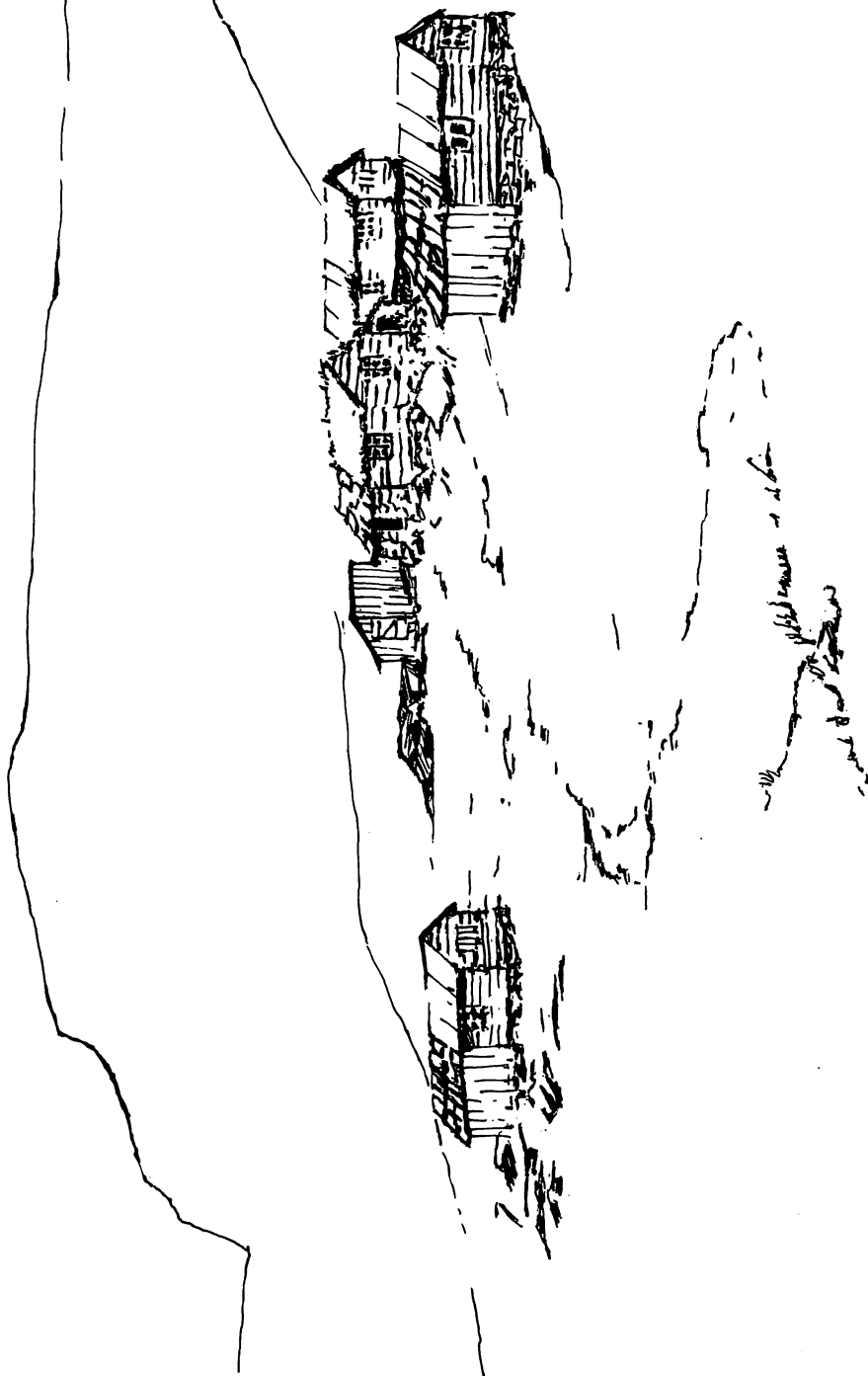




THE "SETER" - AREAS OF RURAL NORWAY, -
A TRADITIONAL MULTIPURPOSE RESOURCE.

Anne-Berit Ø. Borchgrevink

Animal husbandry seems to have existed side by side with agriculture since prehistoric times in Scandinavia, a combination which has continued to be typical of Norway up to our own days. The term "mixed farming" is highly characteristic of Norwegian farming, and through the centuries there has been a relatively firm tie or relation between the livestock keeping and the grain growing on the farms. This relationship, however, is not a constant one, as it is subject to varying ecological adjustments, and also determined by the prevailing production systems and economic ends. - The number of cattle in relation to the area of arable land was higher in the mountain (upland) communities and in the western part of the country, than in the lowland areas of eastern Norway and in Trøndelag.

