historical perspective the Finnish sorcerer tradition and its incantations and spells contain many strata beginning with the shamanism of the wilderness period and ending in anti-Christian witchcraft. In the swidden period sorcery was above all accepted practical knowledge and related rites, which the master and mistress of the household were required to know in their respective areas of work.

Institutions of the Swidden Period

As in the wilderness period, kinship was also the main social structure of the swidden culture. In the area of Finnish tradition the kinship culture was preserved especially in Karelia (Dvina), but kinship-centeredness was a background of all East Finnish folk culture. On the hills and fells of the swidden farmers the local communities were small villages of kinsmen, formed around the earliest household. In addition to the cult of the deceased and sorcery, inter-kin marriage

and regularly held local meetings (e.g. the praasniekka in Orthodox Karelia) were characteristic institutions of the swidden culture.(16 In Karelia marriages were arranged between kin groups. The representatives of the kin of the bridegroom set out on the proposal journey together with his parents. The proposal was an event for negotiations between kin groups and marriage was an alliance of kinship groups – the recruiting of kin. Marriage was also a rite of passage between kinship groups, where the bride was given from her own home to live among the kin of her husband. As social plays marriages involved (in van Gennep's or Turner's terms) three stages of passage: the leave-taking (rite of separation), the departure and procession (marginal or liminal stage) and the coming into the home of the bridegroom (rite of aggregation). All of the stages of transferring the bride involved their own wedding songs in old-metre. In Greek Orthodox Karelia wedding laments were also sung for the bride or she was made to weep during the separation rites. The kin of the bride and bridegroom performed the roles of the marriage ceremony and in connection with it a new kin group was formed.

The earliest strata of wedding songs describe the act of marriage as a hunting journey and the verbal imagery derives from the wilderness culture. In later strata the wedding songs adopt features of the agrarian hierarchy of the extended family; the bride is accustomed to her role as daughter-in-law in the male-dominated (Slav-type) joint household. Kin weddings and related songs manifested kinship values, the responsibility of the kin, the honour of one's own kin and its status in the community. In structure the kinship weddings were completely different social plays than the village weddings of the West Finnish agrarian communities. In the wedding feasts of an agrarian community the hierarchical rites manifested peasant prosperity and a class division based on land ownership. In the West Finnish village weddings the bride and bridegroom were transferred into their own social group, their 'estate'.

The extensive swidden culture retained the regular meetings and fairs characteristic of the wilderness culture, which in the cultivation economy also became sacrificial occasions. The praasniekka of Greek Orthodox Karelia is such a kinship institution. These were village feasts held at the local places of worship (tshasouna) on the feast days of patron saints, once or twice a year in each village. At these times the households arranged food and lodging for kinsmen and guests and the youth of the village could also arrange their own get-togethers. At these events the kinship groups made arrangements concerning marriages and other common affairs. In the outlying areas all social interaction was concentrated in the yearly praasniekka feasts.

The tradition of local meetings has also been preserved in Western and Southern Finland. During the Roman Catholic Middle Ages the local meetings changed into church masses (kirmes, dedication day) or memorial days of the church

patrons. After the Reformation weekly church attendance took the place of yearly meetings in the peasant communities. The yearly meetings of kins or clans which followed the natural calendar derived most probably from the Iron Age and the earlier wilderness communities and they still constituted one of the basic social structures of the swidden culture.

Man in the Ecosystem of the Swidden Cultivation

The Worldview of the Swidden Farmer

The world-view of swidden farmer of Savo can be condensed in a sense to his view of his own environment from his house on the hill. The resources of the single farms and households or the kin villages were dispersed throughout the wide forests, often at distances requiring several days of journeying. The swidden farmer had to know what went on in his sphere of life and work and to assure himself that he was in control of the conditions of his existence. The farmer had many ecological rivals and threats: uncertain natural factors, other users of the natural environment and new settlers. Ecological security was provided by kinship and the extended family, but also by intimate knowledge of supernatural powers and relations of cause and effect.

