

AN ETHNOARCHAEOLOGICAL PROJECT IN THE WESTERN RIF (NORTHERN MOROCCO): FIRST RESULTS

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1. INTRODUCTION

This paper summarises part of an ongoing ethnoarchaeological project in mountain areas of the Rif (northern Morocco). The main goal is to create new interpretative models, which may help to understand the archaeological record. The project has focused on a wide range of activities and technologies:

- Agriculture with particular emphasis on einkorn cultivation
- Wild plant use
- Wood uses
- Animal husbandry and herding systems
- Craftsmanship: pottery, basketry, leather technology, metalworking
- Building techniques
- The social role of woman

Some results have already been published (Gonzalez Urquijo et al. 2001a, 2001b; Ibáñez et al. 2001a, 2001b, 2002; Peña-Chocarro et al. 2000; Peña-Chocarro & Zapata 2003; Zapata et al 2003a, 2003b)

Interpreting archaeological material remains in terms of past human activities is not an easy task. In most cases, modern analogues are used for this purpose, sometimes unconsciously. However, it is the researcher's own experience the point from where the interpretation starts. In this sense, ethnography offers an excellent setting in which to observe and study the key factors involved in human behaviour. In using ethnography, the purpose is not to extrapolate contemporary situations and human behaviour back into the past, but to provide a framework through which we can formulate new working hypothesis for a better understanding of the archaeological record.

In order to define the characteristics of the first farmer communities in Spain several ethnoarchaeological projects have been carried out. Over the past decade, three distinct research fields have been investigated: agricultural techniques, transhumance patterns, and traditional crafts (González Urquijo et al. 1994; Ibáñez. et al. 2001b; Moreno 1997, 1999; Peña-Chocarro 1994, 1996, 1999; Peña-Chocarro & Zapata 1997, 1998, 2003; Zapata & Peña-Chocarro 2000). However, the evolution of agriculture in Spain during the last forty years has led to the retreat and final collapse of traditional agriculture. Consequently, as the rural farming systems broke down, most of the traditional activities characteristic of such economies have also disappeared. This situation has led us to look for new settings where such studies could be conducted

2. THE CASE OF MOROCCO

Three main factors explain the choice of Morocco for our ethnoarchaeological project:

- a) The pre-industrial conditions of the area that have allowed the survival of primitive agropastoral practices. It is particularly striking the degree of preservation of traditional ways of life, which has ensured the continuity of many activities and crafts, which have already disappeared from other close areas.
- b) the environmental setting similar to some mountain areas of the Cantabric region
- c) the proximity to the Iberian Peninsula.

The area under research is the Jebala region, located at the most western part of the Rif chain, in the north of the country (Fig.1). As far as climate and vegetation are concerned, this mountain area is Mediterranean, modelled by the alpine orogeny and with abrupt topography with altitudes above 2000 m. Precipitations vary with topography and at the highest areas exceed 2000 mm per year.

There are several vegetation levels but the landscape is dominated by woodlands of lentisk (*Pistacia lentiscus*), oaks (*Q. suber*, *Q. ilex*, *Q. coccifera/rotundifolia*) and strawberry tree (*Arbutus unedo*). *Q. suber* forests have been heavily disturbed by human activity and grazing developing into open woodlands of *dehesa* type. *Juniperus oxycedrus* and *Crataegus monogyna* are common. The shrub community consists mostly of *Ericaceae* and *Cistus*. *Nerium oleander* and *Arundo donax* are common elements near the watercourses.

Agriculture and animal husbandry are the economic basis of the area under research. Domestic animals include cattle, sheep, goats, donkeys, mules and hens.

3. USE OF DOMESTICATED PLANTS

3.1 Crops

Arable crops include einkorn, free-threshing wheats, barley, rye, maize and sorghum, which together with a wide range of legumes grown in back gardens and green vegetables are the main components of the farmer's vegetal diet. For the purpose of this paper, we will focus on the cultivation of an ancient wheat: einkorn (*Triticum monococcum* L.). Einkorn (Fig. 2) is a diploid wheat ($2n= 14$ chromosomes) that belongs to the so-called hulled wheats characterized by the presence of tough glumes, which remain attached to the grains after threshing. Despite the fact that einkorn was one of the founder crops of agriculture in the Near East, today it is a relic crop, rarely cultivated in areas of Turkey, Albania, Romania, France, Spain, Italy and Morocco (see Padulosi, Hammer & Heller 1996).