During the Middle Ages livestock apparently played a more important role than grain growing in the economic system, judging from transactions in property and goods. The most stable standard of value was the cow. This is evident, not only in connection with the land rent and taxes, but in the regular goods' trade as well. Commonly people also had their capital in cattle, sheep or goats, even if they did not actually own a farm. This practice brought about legal regulations, as such livestock usually was rented out to other people who kept them in grass. We find codified statements on such practices already in the Gulatings log.

The regular livestock keeping consisted of keeping a certain number of cows, sheep, goats and pigs on every farm. The horse also appeared at an early stage in prehistoric times. The main choice of livestock, however, was in early times depending on ecological factors in different parts of the country. - The cows, goats and sheep were all milked, and it was important to have a great number of animals, not only because of the yield (in meat, milk, butter and cheese), but also because a numerous stock was a sign of wealth.

For climatic and geographical reasons livestock in Norway has to be kept and fed indoors in the greater part of the year. In certain areas along the coast, the sheep - and even the goats, with difficulty, - could be kept outdoors all the year round, but this was impossible inland. Cows are able to graze for approximately four months of the year, but the grazing season is of course varying from one geographical locality to another. The longest grazing season is found in the southernmost areas.

Through the centuries the actual area of tilled soil, or cultivated soil, on Norwegian farms has remained extremely small. (The total area of cultivated soil/land even today covers less than 2 per cent of the total land area of Norway.) The "infield" - innmarka - which was fenced in and which formed the farm proper ("garden") has been limited, and has for the greater part of our history in fact played a lesser role in the actual work and survival on the farm than the wide outlying areas - "utmarka" - which was attached to the farms.

Why was this?

The main problem through the centuries for

Norwegian farmer has never been how to find summer grazing for his herd, but how to supply enough fodder to keep the animals through the long winter. In the small fields of the limited infield area the farmer primarily grew corn (grain), while the grass for hay or grazing was found on the strips between the fields, along brooks and rivers, and on the poorer, marshy land not suited for corn growing. Only the cornplots were manured, and so the small meadows would yield even less fodder. The hay which was gathered here could by no means keep the actual number of livestock through the winter months.

How, then, can a farming system with the emphasis on livestock (and with milk production) be kept up, when the actual farm proper does not supply the necessary fodder? This is where the importance of the widestretching outlying areas of woodland, hillsides and mountains enter our picture. This is what we call the "utmark" - areas, the areas outside the infield fence. Utmarka covered comparatively vast territories, - territories which have been called "a storeroom" to the farm. The various resources of these outlying areas were exploited regularly and extensively in the traditional farming system.

"Utmarka" or "utrastene" which were connected to a farm (as "portions and privileges") comprised 1) the nearer grazing areas just outside the infield fence, where the woodland started (called "heimrasta") plus 2) - and perhaps most important - the more remote territories, usually in the hills and the mountains.

In these extensive areas we find the "seters", which have been called an "operational annex" to the farm. This is indeed a highly characteristic designation, and a fact which has

prompted me to use the term "seter"-area, in the title of this paper.

A simple definition of a seter is of course to equate it with a shieling or a booley, but in order to give a more precise definition of a seter and a seter system I would like to refer to you the definition given by Dr. Lars Reinton: "We have a seter system when a farm, (a permanent winter dwelling), keeps the livestock in summer grazing in a place some distance from the farm, where there is a shelter or dwelling and regular personnel, in order to exploit a greater area for grazing, and usually also for gathering hay and other kinds of fodder, so as to save the infield area and find better grazing, to be able to feed more cattle and keep them through the winter, and to secure supplies and provisions for the permanent residence - the farm."

A seter, then, as we see, has a number of specific characteristics, first of all permanent houses some distance from the farm, with a regular personnel, but only temporary in use; secondly, the definite objective of a seter is to exploit certain resources for grazing, plus hay-making and other kinds of fodder gathering, in order to save the infield and to obtain a supply of winter fodder for the home farm, along with a yield of milk products.