The communities of the swidden farmers and new settlers were often without legal administration. In Eastern Finland the parishes were large and the dwellers of remote areas had little to do with secular or ecclesiastical authorities. Compared with the peasants of Western and Southern Finland, who lived in their densely built villages, the dispersed wilderness farmers led a lonely existence. As there was no recognized permanent and private ownership of land in the area of the swidden culture, the natural environment could still be freely claimed for use, especially in the northern regions where there was no permanent settlement. Special rites of effect involving both white and black magic maintained the ecological balance between kinship groups and even single households of new settlers. It was through the agency of rites that man set up a kind of magical boundary around his own cultural-ecological niche and secured his

own rights of using and utilizing his environment. The isolated dwellers of the wilderness were protected by a "magical fear". The burn-clearances and fishing traps and nets of the strong and adept sorcerers were out of bounds to others and they were not to be disturbed. The swidden farmers of Savo held reputations as witches and sorcerers and it was only fear of sorcery and witchcraft that saved the forest-dwelling Finnish migrants from persecution in the 17th-19th centuries in the remote areas of Vermland in Central Sweden.(17

The swidden farmer had a different relationship with his natural environment than that of the wilderness culture. In a cultivation economy animals were divided into useful and harmful classes – domestic and wild animals. This change is best seen in attitudes regarding the bear. In the period of wilderness hunting Finland belonged to the area of the arctic bear cult and the bear was probably also the totemic animal of certain groups (Karelians).(18 Bear was ritually hunted from its winter lair and the hunt became a ritual play led and directed by the shaman. In Finland, each of its parts included a ritual song in old metre. For the arctic hunters the bear was a supply of meat for the late winter. By ritualising the hunt the killing of the animal was regulated and controlled and anarchy of hunting was prevented. In the rite the bear was returned to his original heavenly home, from where it was reincarnated back into nature. To the swidden farmer and keeper of cattle the bear became a wild beast and predator eating the grain in the clearances and killing the cattle in the forest. The bear poetry acquired a new function; for example, the incantation of the birth of the bear began to be used in the rites of letting cattle out to pasture in order to protect the cows from bears. In the swidden culture the community was not yet organized or in control of its natural environment in the same way as the agrarian society. Joint hunting ventures, organized by the state, spread to the agrarian villages of Western and Southern Finland and by the 19th century wild animals had been killed almost to extinction in the western regions. Compared with the peasant the swidden farmer was still an individualist who wished to make his way in his environment relying on his own skills and abilities.

Folklore of the Swidden Period

Both epic and lyric poetry had probably come about in the Iron Age in the early farming communities on the shores of the Gulf of Finland. The way of life of these communities still included long journeys along water routes and by sea to seasonal hunting sites or marauding expeditions.(19 The epic poetry of the older metre was presented when rowing (as also the Vikings have done) and it belonged to the men's tales on hunting and fishing journeys, where it was nec-

essary to stay awake through the night. This was the custom in the Dvina regions of Karelia as late as the 19th century. The world of old poetry is the shore village of the Gulf of Finland and the central personages are swiddeners, blacksmiths, and sorcerers who lived in their permanent villages going seasonally on long-distance journeys to their remote fishing and hunting grounds, and burn-clearances. Lyric verse in the old metre was sung by the women. This poetry tells of the work of women, their worries and concerns and also of areas central to their lives, above all marriage and the position of women in inter-kin marriage agreements.

Old-metric poetry and incantations were preserved until the 19th century in Savo, but above all in the outlying parts of Karelia (Dvina, Onega and Lake Ladoga regions) in the same way as the swidden cultivation, fishing and hunting economy. The old metre and the more archaic epic narrative were preserved in the poems and charms, which were used in the world of swiddeners and in the rites of the kinship institutions. The largest group of rite poems consists of the wedding songs in old metre, which were presented in the inter-kin marriage acts. Approximately 10 000 versions of the wedding poems are known and along with the incantations they were the largest uniform area of subject matter. Along with the formation of agrarian society the old metre tradition died out and the first strata to disappear were those relating to the shamanistic cult of the wilderness period. A new type of communal tradition found its way into the agrarian culture of Western and Southern Finland from the 17th century onwards with dance songs in modern metre and fiddler music. These were features of village culture, community festivities and social intercourse among neighbours. It has not been possible to retrieve oral tradition in old metre from agrarian West Finland.

