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## ARTICLES

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# OBSERVATIONS ON VLACH SHEEP-MILKING AND MILK-PROCESSING IN SOUTH-EAST EUROPE

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### Summary

Observations made on traditional sheep-milking and milk-processing during visits to transhumant sheep flocks at their summer mountain grazings in south-east Europe between 1974 and 1985 are presented. The principle regions of Vlach pastoralism that were studied were in the Carpathian mountains of Romania, Czechoslovakia and Poland. The summer settlements comprised several enclosures for sheep and one or more huts for accommodation and cheese-making. The milking enclosure had a figure-of-eight plan, the constriction between the two halves being roofed to form the milking shed. Details are given of the customs, implements, milk products and their terminology. Hard and soft cheeses were made at the settlement and the whey produced after the formation of the curd was made into sweet and sour drinks, the remaining "lean whey", being fed to pigs kept for the purpose.

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### Key Words

Carpathians, Cheese, Milk, Sheep, Summer settlements, Transhumance, Vlach, Whey drinks.

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### Introduction

Milk was one of the foods developed after domestication when livestock became too valuable to be killed for meat. It is now termed a secondary Neolithic product obtained from a living animal in contrast to a primary product for which the animal has to be killed (Ryder, 1983a: 713; Greenfield, 1988). Milk production is the most efficient way of converting plant protein into animal protein, since its efficiency of energy utilisation is 27 % compared with only 6 % with sheep meat. Sheep milk has more fat than that of any other farm animal - 7.5 % compared with 4.5 % in goats and 4 % in cattle. It also has 5 % of the pro-

### Résumé

**Observations sur les brebis laitières de Vlach et production de lait dans le sud-est de l'Europe.**

L'auteur présente des observations réunies entre 1974 et 1985 sur les brebis laitières et la production de lait traditionnelles, au cours d'enquêtes sur les troupeaux transhumants en estive sur les pâturages d'altitude d'Europe du sud-est. Les principales régions de pastoralisme Vlach qui ont fait l'objet d'enquêtes se situent dans les Carpates roumaines, tchécoslovaques et polonaises. Les sites d'estive comprennent plusieurs enclos à moutons et une ou plusieurs huttes pour le logement et la préparation du fromage. Les enclos de traite sont en forme de huit, la constriction entre les deux parties principales étant couverte pour la traite. Des détails sont donnés sur les coutumes, les instruments, les produits laitiers et leur terminologie. Les fromages frais et secs sont fabriqués sur le site et le petit lait issu du caillé est transformé en boissons sucrées ou aigres, le babeurre étant donné aux porcs élevés sur place.

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### Mots clés

Carpates, Fromage, Lait, Mouton, Sites d'estive, Transhumance, Vlach, Petit lait.

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tein casein compared with 2.5 % in cows milk (Ryder, 1983, 720). The sheep milking to be described is associated with transhumance, which is the seasonal movement of livestock between winter and summer pastures to avoid variations in climate; it is a highly efficient method of exploiting economically two distinct environments that would otherwise be unable to carry livestock. Exploitation by milking involves the storage as cheese (and other products) of milk obtained in summer. The cheese is either sold or used for home consumption in the winter. Today the milk obtained is often kept by the shepherd as his payment. In the past it was shared among the different families

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**Fig. 4 :** Ewes of the Turcana breed being driven towards the *strunga* milking shed (the back of the one shown in fig. 5) at a *stina* near Paltinis in the Transylvanian Alps (June 1982).

The Romanian huts were of similar size and were originally built of logs. Taylor (1987) illustrates one in the Transylvanian Alps made of beech and pine planks. The ones I saw had three rooms with a separate entry from the outside. The cheese-making room with the fire was at the left hand end. The bedroom was in the centre (although some shepherds usually slept outside near the sheep to guard them from predators) and the third room was a store.