The first part of the definition is common to several authors, and is given e.g. by Frödin in "Zentraleuropas Alpwirtschaft I". The main objective of a seter is here put down to be summer grazing. Reinton and other Norwegian researchers (myself included), will however, strongly emphasise the winter supply element of the seter-definition. Without this important qualification, we feel the definition will be far too vague, and indeed misleading. - For instance,

there are numerous instances where we will find livestock grazing in the summer in these outlying areas, with regular personnel to tend the herds, and with permanent dwellings or bothies as well. The droving of cattle would certainly fit such a description in Norway, with shepherds, drovers, grazing their herds in the mountain pastures, staying at certain bothies called "læger", and even moving between a network of such "stations" within the pasture areas. They may even tend a few milking cows for their own consumption. - The important thing is, however, to keep in mind that this is not "seterbruk" or a seter system to our standards, as no element of provision for a winter supply for man or beast is implied.

Neither would Norwegian ethnologists be happy to apply the term transhumance in this connection, as we would like to reserve this term as a terminus technicus to describe the transhumance proper, i.e. the periodic migration of only one species of domestic animals, preferably sheep, between two or several different climatic zones, to secure the grazing for the herds all through the year. Transhumance proper, as a system, is operating outside the domaine of the farm. In the transhumance of sheep e.g. in central and mediterranean Europe a hired shepherd is tending the flocks of a number of farmers, and the sheep are being moved sometimes across considerable distances, and usually between different zones of climate and altitude. Transhumance of sheep is even found in Norway. During the last 150 years the numerous flocks of sheep from the intensive farming areas of Jaeren, Rogaland, have been spending the summer grazing period in Ryfylke-/Setesdalsheiene, - the enormous flocks being tended by "professional" shepherds. In winter, the sheep are returned to the lowland farming areas for their winter pastures.

All the mentioned practices of seasonal migration of animals are drawing upon the resources of the remote outlying areas. Of the three, however, the seterbruk, or the seter system proper, has by far been the most important, and is representing an economic system of extensive farming, with the seter and the farm making up a complex whole.

We have already noted the importance of the seter as a main station or centre for the preparation and gathering of the winter supply. How this worked out in practice, and how different solutions were found in different ecological surroundings, will be discussed in the following.

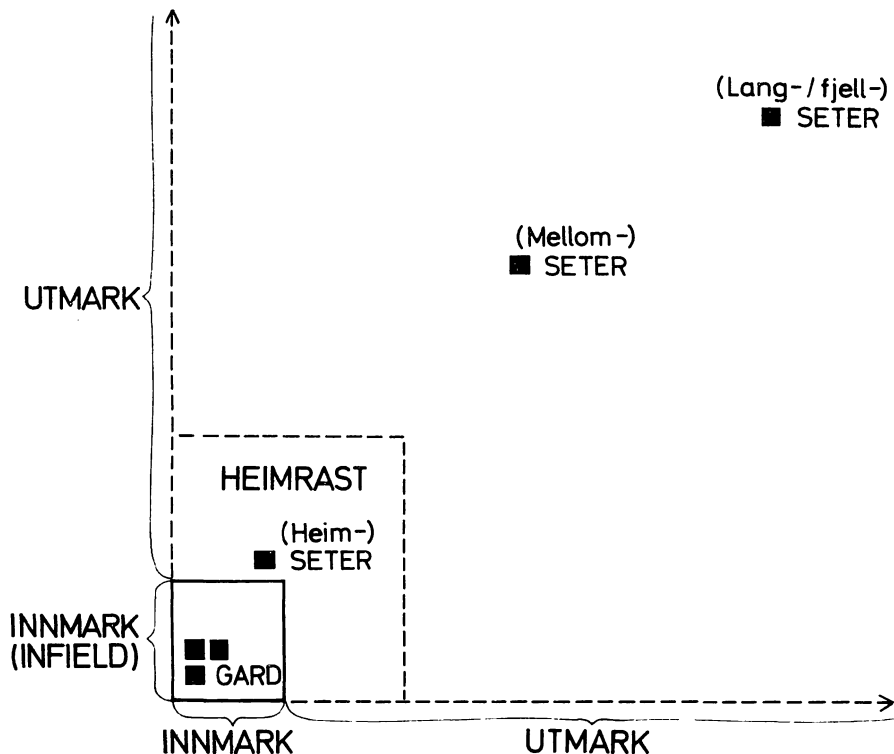
We have here first of all a systemic circulation of resources whereby solving the main problem of winter survival for the livestock also secured a supply of food for the farming population, and gradually also products for sale. A great deal of the work carried out in the seter area then, is, as we have seen and will be even further aware of, related to the livestock-keeping.