The Savo-Karelia region has not provided researchers with many tales with formal structures (e.g. mythical tales) or in general folklore with dramatic events, moral maxims or messages emphasizing community life as their core feature. In the swidden culture folklore did not yet constitute social communication and it had not divided into various categories as in the agrarian or class societies. Outside of ritual code in old, Savo-Karelian folklore of a narrative nature was still individualistic and realistic in the swidden period. It concentrated on concrete events in its own immediate environment, nature and the sphere of the village or kin group. In the area of the Savo dialects individual local narrative developed into a veritable form of folk art. There have been many definitions and descriptions of the verbality of the speakers of the Savo dialects; in any case it is something quite unique and characteristic of the Savo region and its population.

The 'speaker' in Savo was above all a visitor, a man or woman who would come over to meet his or her neighbours. With skilled use of phrases he or she would describe 'local events' and 'cases' with all their inherent analysis of details and persons concerned. The dialect speakers of Savo were individualists and personalities in their use of metaphor

and the richness of their means of expression. In Savo as well as in Karelia the folk art of material objects, the decoration of furniture or houses, was regarded as secondary. In the grey farmhouses of Savo, the power of the tongue replaced other skills, other forms of folk art and even prowess in sports. In Savo one competed in the skills of expressing oneself verbally. The status of verbal skills in Savo may be linked to the overall conditions and social relationships of the swidden farmers. The simple assumption may even be suggested that meeting other people was socially important to the widely dispersed farm dwellers. Visiting became rituals with their own cultural codes and content matter.

The Way of Life of the Swidden Period

Learned travellers in Finland, especially in the 19th century, made comparisons between the Karelians and the population of Häme, who represented the peasants of Western Finland. The Karelians were regarded as lively, unreserved and prone to quick action and initiative. On the other hand, they were also seen as being impatient and carefree in a childlike manner in comparison to the reserved and slower peasants of Häme who kept to their villages and farmsteads, worked hard and saved. Elias Lönnrot, who compiled The Kalevala, described in fitting terms the Karelians and the peasants of Häme during his poetry collecting journeys through Finland in 1828. In Lönnrot's opinion the peasants of Häme were not only slower physically and mentally than the common people elsewhere in the country, but they were also more prone to remain in the same place and keep to themselves. On the other hand, the peasants of Savo and Karelia struck Lönnrot as being always prepared to leave. Without undue deliberation they would undertake journeys of up to 60 leagues with their boats in summer and on sledges in winter often at considerable personal risk. The journeys took most of the winter for the peasants of Savo and Karelia. In the spring they returned "with experiences and knowledge gathered from a wide area".(20 In later accounts the peasants of Savo are described as agrarian villagers settled down on their plots. On the other hand, the Karelians of Dvina kept to their former way of life and when law forbade swidden cultivation, among other practices, in the 1840s, the men took up peddling or engaged in seasonal hunting and fishing either on the Arctic shore, the Kola Peninsula or the towns of the Gulf of Dvina. Most of the men of the Dvina villages travelled around Finland in the summers peddling their wares.

The swidden farmer of Savo and Karelia, who since the 16th century had settled the northern and eastern inland regions of Finland, was a mobile hunter and swiddener. He carried on a way of life similar to that of the far-ranging fish-

ers and hunters of ancient Häme and Karelia in the pre-Christian era. It is also obvious that previously in the Bronze and Iron Ages Finland had been a territory utilized for hunting and far-ranging swidden cultivation by the agricultural communities of the Baltic region (Estonia). The inhabitants of the coastal region with their diversified economy pushed the Lapp (Sami) hunting and fishing communities aside and gradually made their way further and further inland. Their early hunting expeditions extended through the present territory of Finland all the way to Lapland.