For many reasons, the Jebala region offered an excellent framework for such study. In the first place, agriculture is completely non-mechanized which allows to investigate agrarian practices and techniques in an archaic context. Secondly, einkorn is still used for human consumption, and therefore dehusking techniques can be directly studied (Peña-Chocarro et al 2000; Peña-Chocarro & Zapata 2003). Finally, straw is still heavily used within the rural economy of the area (Zapata et al 2003). In fact, the use of einkorn straw for thatching explains the survival of this endangered crop.

Typically, the period of sowing spans from October till January. Einkorn is always the last cereal to be sown after the first showers of rain when the earth is still damp. Previous tilling is not necessary, fields are just slightly cleared with hoes or by taking the animals to graze the vegetation. There are farmers, however, that do plough with wooden ards. Einkorn spikelets are then broadcasted and covered using either an ard with an iron share or a hoe.

Weeding is still a common practice. It is a female task carried out either by hand or with the help of a hoe. Weeds are collected and used for animal (cows, mules, etc) food in the same day of collection.

Harvest takes place during June and July. Einkorn is always the last cereal to be harvested due to its particular resistance to stand up in case of later rains. Different harvesting techniques have been identified in our area (Ibáñez et al 2001b). In all cases, their choice is entirely dependent on their ability to obtain long straw for thatching. Long straw is then the key factor if one considers the important value of straw within the traditional economy of the west Rifian communities. The different harvesting methods studied are as follows:

a) Sickle-harvesting.

The crop is reaped with a small sickle by cutting very low in the straw so long culms can be used for thatching (Fig. 3)

b) Uprooting by hand or with sickles

This method harvests grain and straw by pulling up the whole plant by hand or with the aid of a sickle, which working like a crook penetrates into the ground to uproot the plants (Fig. 4).

c) Harvest with pruning hooks

In the past, in a small area within the region of Chaouen, a kind of small pruning hook was used to harvest einkorn. This instrument was hafted into a long shaft made in wild olive wood. According to farmers, this method allowed to cut lower in the straw than sickles.

After harvesting sheaves are tied and left in the fields for a few days to dry up, and later on transported to the threshing yards generally located near the dwellings. Prior to threshing, ears should be separated from straw. For that, farmers either beat the sheaves against a stone or they may use a stick to beat the sheaves. Trampling seems to be the only threshing technique practised in this area. After trampling, spikelets are winnowed out with a small wooden shovel, and finally put into storage.

One of the most interesting aspects of this research has been the study of dehusking techniques (Peña-Chocarro et al 2000; Peña-Chocarro & Zapata 2003). It should not be forgotten that Morocco is one of the few areas where this crop is still used for human consumption and, therefore dehusking needs to be undertaken in order to free the grain from its husks. Different methods have been documented such as the use of holes excavated in the soil which resemble excavated mortars (Fig.5), rotary querns (sometimes with a layer of cork in between the two stones, wooden mallets, and pieces of cork used for rubbing the spikelets against a basket. For large quantities of einkorn the use olive mills has been recalled.

Apart from cereals, a wide range of pulses has been studied: broad beans (*Vicia faba*), peas (*Pisum sativum*), lentils (*Lens culinaris*), bitter vetch (*Vicia ervilia*), chickling pea (*Lathyrus sativus*) and chickpeas (*Cicer arietinum*). Particularly interesting are data regarding *Lathyrus sativus* for human consumption.

3.2. The olive

The olive is one of the most important crops of the region. Olive groves together with scattered olive trees are a common feature of the landscape of the region. Wild olive trees and feral varieties are grafted. Pruning is not a common practice but trees may be pruned to ease the harvest when they are too big. Harvest takes place during November and December and it is almost entirely carried out by women. Beating the tree is the commonest method. While one woman beats the tree, a second one collects the olives from the floor. Olives are taken to the household and stored in salt for later processing.