In the corner opposite the door of the Polish hut was an open wood fire below the level of the wooden floor, and above the fire was a hole in the roof to let out the smoke (after it had smoked cheeses) as in the Romanian huts. Adjacent to the fire was a vat of sweet *zetyca* (see below); beyond a partition was the main cheese-making area in which there was a vat of sour *zetyca*, soft *bundz* cheese draining in cloths, and hard *oscypek* cheeses drying on racks. Above this room was a storage loft. Although basically similar the huts were clearly variable in layout. The Vlach name for the hut in Yugoslavia was *katun*.

### Milking

The main, milking enclosure had a figure-of-eight plan, the important feature of which was the roofed constriction, where the sheep are milked, which separated the enclosure into two equal parts (fig. 4). The roofed constriction was described (in Greece) as a lych gate by Wace and Thompson (1914), and is known as a *strunga* in both Romania and Czechoslovakia. Here there were one or two narrow gates or doors through which the sheep pass for milking after which they run away into the other half of the figure of eight. The milking area had two or four seats on which the (usually male) milkers sat side by side with their backs to the approaching sheep. Behind and between mil-

kers one and two, and three and four, were the small swing doors through which a sheep that had been caught by another shepherd was pushed for milking. As usual with sheep, the animals were milked from behind (fig. 5).

Sheep-milking in general depended in the past on the killing of lambs at a young age, on some method of restricting the sucking of the lambs, or on early weaning. Today in the area in question the lambs are weaned early. The lambs are born from January to March depending on the locality. In Poland the lambs are weaned in May at the time of the transhumance, when the lambs are put in separate flocks with the yearling ewes on the lower slopes. In Romania the lambs are weaned at ten to twelve weeks a few days after reaching the mountain pastures (Camalesa, 1975).

In the mountains milking is carried out morning and night between 5.0 and 7.0 o'clock with often a third milking at noon, which I saw in Czechoslovakia. Pop (1968) gave a somewhat different (no doubt idealised) daily routine for Romania as follows:

0400 to 0530 hours, milked.

0600 to 1100 hours, water and pasture (only until 1000 hrs when hot).

1100 to 1200 hours, milked again.

1200 to 1400 hours, resting.

1400 to 1800 hours, water and pasture.

1800 to 1900 hours, milked for third time.

1900 to 2100 hours, water and pasture (not until 2000 hrs when hot).

2100 to 0400 hours, resting.

In Romania I was told that one man milked 200 sheep in the two hour period, whereas in Czechoslovakia it took three men to milk less than twice that number. The



**Fig. 5 :** Milking ewes of the Turcana breed in the *strunga*, the back of which is shown in fig. 4, near Paltinis, Romania, June 1982.

Czechoslovak sheep were probably more productive animals taking longer to milk. In any event the milking is hard and labour-intensive work. Milking is continued until July in the south and as late as September in the north depending on the date of lambing and the productivity of the ewes.

### Milk processing

The milk is processed at once in the mountain settlement, and since no butter is made, the main product is cheese and its by-products. Cheese manufacture is basically a method of preservation which allows liquid milk to be stored as a solid for winter consumption. The product is highly nutritious, containing 25 % protein compared with 5 % in milk and no more than 20 % in meat. Cheese also has 35 % fat compared with 30 % in meat (Ryder, 1983b). The ordinary souring of milk produces an acid curd, but for cheese-making, the curdling is speeded up with the enzyme rennin. This is used in the impure form, rennet, the traditional source of which was the stomach of lambs; in Romania, one lamb of a pair of twins was killed for this purpose and its skin was kept to make hats. The curdling takes 30 minutes after which the curds are broken with a wooden paddle. Rennin acts to convert the soluble protein caseinogen into casein, which forms an insoluble calcium-casein compound.

The main subsequent stages of cheese manufacture are a straining in linen cloth (for several days) to separate the liquid whey from the solid curds, which is followed by varying amounts of pressing of the curds to remove the last traces of the whey (fig. 6). In Romania, instead of having separate weights, large blocks of salt-lick were

being used to press the cheese before being broken up and given to the sheep to lick. Here, in the past, wool cloth was used as a strainer, so illustrating the use of "soft" animal products that rarely survive in the archaeological record and also the self-contained nature of nomadic flocks. In contrast, archaeologists think in terms of stone or ceramic cheese strainers as the evidence required to indicate cheese-making.