Swidden cultivation is basically a cultural feature of the "migration period". Making use of this technique many of the peoples of Europe and Asia found their way into new territories. The last of these in Europe were the inhabitants of Savo and Karelia, who were able to cultivate grain in the coniferous forests of the north and to make the monolithic forest wilderness provide a living. In the course of time the territories of the swidden farmers have diminished. The most mobile were no doubt the Palaearctic hunting-fishing communities and the far-ranging hunters of the Iron Age, the Vikings and the ancient swidden farmers of the coastal regions of the Gulf of Finland. In comparison with the above, the territories of the settlers of Savo and Karelia in the 16th and 17th centuries were limited to their immediate environs. However, the settlers with their permanent dwellings on the cleared ridges and hills were not yet peasants, village dwellers, whose ecosystem as a whole would be dependent on the resources of the nearby surroundings. Swidden cultivation was structurally a specific cultural-ecological system and even as an individual and personality the wilderness farmer adapted himself to the challenges posed by a diversified economy based on natural resources.

Man in the Swidden Culture

In Savo and Karelia the swidden farmer needed hardly any other tools or implements than an axe to fend for himself. The axe was the bladed weapon of the rites, it had the strength of iron and it could also be effective in the unseen world. In the swidden period the term kirves (literally 'axe') was used of a full-grown man who maintained a tax-paying holding and was a member of a joint swidden venture or company. In the wilderness-hunting period the term jousi (literally 'bow') was used of a taxpaying man.(21 With axe and bow the wilderness farmer was independent as long as there was unclaimed land and unsettled sites in the forests of Eastern Finland and Karelia. The wedding songs in Karelia praise the bridegroom as a man who had a burn-clearance and a shed for his catch on every hill and hardly ever rises from his own bed but from his campfire in the forest.

In the wilderness-farming period the household was dominated and run by the women. The wedding poems and the bear rite songs have the mistress of the household receive comers: the bridegroom's kin or the hunters bearing the killed bear. Women may have been leaders of the extended families, matriarchs in charge of large-scale joint households. In the diversified household economy women were the equals of men as workers. Before the private ownership of land daughters were given a dowry upon marriage, which corresponded to the inheritance due to her from her kin. She was given all that would be needed in her household. The household was built around the women and the heart of the main room of the dwelling was the women's side. In Finland the communities of the swidden period were to some degree matriarchal, which is characteristic of extensive farming cultures in general. With the advent of agrarian society the status of women however changed and the patriarchal hierarchy of the extended family spread to Karelia.

The swidden communities did not yet recognize permanent social categories as in the case of western agrarian society based on the concepts of estate and class. A man of the swidden period could achieve special status as a sorcerer, smith or boatwright in the same way as the heroes of The Kalevala, as a bard on hunting expeditions or as a teller or speaker at get-togethers, kinship feasts (praasniekka) or fairs. Women could also be sorceresses or experts of folklore. In everyday life the individual was recognized as a kinsman and the most important factor was one's position in the kinship hierarchy. As late as the 19th century in Dvina and elsewhere in Karelia a person's status was based on his age and authority gained as a member of one's kin group. In the kinship hierarchy women were virgins, brides to given away, daughters-in-law, mothers-in-law and old women, the matriarchs of the family and kin with the final say in the household or in cases of marrying off a son or daughter. The household, dwelling conditions and even the structures of family and kinship were still flexible, as in the hunting culture. The environment and Umwelt were seen in terms of natural categories. The simple grey buildings and houses did not serve any specific social functions. Customs or the various forms of interaction were not used to manifest social organization, wealth or social status (class or estate) in the same way as in the agrarian society of Western Finland. Savo and Karelia were long without rites of hierarchy, typical of European organizational culture.(22