But the seter served even as a centre for other activities in the exploitation of resources. The seter served as an annex to the farm, also in being a basis during hunting and fishing, during charcoal burning and tar production, and even, - as was commonly the case, during the regular collection of necessary wooden material and birch bark. Primarily this was for private consumption only, but often a surplus could bring ready cash to the farm when brought to market.

Let us now turn to the different elements mentioned, and concentrate for a while on the various material manifestations representing them.

It is important at this stage to stress the fact that underlying this extensive system of resource exploitation is an extreme adaptation to the ecological environment and nature's cycles. This is perhaps most apparent when we recognize the various types of seters and seter systems ("seterbrukstyper") which have developed in Norway.

Roughly grouped we may say there are three types of seters in Norway, based on the functional classifications heimseter, mellomseter, (lang-)-fjellseter. The differentiation refers to their geographical situation and setting in relation to distance from the farm and/or altitude.



The heimseter ("home"-seter) is by definition situated close to the farm, in the "heimrast". The distance may vary from one or two kilometres from the farmhouses, to ten or twenty kilometres. The altitude of the heimseter will of course vary in relation to the farm settlement itself, but generally we would say that the heimseter is situated higher than the farm. In the eastern areas of the country we find the heimseter at about 200m above sea level. There are, however, instances where the heimseter is situated at a lower level than the farm. The heimseter was used for a short grazing period as soon as the pastures allowed it in the spring, usually a fortnight around mid-summer. But the heimseter was only a sort of stop on the way to the main seter, fjellsetra or sommer-setra. Returning from the high mountain pastures at the fjellseter in the autumn, it was also very common to stay for a while at the heimseter for a new short grazing period before the animals were brought home to the farm.

The main seter, the summer seter, was usually situated rather far from the farm, deep in the woods or in the wide high mountain areas. The distance may vary, however, from five kilometres to around seventy, - a considerable distance in steep and rugged terrain.

When the summer seter is remote and situated at a high altitude, we often find a third type of seter situated between the two types of seters already mentioned. This made the seasonal treks easier, but also served as an adaptation of grazing to enable exploitation of vegetation at different altitudes. The number of seters, then, being used by a farm, is varying according to the geographical and ecological environment. In an area with considerable differences in altitude

and wide mountain areas, the number of seters belonging to a farm is high, and may include several examples of each type of seter mentioned. In other areas, (especially in the eastern lowlands), characterized by a more level landscape and limited utmark areas, one has been confined to the use of one seter only. - We know, however, from older sources that it was more common earlier to have a set of seters, while the tendency during the last century has been to use/have one seter only.

These seter types, then, can be put into use under different exploitation systems, again according to the "lie of the land" and its resources. The distribution of the main types of systems may easily be mapped into specific regions ("seterbruksområder"), and Dr. Reinton has made the following functional distinctions:

1. "Fullseterbruk"

When the seter personnel is living at the seter all through summer, they are equipped with a complete set of utensils for milking, and for the making of butter, cheese and other milk products at the seter itself. This constitutes the most common system, with a wide distribution. (See map.)