In the Rif most of the olive oil is produced by traditional methods which vary at the extraction level. Two different categories can be distinguished: methods that use pressing and methods that do not, but in any case, oil extraction requires a preliminary grinding of the olives into a mash. This activity is carried out using stone mills. Among the pressing methods, the commonest one is the use of a screw press which produces an oil without refining. Other techniques different from pressing are used in the area. These include:

- (1) the *sahreg* consisting on a pit with hot water where the olive mash is introduced and stirred allowing the oil to float to the surface. The oil is collected with the hands or using pieces of cloth to absorb it. Oil is stored in earthenware jars.
- (2) the *galgula* in which the olives are heated in a pot and the resulting mash is squeezed inside a piece of cloth.
- (3) Olives could also be introduced in a palm sack and by twisting the sack squeeze the oil out.

Over the long colonial period, farmers used different fraudulent systems to avoid tax paying. The main system consisted in crushing the olives with a stone and, by adding water, get the separation of the oil. Crushed olives could also be twisted inside a piece of cloth until the oil was pressed out.

Apart from cereal, legumes and olives, there is a wide range of vegetables and fruits that are consumed in the area. Most households have different fruit trees such as plums, apples, figs, pears, grapes, cherries, etc. While most of them are consumed fresh, others, particularly grapes, figs and plums, are preserved for the winter. The most common preserving technique is that of soaking the fruits in a solution of water, oil and ashes and then drying them under the sun.

4. CONSERVATION AND STORAGE

Food conservation and storage are mechanisms, which ensure the availability of a surplus within the community. The study of archaeological storage facilities and their remains may contribute to understand the role of the wide range of storage strategies in the past. The ethnographic data provide information on the different techniques used to preserve perishable foods and, on the way storage structures and containers are managed. Storage strategies may vary according to different factors, e.g. type of product to be stored, availability of particular raw materials, time-lag between storage and consumption of the surplus (Christakis 1999).

In the majority of villages under study crops were stored in large capacity basketry bins called *sulla* made in (*Arundo donax*) (Fig.6). Depending on the size of the crop items stored, the outer side could be plastered with cow dung to avoid losses due to penetration through holes. In addition, in every household it was used to store part of the harvest in clay or cow dung containers (*tonna*). Cork, palm leaves, cloth, skin etc were also materials used for different types of containers and storage bags. Within the house, *sulla* and *tonna* together with recipients containing oil were placed in a room in the upper floor *jasin* or in the *gorfa* the space under the roof. Houses may also have the *jezana*, a square room with partition walls that create small spaces where different crops are stored

Another category of storage facility is the silo. Up to recently, silos or underground pits were a common element of the landscape. Built both outside and inside the houses were an important tool for the management of the cereal reserves. They could keep large amounts of cereals for long periods of time. Construction techniques are very similar across the area. After excavating the pit, walls could be prepared to avoid water filtrations with a variety of materials from clay and/or dung layers to cereal straw hold with *Arundo* belts. The silo was generally closed with a flat slab sealed with a mixture of clay, dung and cereal straw. Access was allowed with the aid of a ladder or a simple rope.

Another possibility for storing food supplies and all kinds of valuable items is the use of *hri*, a kind of aerial granary. In the village of Kalaah, a few kilometres north of Chaouen, we have studied a peculiar concentration of *hri* on the slope of a mountain considered sacred (Peña-Chocarro et al 2000). The granaries appear scattered across several hectares in a well-delimited area surrounded by natural barriers, which make access rather difficult. From the distance, the granaries are almost invisible due to the presence of numerous trees, which hide them. All these constructions belong to the inhabitants of 15 villages

The *hri* is a small raised rectangular construction set upon two benches at the shortest sides and two or three stones at the middle of the longest side (Fig. 7). They are built with mud brick and thatched with rye straw. Access is through a small window raised at 1 m. above the floor. The spatial organization within the *hri* is carefully regulated: there is a mud brick partition wall running across the whole length of the construction, which divides the space into two parts. Each side can be also divided up into smaller spaces using wooden boards.