The first in the range of products made from milk is known in Romania as *cas*, and in Poland as *bundz*, which is eaten in summer. This was described by the shepherds as fresh cheese, but may in fact be curd since it is made into two kinds of cheese. This illustrates that in dealing with milk products one has difficulties of biochemical definition as well as of language. The first of these is a soft cheese known as *telemea* in Romania, which is like Greek *fetta*. Polish *bundz* is matured into *bryndza* soft cheese. In Romania this is stored in brine for consumption in winter. The term *bryndza* is used as a general word for cheese in Czechoslovakia where the soft cheese is known as "lump cheese" and has only 15 % dry matter. The second cheese is a hard one which is known in Romania as *Brinza de Burduf*, which is matured in a lambskin. As elsewhere in the Balkans a hard *kashcaval* cheese is made in Romania. A similar hard cheese made in Czechoslovakia is *parenica*, which has at least 50 % dry matter; another Czechoslovak hard cheese is *osteopek*, which is pressed to a small size and smoked in the roof of the shed to give a cheese with more than 70 % dry matter.

The Polish equivalent is *oscypek* and I obtained the fullest and professionally-translated description of its manufacture with indications of the same procedure and implements in Czechoslovakia. The curd is first measured in a wooden *czerpak* cup (fig. 7) and kneaded into balls, which are heated in water at 60°C for up to 15 minutes. The resulting elastic mass is formed into the shape of a cylinder, which is pierced with a metal rod or wire along its axis to allow the remaining whey to drain. A carved wooden ring in two halves is placed around the middle of the cheese to imprint a pattern on the surface and the protruding ends are shaped into cones, a wooden button being used to flatten the tip of each conical end. The cheese is then chilled in water to fix the shape, and soaked in 20 % brine for 24 hours, after which it is smoked in the roof for three days. Such cheeses are about 21 cm long by 8.5 cm in diameter and weigh about 700 g. In Czechoslovakia as well as in Poland the carving of wooden curd paddles, *czerpak* cups with handles in a range of sizes, shallower ladles and cheese moulds, has reached a high art (fig. 8).