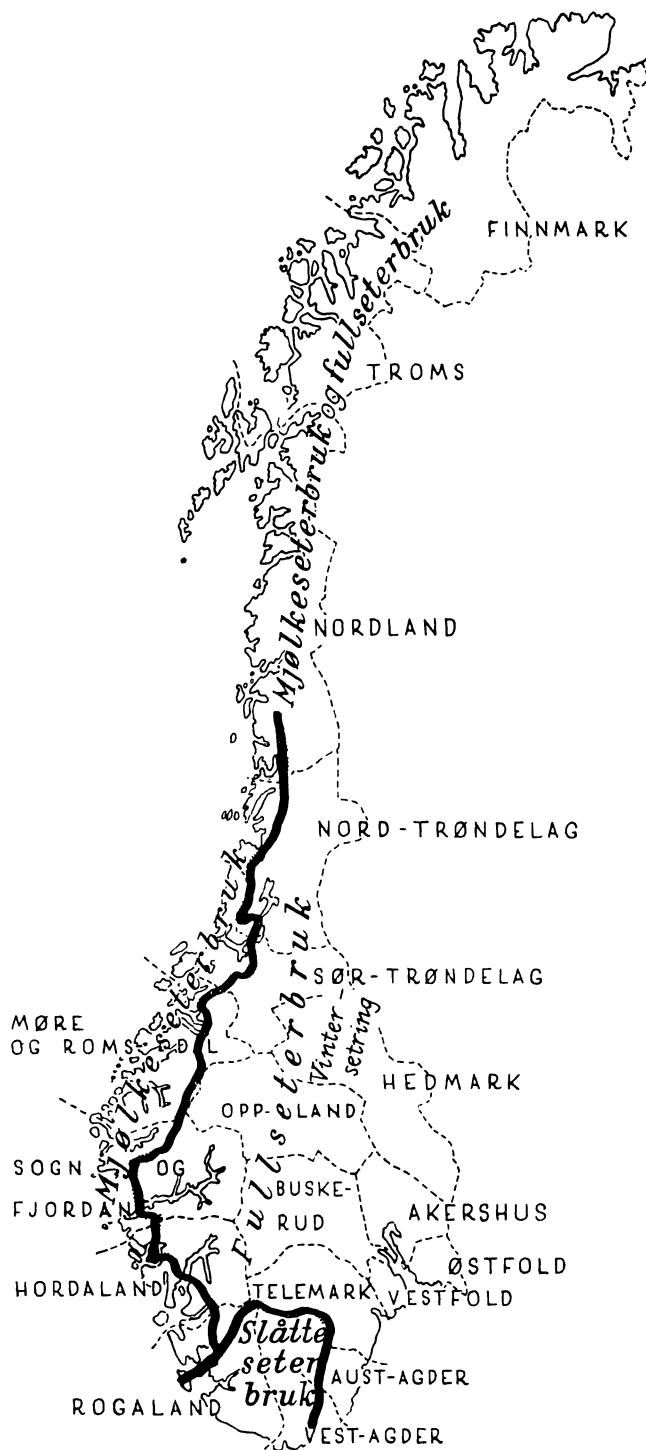
2. "Mjølkeseterbruk" (milking seter)

When the animals are being milked at the seter, while most production of butter, cheese etc. is done at the farm. This system is found in areas where the distance between farm and seter is short.

It has often been discussed whether the animal droppings was made use of as manure on these meadows at all, but there should be no

doubt about the fact that the meadows more often than not were manured in one way or another. Commonly the animals were allowed to graze on the meadows as soon as the hay had been saved there, and in the north and east a systematic way of manuring the area is found by way of keeping the animals in movable folds for some period of time. Where there were byres on the seters the manure heaps were usually spread on the seter meadows in the autumn. The regular manuring of the seter meadows certainly contributed to the high quality and food value of the hay collected there.

However, by far the highest amount of hay was collected even further away from the farm, in small grassy patches widely scattered in the woods, on the hillsides and in the mountains. Bog grass (like matweed) and different kinds of rushes were also cut and gathered in large amounts. This work continued all through the summer and way into the late autumn, when the last of the rushes were gathered after the bogs and the lakes were iced over. Usually none of these areas were fenced in, but they were regularly used and reaped by the same farmer; - or he exploited them through a certain rotation system, to let the patches rest for a year now and then. Some sources, mainly from the east of the country, also mention competition among the farming community to get hold of the best grass patches every year. The one who first put his scythe in an area was to have its grass that year. On a set day when they were allowed to start, they all raced from the seters, to the different far off meadows and grassy patches, to get hold of the best spots. Early laws and regulations, like the Frostatingslag and the "Landslov" of 1274 have specific rules on these practices. We get an indication of the great importance of this hay gathering from the existence



of an enormous number of place names of "utslätter", (outlying meadows) all over the country. Unfortunately knowledge of these are rapidly dying out, as they are falling out of use.

In 1917 four times as much grass and hay was collected in this way in the outlying areas than on the seter meadows proper. In certain areas of the country, grass is still collected in this way in rather remote meadows, but mainly in bad summers. - Production and collection of grass and hay on the seter meadows, however, has become increasingly important during the last few years, especially in the cattle areas of the eastern central valleys.