5. THE USE OF WILD PLANTS

Gathering wild plants for food is a well-known tradition in many agrarian societies. In the case of the Rifian communities, plant gathering is an activity still practised mostly by women. The categories of wild plants collected include mainly greens (leaves, stems, bulbs, roots, shoots). However, there is a wide range of other wild plants collected for consumption such as wild fruits, acorns, seeds or mushrooms.

Roots and bulbs are generally roasted in the oven and the milled into flour to make a kind of bread. This is the case of the roots from *Pteridium* and of some members of the *Compositae* family. Leaves and stems are generally boiled and then eaten with some kind of seasoning. Amongst the wild greens it is particularly interesting the *bokkola* a mixture of different leaves from wild species are cooked together.

Wild fruits from *Arbutus unedo*, *Myrtus*, *Rubus* etc. are collected and consumed as snacks. The pods of *Ceratonia siliqua* are roasted, milled and used to make bread. In addition, acorns have been widely used across the Rif. Their role in human food in traditional systems is well known. In Morocco, two species are consumed: those from *Quercus rotundifolia* (*djerba*, *taseft*), and less commonly those from *Quercus suber* (*dlem*).

Roasted or eaten in the form of bread seem to have been the most common ways of consuming acorns in the Mediterranean (Mason 1992). In the Rif we have documented the following ways of consumption: as green snacks, roasted, boiled, ground and mixed with milk, in the form of bread and prepared as cuscus.

6. THE USE OF FUEL

Within the rural communities of the region, wood is the most important fuel for domestic purposes. However, alternative fuels, such as dung used in open bonfires for pottery firing), are also known (Zapata et al 2003a). Firewood is used in three different types of contexts: the domestic hearths or *kanun* (cooking and heating), the bread oven, and open bonfires for firing pottery. Collecting fuel is primarily the task of women who may

walk long distances (up to 3 hours from the village) when the particular area is scarce in wood. While women prefer to collect dead wood, not always it is possible.

In the area under research, the most widely used species for domestic hearths are: *Q. rotundifolia/coccifera* (*djerba*), *Pistacia lentiscus* (*dro*), *Arbutus unedo* (*sesnu*), *Fraxinus angustifolia* (*dardar*), *Prunus domestica* (*barkok*) and *Olea europaea* (*zaitun/berri*). In all cases big branches are selected whereas for the bread oven they use smaller ones. *Cistus* (*oukir*) –in combination with *Quercus*- is used in some areas only for bread ovens and not for hearths.

In most of the cases wood is collected during spring and summer and, stored for the whole year. In addition, farmers who have animals need to collect tree fodder almost every day. The collection of tree fodder for domestic animals is a twofold activity: it provides with food for the animals, but, as a sub-product, remnant small branches are used as kindling. Most of the tree fodder comes from leaves and twigs of trees and shrubs. In the *Jebala*, the preferred species are: *Fraxinus*, *Arbutus*, *Quercus*, *Pistacia*, *Olea* and *Acacia*. When the soft part has been eaten, the small branches are left drying outside the houses and afterwards are used for fuel, in hearths and bread ovens (Fig.8).

Potters also need a greater amount of fuel for firing pottery, particularly during the summer when most of the work takes place. Wood selection is an important factor for successful achievement of industrial activities. Depending on the technical requirements, i.e. type of oven, type of clay of each particular situation, different types of wood will be selected. *Quercus ilex* and *Pistacia lentiscus* are highly valued fuels but other taxa such as *Olea europaea* and *Rosaceae* are also used. *Fraxinus* and *Pinus* are avoided because the surface of the pottery turns mat whenever used. Taxa with a high calorific value might also fracture the production.

It should be emphasized that in firing pottery firewood is not the only fuel used. As dung tends to burn slowly, bonfires are generally covered with dung cakes (see section on pottery). The discard of the residues from the different firing structures (domestic hearths, bread ovens, pottery bonfires) is an important question for archaeologists since it is related to the mode of arrival and deposition of the wood charcoal. The work in the Rif points to the fact that charcoal can be reused, stored and transported from one structure to another.