The spontaneity, sociability and gaiety of the Karelians were natural traits of behaviour in a society without social distances or differences of status. In the wilderness hunting and swidden periods the individual was socialized into his kin. In the kinship wedding ceremonies the bride was the central character, who is taken out of her home and childhood environment, made to weep and humiliated into her future role as daughter-in-law living in a strange extended family. Daughters as future daughters-in-law were subject to many expectations. The daughter-in-law was an addition to the workforce, as bearer of children she bore the responsibility for the future of her husband's kin. However, compared

with the status rites and hierarchical ceremonies of agrarian society the wedding ceremonies of the kinship society were humane. They were a form of women's therapy in the same way as the lyric poetry of the old metre. The old poetry corresponded to the feelings of the individual and matters central to women. The wedding ceremonies with their songs and laments permitted the individual to express her hopes and fears.(23

Table 3

Central structures of cultural periods in Finland

Fishing and hunting culture 7000 B.C. –
- fishing/hunting bands, winter and summer villages
- rites of the catch (ritual return of the catch, offerings to guardian spirits)
- bear cult (ritual bear hunting)
- shamanism, many-layered Weltanschauung
- totemism (e.g. bear and elk clans)
- astral/nature myths

Swidden culture ca 1000 B.C –
- swidden cultivation, animal husbandry, seasonal fishing & hunting
- kinship villages, kinship ties & gatherings
- kinship institutions, extended families, kinship weddings & funerals)
- cult of the deceased (groves & trees of ancestors, village cemeteries)
- sorcerism, magical rites & incantation poems
- cultivation rites, calendar rites, animal sacrifice
- epic and lyric poetry of the old metre
- tales relating to natural spirits and the dead

Peasant culture ca 1100 A.D. –
- permanent field cultivation and animal husbandry

- village communities, neighbour relations, holding-centeredness
- village administration, village co-operation, voluntary work
- Christian church; witchcraft (anti-Christian magic)
- community culture (village weddings & funerals, common bees & handiwork parties)
- parish holidays, confirmation feasts
- songs in new metre, dances and fiddler (instrumental) music
- youth culture (village dances, village swings, night courting, village fights)

Child-rearing customs and practices were less harsh in Eastern Finland than in the western agrarian society. The hard wooden cradle, feeding horns and swaddles were features that spread to the peasant villages of Western and Southern Finland. The cradle freed the mother to do other work, but it also symbolized the new organizational society where the individual was raised into a hard world of work, discipline and order. The European agrarian culture entailed a new ecosystem with the central structures of leadership, hierarchy and disciplined masses.(24

The End of the Swidden Culture

Swidden Economy Versus Agrarian Security

In the incantation of the birth of fire of the swiddeners, Ukkonen (literally Thunder), the god of the heavens, strikes fire from the firmament and a spark falls down into the primeval lake, from where men catch it and keep it as a prize. In natural conditions the swidden/wilderness economy was ecologically the most suitable means of livelihood in the hilly regions of Eastern Finland and Karelia. In the burn-cleared tracts of land forest was renewed through natural processes in the same way as through forest fires. Without forest fires or burn-clearing the northern forests would have

become monotonous wildernesses of mainly conifers. The swidden farmers enriched the flora and fauna of Finland and created an East Finnish and Karelian landscape type with stands of birch, groves and shore meadows. The swidden practice was also the most profitable form of cultivation available to man in the natural economy. However, the swidden culture disappeared from Finland as it has done elsewhere in the world. The central structures of this culture in Finland – diversified economy, kinship institutions, sorcerism and old metric poetry – all disappeared with the transition to agrarian society. Structural change always creates a completely new cultural system.