Men and women, - most commonly the whole family on the farm, and all age groups - were co-operating in this haymaking. The longhanded scythe was operated by the men, while the short-handed scythe was used by women as well as by men. More generally the women's job was to turn and gather the hay. Men and women were often performing this work in pairs. The hay was usually dried on the ground, but in certain rainy areas one would find permanent drying racks for this purpose. When dry, the hay would be carried or brought on a sled to a hayshed, or a stack was built. The hay from the seter-meadow was stored in a shed or barn at the seter. Every farmer would have a number of haysheds or stacks spread out over a wide area, at quite a distance from the farm. - Haysheds of this kind are mentioned already in the Saga of Håkon Håkonsson (13th cent.). Caves and overhanging rocks would also be used for storing purposes. Only when the snow came in the winter and gave good transport conditions where there were no tracks or roads, the hay was brought home on a sledge.

A special means of transportation for both raw grass and hay was used in the west in the extremely steep mountain sides. By means of two circular nets a tightly packed ball of grass or hay was made up and fastened closely. Then it was simply rolled down the hillside, and due to its own weight it gathered good speed. Down in the valley or by the fjord it was picked up for further transport, quite often by boat.

Apparently in the latter part of the last century a new method of transportation, - by aerial cable, - was introduced and constructed in great numbers in the west. In this way loads of hay could be transported easily at least part of the way in rough, steep terrain, and many otherwise inaccessible grassy patches could be reaped thanks to the aerial cables. The great number of such cables which can still be spotted in the field even in remote areas, show the economic importance of the widespread haymaking. (Ex. Mørkrisdalen.)

Another resource of extreme importance to the livestock husbandry was the foliage, twigs and bark of various kinds of deciduous trees, which grow abundantly up to an altitude of about 900m above sea level. This was all used as common fodder, almost to the same extent as hay, and I would like to stress here that it has been wrongly asserted far too often that leaves and twigs were used in emergencies and as substitute only. On the contrary, livestock has been regularly fed with leaves and twigs in most parts of the country. In fact this kind of fodder gave the animals more varied fare, and it contains among other things valuable minerals etc. which help to keep the animals healthy and thriving through the winter.

The use of different kinds of foliage for fodder is of an old age, and the gathering of leaves is probably an older practice than hay-making. Pollen-investigations in the eastern and western parts of Norway have shown that great quantities of leaves have been used in the early animal husbandry of the Neolithic period. The poem *Rigspula* from the Edda also mentions the gathering of leafy twigs. (Late Viking Age.)

Leaves, twigs and brushwood could be gathered without any special tools, they were simply broken off. By the late iron age a certain kind of sickle ("snidil") was introduced for cutting leaves and twigs, and this has continued to be the only tool used for this work in addition to an axe.

A number of sources mention the importance of leaves and twigs as fodder, and in the land registers this resource is always mentioned among the "portions and privileges". The value of the woods of deciduous trees has indeed been the fodder value, all through the centuries up to our time, and they have always been treated as private property. (cf. fenced-in meadows). Even extremely remote parcels of trees were exploited in this way (e.g. Jostedalen), and always under a sort of rotational system, to allow regrowth.

The types of foliage gathered were of course dependent on the local vegetation. The most common type was birch (*Betula (pubescens)*), then alder (*Alnus*) and aspen (*Populus tremula*). Different kinds of willow (*Salix*) were very commonly used, and indeed also the rowan (*Sorbus aucuparia*). All over the country the elm tree (*Ulmus glabra*) was regarded as the most valuable

species, but it was not growing so extensively as the other species mentioned. (The elm was of course also treasured by the population because of the value of its bark as a substitute for breadmeal in difficult times.)

"Lauvinga", or the gathering of leafy twigs, was a regular working season, which started in the early summer, before the haymaking. When most of the haymaking was done, the collecting of leaves continued. Men and women alike took part in this work, often the milk maid at the seter collected leafy twigs in the vicinity of the seter for the farm's winter store. The twigs were gathered and bundled in sheaves, which were hung on the shorn trees for some time to dry. After a week or two, the sheaves were gathered in stacks of around 300 sheaves, - quite similar to the haystacks, secured with vertical poles. The stacks were left like this until well into winter, when the sheaves were brought home to the farm on a sled, just like hay.

Statistics show that even as late as in 1917 considerable quantities of leaves and twigs were used as fodder. Sogn og Fjordane in the west was on top with almost 3000 tons, while Hedmark and Oppland are only a little below this level. Leaves and twigs were eaten by cows, sheep and goats alike, leaves were also given to the horses, soaked in water and meal. The farms have collected a regular number of sheaves every year, most commonly between 2000 and 5000 sheaves.