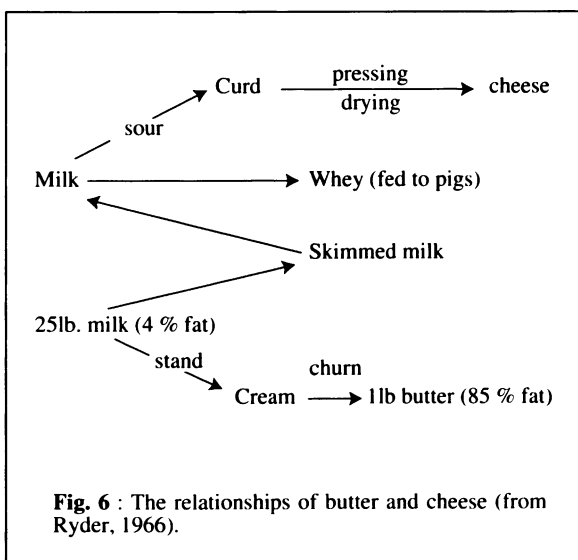
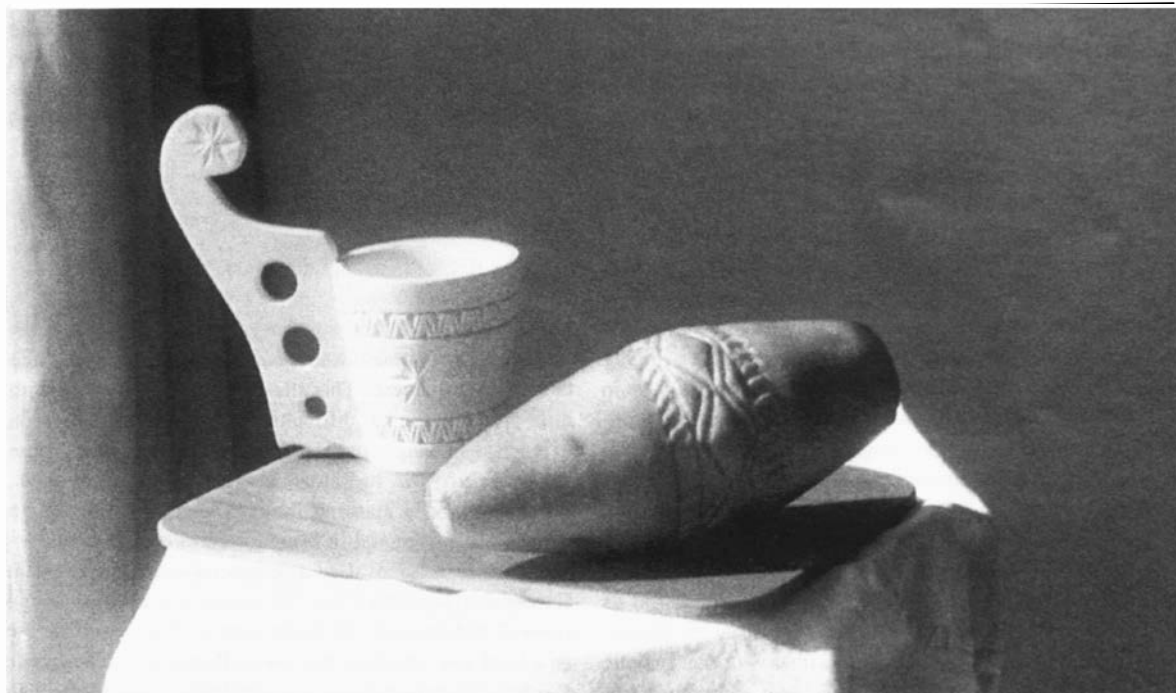


Fig. 6 : The relationships of butter and cheese (from Ryder, 1966).



**Fig. 7 :** Polish hard, *oscypek* cheese in front of a half-size replica of a wooden, *czerpak* drinking and measuring cup (in the author's possession).



**Fig. 8 :** The two halves of a Czechoslovak wooden cheese mould carved to impart to the cheese the kind of pattern seen on the Polish cheese in fig. 7.

## Drinks made from whey

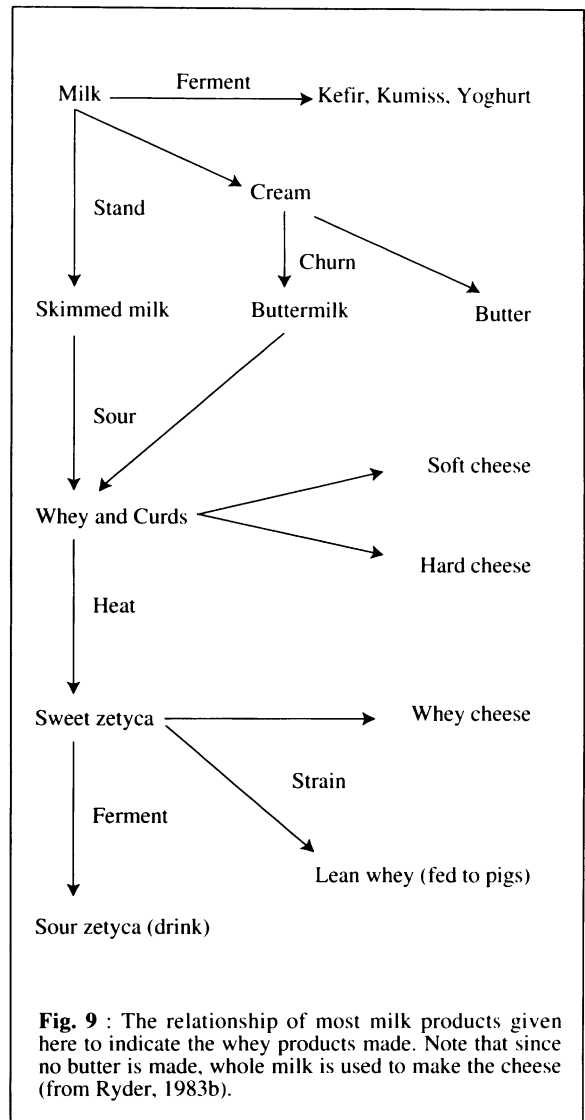
In all three countries the whey is made into sweet and sour versions of a drink: *jintita* (Romania), *zincica* (Czechoslovakia), and *zetyca* (Poland) (fig. 9). The whey is heated in a cauldron for 30 minutes at 60° to 80°C. This precipitates as granules, which rise to the surface, the 1 % protein left in the whey as albumin after cheese making. The top 6 cm containing these is skimmed off with a wooden ladle and constitutes the sweet version. The remaining clear liquid is known as "lean whey" and is fed to pigs kept specially to consume this by-product, although I saw these only in Romania, where one mountain settlement had a sty with eight pigs.