Also in the case in Finland the disappearance of the swidden culture entailed both inner and outer causes. Swidden cultivation was prone to ecological crises and peoples engaged in it have striven to adopt field cultivation methods wherever possible. In many places in Savo and Karelia change was dictated by outside requirements, although field clearance on the stony ridges and fells of Eastern Finland was extremely laborious and uneconomical. Large-scale field cultivation became possible only through the drying of bogs and lakes, i.e. through changing the equilibrium or homeostasis of the whole environment.(25

Finland as a Periphery of the Commercial Culture

As ecosystems both the swidden economy and the wilderness hunting culture are unable to withstand the effects of commercial profit-seeking or the pressures of outside technosystems. In historically documented times and as early as the 9th century A.D. Finland became a peripheral area of the European economic centres and by the 17th century the hunting of fur animals had destroyed the fishing and hunting economy or the oldest forest culture based on natural resources. The commercially profitable fur animals were almost completely exterminated. The greatest damages to the ecosystem of the swidden culture were caused by the capitalization of the natural means of livelihood, e.g. the grain and tar trade. In the boom period of swidden cultivation in the 18th and early 19th centuries Eastern Finland was a centre for the commercial cultivation of grain. Swidden farmers established joint ventures and felled large clearances, which were no longer cultivation for food and nutrition but to provide cash.(26 As a means of livelihood swidden cultivation, which had been self-sufficient, became exploitative in the same way as hunting had become with the spread of the fur trade into the wilderness regions of the north.

Commercial swidden cultivation brought about the end of the independent and economically self-sufficient swidden

culture, leading to 1) competition over clearance tracts and endless disputes over land claims that were settled in the courts; 2) wasting of forests and uncontrolled clearing of land and 3) promoting the transition to private ownership of land. Land division and parcelling measures (isojako) leading to the private ownership of land were carried out in Eastern Finland mainly in the 19th century and led 4) to the disappearance of kinship structures, including the extended family and gradually to structural change in the rest of the cultural-ecological system of the swidden period. The swidden culture became agrarian and peasant in nature and the focal point of life became the holding and its ownership.(27

With the birth of the timber industry Finland became a so-called developing country whose economic structures were guided from outside. Swidden cultivation came into competition with other uses of forest resources, such as tar-burning in north-eastern Finland and sales of logs to the sawmill industry, which in the western regions formed a considerable part of the peasant's cash income.

The rise of the sawmill industry and the pulp and paper industry in the late 19th century signified the final blow to cultivation. The value of forestland rose and the authorities tried to enforce stricter measures against swidden cultivation and to promote field cultivation methods. In the industrial system dominated by world trade the swidden culture was no longer rational and it even became an example of traditional wasteful methods of cultivation. Western development technocrats, who themselves are representatives of an all-encompassing and exploitative industrial economy have made swidden cultivation a mythological example of anti-technology.(28 It is often forgotten in this connection that under the pressures of the commercial world economy other forms of using natural resources, such as technologically effective cultivation and the industrial use of renewable and non-renewable natural resources, have also become exploitative and ecologically untenable.

Sources

Experts in various fields have studied and discussed swidden cultivation or burn-beating as an economic practice in Finland. These include Grotenfeld (1899; 1901), an agricultural expert, and the historians Voionmaa (1915, 103-), Manninen (1922) and Soininen (1961; 1974, 54-). Data is also available in several local historical works on Savo and Karelia, e.g. Hietanen (1975), Lappalainen (1970, 615-). In ethnology the subject has been discussed by Vilkuna (1948; 1953a; 1960 and Vilkuna - Mäkinen 1953b), Kortesalmi (1969) and Ovaskainen (1938). In forestry studies Heikinheimo (1915) is a standard work. For cultural-anthropological general works and bibliographies, see Conklin (1963), Netting (1974) and Grandstaff (1978). Sections of this article referring to cultural structures and regional dif-

ferences in Finnish culture are based in the maps and articles of the Atlas of Finnish Folk Culture I & II (under preparation); Sarmela, Yhteisökulttuurin alueelliset rakenteet; 1969; 1974.

1. According to archaeologist cultivation became established as a form of economy in the Merovingian period. The 1st century, especially the Viking period, was the main period of prehistoric swidden and hoe cultivation (e.g. Tolonen - Siiriäinen - Hirviluoto 1976, 28-).