We have seen that all parts of the green vegetation has been exploited for fodder, but even above the limits of brushwood and grassy patches, in the so-called bare mountain, there were valuable resources which were exploited in

certain areas. This was the moss - or lichen - (*Cladonia rangiferina*), which was collected in the late autumn on the mountain plateaus.

The collection of moss or lichen went on in the remote sommer seter areas, and without the possibilities of seeking shelter on the seter it would have been impossible in most places to carry out this work. In this way, the range of operation for the farms were considerably widened.

The main moss/lichen areas are in the central mountain regions of eastern Norway, and here the greater part of the "staple diet" for cattle consisted of lichen during the winter. The statistics from 1917 confirms this, with Oppland, Hedmark, Sør-Trøndelag as the main lichen consumption areas; - and we might add that this region continues well into Sweden too, in the adjoining mountain regions there.

To help us grasp the amount needed per farm, an example from Vågå tells us that in 1916-1917 control weighings showed that the cows were given more than four times as much moss/lichen as hay per day. (3 kg hay + 13 kg moss/lichen per animal per day). It seems to have been quite common to collect 5-6 sled loads of lichen per cow every year; (Engerdal, Folldal,) - each load may be calculated at approximately 350 kg.

The actual work of collecting the moss/lichen was done by men and women, young and old alike, and it was tough work in the wet and chilly autumn days. A moist climate was, however, to be preferred during this work, as the lichen is extremely brittle and impossible to work with when dry. When it is wet, bigger flakes can be ripped off. Usually they started work in the early hours

of the morning, while rime and dew would still be covering the ground. The moss was ripped with the hands or with rakes, and gathered together in tightly packed heaps or loads suitable for one sled when it was brought home. The heaps were resting on heather or juniper branches or beds, so as not to stick to the ground when it froze in the winter, and they were marked with a rod to be easily recovered. One person might be able to gather two or three such loads of moss/lichen in one day, depending on the area. Sometimes one would have to cover a wide range, and one could not return to the same area until some years had passed, to allow regrowth.

The loads of moss would freeze to a solid block in winter, and they were brought home to the farm in this shape by horse and sled. This was dangerous work for man and beast, and many accidents have happened when the load of heavy frozen moss overturned.

The amount of work which went into the gathering, stacking and transportation of the fodder from these outlying areas was, as we have seen, enormous. Taking the moss as an example: we know that one man could gather 3 loads in one day. 150-200 loads of moss would be the average quantity needed on a regular farm. Four men then would be occupied for two weeks only with the gathering of the moss, not to mention the transportation in the winter. The moss-mountains were usually so remote that it would take one whole day - and even more - to fetch one load only. This meant that the transportation of hay, leaf sheaves and moss would occupy the male part of the farm population for a great part of the winter season, implying hardships and even danger to both man and horse in changeable winter weather.

This extensive exploitation of fodder resources from the seter area during the winter season has led to the existence of a special kind of seter system in those areas where the distance between the farm and the main seter areas was long. We should also add that this special seter system belongs to the areas with an extremely high moss consumption (and therefore extreme transport problems), - in northern Oppland and Hedmark, and southern Trondelag. (See map). The seter system I am referring to is the winter seter, - the practice of bringing the livestock to the seter for a second time during the winter, staying from November to February, feeding the animals indoors at the seter on the fodder that was collected in the seter area during the summer season. In addition to the milk maid, one man and a horse was occupied on the seter all the time, bringing home hay and moss. - Another type of winter seter system consists of staying on at the seter through the autumn and first part of the winter, as long as the fodder lasted.

The seters used in this way are all very well equipped, with solidly built houses, looking indeed more like regular farms than seters. This special type of seter system must be seen as a solution to the transportation problems, and it is attached to the moss/lichen-using area of east central Norway, - plus indeed the neighbouring districts of Sweden. It represents a highly developed system of adaption to and exploration of natural resources for fodder in the area.

In addition to these laboriously evolved systems of gathering and using fodder in the livestock keeping, a number of other ways and means existed for bringing the cattle, goats and sheep extra nourishment. Generally, this consisted of using the bark or green parts of shrubs, juniper etc. for extra nourishment, dry or soaked in water.