The sour version of the drink is made by the natural souring of the sweet version for three days, the fermentation process being started by adding some of the sour drink to the sweet drink. In taste, the sweet drink can be described as like granular milk, and the sour drink as like sour granular milk. If the precipitated solids are strained off instead of being left in the drink, they can be made into a whey cheese, which is called *urda* in Romania and Yugoslavia. This is a lacto-albumin coagulate, which is made by heating whey at 88°C. When acidified with vinegar, the precipitated protein combines with the less than 1 % fat and floats to the surface. Whey cheese is in fact widespread, a well-known type being Sicilian ricotta. The Basque name for whey cheese is *zumbera* (Ott, 1981). But in describing cheese-making and the feeding of whey to pigs, this author does not mention any whey drinks.

Finally, in Romania, two fermented milk products are made. The first of these, *covasit* (sour milk), is made by "starting" with existing sour milk and appears to be similar to Russian *kefir*. The second is yoghurt made by a different fermentation in autumn when the milk is rich in fat. This is stored in a barrel and is said to keep all winter if sealed. Fermentation highlights a hidden theme of this paper, which is the use of micro-organisms to start, make and mature milk products. This illustrates the amazing degree of control exerted by early pastoralists without recourse to a modern microbiology laboratory. It is hoped that this introductory account will stimulate others to define scientifically not only the traditional products made but the organisms involved. Modern products with the same name are not necessarily the same as the traditional ones.

## General discussion

This paper has concentrated on traditional customs and methods that appear to be associated with the Vlachs. Some of the methods, however, are common to other



nomadic groups, which illustrates the antiquity of a system that has probably been evolving since prehistory. For instance, paintings of traditional life in Bulgaria show *stine* identical to those of Romania complete with wooden milking utensils inverted over the fence posts to dry. Wace and Thompson (1914) described and illustrated a summer settlement in Greece, probably belonging to Sarakatsani nomads, which had a rough fold of tree branches with a wide entrance that could easily be closed, and a narrower exit with a post in the middle where the sheep were caught for milking. The male milkers sat on four stones opposite this gate, which was roofed like the

Vlach *strunga* and formed the porch of the cheese-making hut, which was erected to one side for the summer. (The Vlach huts were always at least 100 m away from the sheep pen.). The under-shepherds were visited each day by the head shepherd, who stayed in the village to sell the cheese. This would have been possible with the settlements I saw in Poland and Czechoslovakia, but less easy in Romania or in the past, where the migrations almost certainly took place over greater distances.

I have not detailed the shepherd organisation since this appears to be a more recent adaptation. But it is of interest that the Polish word for Head Shepherd, *baca*, is similar to the Romanian word, *baciu*. In Yugoslavia the words *bacija* and *bacilo* are alternatives to *katun* as the name of the summer settlement. The Romanian word for shepherd, *ciobani*, appears to be similar to the Turkish word for shepherd, *chabban*, and so may date back to the Turkish occupation of the Middle Ages.

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