2. On the expansion of settlement in Savo, see e.g. Atlas of Finnish history, Wirilander 1960, Soininen 1961, Saloheimo 1976; 1980. On emigrant swidden farmers from Savo in Sweden, see e.g. Byberg 1928, Tvengsberg 1982, Wallerstrom 1984, Widmark 1950.

3. In Finland the Iron Age cultivators kept to the clayey soils of Southern Finland and Southern Karelia (Linkola 1985, 58-). Sweden was also divided into an agrarian plains area and a forest zone. In Southern Finland as well as in Southern Sweden the medieval period (11th century) saw the birth of village-type settlement with its stone churches and other symbols of local community culture. In the field cultivation areas of Finland and Sweden (see e.g. Myrdal 1985) medieval culture was based on an increasingly intensifying form of agriculture and animal husbandry. It was only at this stage that the expansion of the swidden farmers of Eastern and Northern Finland began (Jutikkala -Kaukiainen - Åström 1980.) Swidden cultivation continued in some forms also in Western Finland, i.e. in Haute and Satakunta (Jutikkala 1934, Kyrölä 1936, Nikkilä 1934, Rudenskiöld 1899).

4. Vilkuna 1948; 1953a & b; 1960, Kortesalmi 1969, Soininen 1974, 58-, Heikinheimo 1915, 83-, Grotenfeld 1899; 1901, 21-. The term "white tree" (meaning non-resinous or non-oily) is used by mountain peoples in South-East Asia (Geddes 1976, 140-).

5. On swidden tools and implements, see e.g. Atlas of Finnish Folk Culture I, maps 6-8, 12. Vilkuna 1971. Especially in tropical swidden cultivation and horticulture the cultivation of different species has been ecologically viable "polyculture" (e.g. Beckerman 1983, Hames 1983).

As long as there was enough swidden land for the rotation of crops, the plot gave one, and at most two, crops. This was an ecologically deliberate practice: several crops would have led to "intensified cultivation", which in turn led to the permanent deplenishment of the soils (cf. e.g. Netting 1974, 26-).

6. Already in the felling stage the burn-clearances provided timber and birch-bark for household use. Un-burnt timber could be used for fences or firewood in the house. The larger trunks were sold to the firms when the timber industry came into being. In fact, the forests and produce of the burn-clearance tracts was carefully used in all their variety. (Cf. Ovaskainen 1938, 23, Heikinheimo 1915, 95-)

7. See e.g. Atlas of Finnish Folk Culture I, map 5.

8. In Finland the huuhta, or clearance in virgin forest, was the most productive form. These were said to yield up to 100 grains per seed; in normal conditions possibly 20-30 grains per seed. A normal birch clearance gave on the average a ten-fold yield and even more the first year. The yield of a normal field was generally 6-fold. According to economists of the 17th and 18th centuries swidden cultivation gave 30-50-fold yields (Rudenskiöld), but historical sources also refer to 100-fold cases. (Nikkilä 1934, 309, Soininen 1974, 65-, Kortesalmi 1969, 283-, Lappalainen 1970. 644-, Ovaskainen 1938, 16. Vilkuna 1948; etc. Voionmaa 1915, 124-).

Swidden rye (korpiruis) was the most productive grain species. It became bush-like when grown and produced a large number or ears of grain. The species did not thrive in normal fields, but in virgin clearances (huuhta).

9. The time of burning over was critical in many respects. Descriptions of rural conditions mention cases where clearances could not be burned for many years due to rains or unfavourable winds. (E.g. Koistinen 1912, 73.)