As we have seen, all accessible resources were used in the traditional livestock-keeping farming economy of Norway. The main thing - and indeed the difficult thing - was to keep a fairly high number of domestic animals alive through the winter. This was important to secure the necessary supply of meat (proteins) mainly for own consumption, but even for sale. The importance which often has been placed on the yield of milk, butter and cheese in many historical studies, would to my mind need modification, as the yields were of limited quantity, and were got mainly during the summer season. There is a danger, I think, of putting too much importance on the production of butter in the old farming economy, and a tendency of overrating the economic value of the butter production. Butter is, as we all know, a delicate product which is difficult to keep in transport and storage. In many areas butter was produced for home consumption only, never for sale. In fact, we have found, during late research and fieldwork, that the most common product for sale from the milk yield has been a sweet cheese made from mixed cows' milk and goats' milk, and a matured sour milk cheese. Of course, butter has been sold to the towns from certain areas of the country, but the extreme economic importance which sometimes historians seem to see in the butter production is simply not apparent in our material.

The ability to exploit the resources fully in this livestock-keeping farming economy, was, as we have seen completely dependent on great manpower, - many hands -, which would be recruited from the farmer's family itself, and possibly (indeed very likely) from extra hired labour, to the extent it could be afforded. - Clearly, this is a complex economic system, neatly ballanced on a livestock keeping at a certain optimum, relative

to manpower and exploitation of wide outlying areas. This system of animal husbandry has often been described as being based on a principle of underfeeding, - but if we were to study more closely the details of the old farming system, I think we would find it aiming at as fair upkeep as possible of the stock during winter. Research has to be put into this side of our cultural history, however, before we can say we fully understand our main traditional economy. So far we are still relying on too many adopted assumptions.

We may add, shortly and in passing, that it was the wide, open grazing areas of the mountain regions that allowed the droving system to flourish, and in this way cattle, sheep, goats and horses, were, by economic transactions, moved from the producing areas to the market areas of the country. The drovers were the first to bring capital into Norwegian farming, as Dr. Reinton has pointed out. This was, however, outside relations for the farming community, - a system overlying the actual functional system of the farm.

To complete the functional system of the farm though, it is essential to mention the exploitation of still more resources from the seter area. The hunting and fishing possibilities in the mountain regions no doubt easily falls to mind. The seter itself was an important station during such missions. - All these activities mainly served the selfsufficiency of the farming community, while furs e.g. served as payments for taxes, or might be sold or bartered for other goods. The hunting of small game and the snaring of birds likewise have been vital activities in many farming communities.

The extraction of iron ore from the bogs, charcoal-burning, tar production, exploitation of wooden materials, birch bark etc. - it was all of vital importance to existence in the traditional farming communities. Again, the seter area was the scene of activities.

The economic significance of these multi-purpose resources is evident. As professor Stigum has put it: "the old farm is inconceivable without its outlying areas". - Or, we may put it bluntly in another way: survival on a traditional Norwegian farm was not possible without its extremely wide outlying areas, which were brought into a functional system of regular exploitation. The social values which may also lie in this way of life and its practices, may not be quite as evident, - but there is no doubt that the regular mobility of this farming system was treasured by all parts of the farming population. The free life in the mountains and the pleasures of various types of joint activities and efforts apparently by far compensated for the hardships tied to it. No doubt it brought variation into the lives of both men and women, maybe even recreation in all its manifold ways.

Literature: (main titles only)

- Lars Reinton: Saeterbruket i Noreg. I-III. 1955-1961.
- Lars Reinton: Til seters. Norsk seterbruk og seterstell. 1969.
- J. Grude: Stølsdriften på Vestlandet. 1891.
- Anders Sandvig: Seterliv og seterstell. 1942.
- Kr. Østberg: Saeterbruket i Norge. 1930.
- Bjørn Hougen: Fra seter til gård. 1947.
- Ragnar Pedersen: Seterbruket på Hedmarken. 1974.
- Axel Sømme: Jordbrukets geografi i Norge. A. 1954.
- Sigurd Eikeland: Driftesmalen. 1966.
- John Frødin: Zentraleuropas Alpwirtschaft. I-II. 1940-1941.
- Norsk Kulturhistorie I-V. 1938-1942.
- Fieldwork reports 1969-1973. Institutt for folkelivsgransking, Universitetet i Oslo.

(This is a summary of a lecture given at the University of Edinburgh in April 1976. The lecture was accompanied by a number of slides, - unfortunately photographs cannot be reproduced here.)