10. For more details, see Sarmela 1979a, 120

11. Kansatieteellisiä muistiinpanoja Ilomantsin itäkylistä 1939 (Ethnographical observations concerning the eastern villages of Ilomantsi

1939). Cf. Koistinen 1912.
12. E.g. Atlas of Finnish Folk Culture I, maps 26, 34, 36, 47-49, 57, 61. Sarmela 1984, 25-.
13. Voionmaa 1415, 271-.
14. On the extended family, see Voionmaa 1915, 386-, Piha 1964, Sarmela 1979c; 1980.
15. On the cult of the deceased, see e.g. Atlas of Finnish Folk Culture 77 (Sarmela). On the role of the sorcerer. e.g Haavio 1967,315-. Honko 1959.
16. Sarmela 1969, 70; 1981.
17. The so-called magical fence or iron boundary was one of the cognitive features of the swidden culture and is associated with the fences erected around clearances. which were mainly protective fences needed by man in natural conditions.

The folklore archives of the Finnish Literature Society contain a great deal of data on how thieves in the clearances or at the traps of a sorcerer would remain in place, unable to move, or suffered some other supernatural punishment. The thief, caught red-handed, could be freed only by the sorcerer (from the magical circle). Only exceptions among the burn-clearance plots were those where turnips were grown. According to the commonly held view, one was entitled to take as many turnips as one could eat at a time.
For an eyewitness account of the Vermland Finns, see Gottlund 1815, 1817 (1928).
18. Sarmela 1983.
19. Sarmela, Yhteisökulttuurin alueelliset rakenteet.
20. Lönnrot 1828 (1979, 34-). Cf. Sihvo 1973.
21. Voionmaa 1915, 146-.
22. Sarmela 1987.
23. E.g. Nenola-Kallio 1982, 113-.
24. Sarmela 19846.
25. From the 17th century onwards, and in Eastern Finland from the 1770s, swidden cultivation was either banned or curbed with legal measures (e.g. Soininen 1974, 72-). In Western Finland these measures had some effect, but in the actual swidden regions they were openly flaunted and official bans were of no practical importance until free swidden cultivation came to an end with the introduction of land division (isojako). The legal measures and bans of the authorities of Sweden-Finland did not strive to preserve the forests, but to save them for the needs of the iron foundries and the timber industry.
26. The huuhta clearings were cultivated for commercial purposes. Documentary sources refer to "huuhta kings", successful swidden farmers, who prospered through cultivating virgin clearances. Their larders held large amounts of rye grain and sheaves of rye would even be left to rot in the plots. These persons, often respected in local history, were in fact instrumental in destroying their own culture. The commercial growing of grain also became necessary because of increased state and church taxation.
27. On the conflicts and contradictions of swidden and commercial culture, see e.g. Grandstaff 1978.
28. Swidden cultivation is one of the forms of natural economy where related studies demonstrate all of the historical phases of development technocratic research. Finnish economists of the 17th and 18th centuries generally held positive views regarding the practice. A change came about, however, around the mid-19th century with the first attacks of the forestry technocrats against swidden cultivation. Heikinheimo (1915), among other authors, has discussed swidden cultivation solely from the perspective of forest growth. From the point of view of forestry technology it is uneconomical in comparison with the industrial use of timber. This method also makes forest resources

worthless from the point of view of world trade. There were also attempts at demonstrating how swidden cultivation deplenishes soils and causes erosion.

A similar "history of research" can be seen, for example, in the case of Thailand. The mountain peoples of South-East Asia were drawn into the sphere of commercial forestry as early as the 19th century (Balzer-Jörgensen 1972). Especially in the 1950s local forestry officials tried to show the swidden farmers as backward by organizing development conferences. A typical "inventary-technological" study is e.g. Loetsch 1958. It was only later that the conditions of the swidden peoples were studied from a more varied perspective (e.g. Kunstadter et al. 1978 and Hanks 1972). In the late 1970s and early 1980s broader approaches began to be applied in the study of swidden cultivation as a form of utilizing natural resources, e.g. Brush 1975, Christiansen 1981. Grandstaff (1978, 554), among others, suggests that in many areas this method is the only ecological term of cultivation. Without the domination of the forest industries this would have been the case in Eastern Finland as well.

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