Domestic hearths are usually cleaned, before or after using them. Residues can be stored to be reused for cooking, or be used as fertilizer in gardens, sometimes mixed with animal dung. Bread making always produces charcoal that can be collected and stored to be reused. When needed, charcoal is sieved to get rid of the ashes and deposited in the brazier (*mishmar*), ready to be used. The charcoal residues produced during pottery firing are also collected and reused for cooking.

7. DUNG, AN IMPORTANT SECONDARY PRODUCT

In many traditional societies dung is an invaluable product which is rarely discarded. Production of dung is regular and predictable so it can be used for a large variety of uses. Manuring is perhaps one of the best known uses, but dung has been also used as fuel particularly in areas with heavy deforestation problems, but ethnographic research offers a great deal of information about many more uses. In northern Morocco the

use of this product as fuel only relates to the firing of pottery, however, other uses such as tempering of floors and walls or the construction of containers have been documented (Zapata et al 2003a).

Every year, a mixture of fresh dung from cows and water is used for tempering the floors and the walls of houses. Threshing floors are also tempered with the same mixture during the summer. For that farmers use large containers from which the slurry dung is spread with a broom made with *Pistacia* branches.

Regarding the making of containers with dung (Ibáñez et al 2001a), there are similar references from other parts of the world (Makal 1954; Hillman 1984; Ertug-Yaras 1997). In this area, the containers (*tabtoba* and *tonna*) (Fig 9) can be made 1) only with dung, 2) with unfired clay and 3) with a mixture of both dung and clay. The choice of any option depends upon the availability of raw material and its characteristics. In spring, for example, dung is too soft and its consistency improves when mixed with clay. Most of the work is carried out during the summer when containers can easily dry. On the other hand, during the summer, as the different crops are being harvested, it is possible to calculate the amount and size of the containers that will be needed for storing purposes. As it has been seen above, in most cases this type of containers is complementary to other types of storing facilities.

This activity is performed by women who make different pieces in order to have enough for the cold season. The techniques used are the same as the ones described for pottery making (Rice 1987; Gibson & Woods 1990; Orton et al. 1993): a series of short coils are joined and smoothed together. A mould can be used in order to shape the base and, in this case, a characteristic angle can be observed.

8. USE OF ANIMALS

Animal husbandry based on cattle, sheep and goat, is an important part of the subsistence-oriented economy of the Rif. Although there is a link to exchange at local markets, most of the production is household consumption oriented.

Almost every household has a couple of cows and several sheep and goats kept for milk, meat, and in many cases for dung. Generally, goats are more numerous than sheep because the kind of vegetation and landscape of the region is more suitable to these animals than to sheep. Donkeys and mules are very important as traction power. They are used in all sort of farming tasks such as ploughing, threshing as well as pack animals for carrying goods to the market.

Most of the labour associated with herd grazing is performed by children. Depending on their availability in the household, some animals may be stall-fed on stored fodder and wild grasses during part of the year or at least during the winter.

In the summertime, herds are taken twice to the pastures (communal and free) for grazing whereas during the winter months, flocks are taken out in the morning and brought back to their stalls in the afternoon. The provision of fodder for the winter is an important factor within the production system of the region. Winter fodder is composed of legumes (bitter vetch, chickling vetch, broad beans), cereals (barley, einkorn) and tree fodder (*Arbutus*, *Pistacia*, *Ficus*)

Rates of reproduction are of one or two births per year (in spring and in autumn) in goats, whereas sheep females lamb once a year.

Herds provide with a wide range of products (milk, wool, meat, hides, etc...), which satisfy the needs of the household. There is not a specialized exploitation focused on particular products, each household produces what they need at family level. In case of necessity, animals might be sold to raise money. Although in special occasions such as marriages, births or feasts, animals may be slaughtered, most of the meat consumed within the household comes from the market. The production of milk is entirely for household consumption. Production also includes other dairy products such as butter, yoghurts, etc. Cheese making is a rather uncommon activity within the region. Hides and wool were also exploited (Ibáñez et al 2002). As mentioned above, apart from meat, dairy products, hides and wool, domestic animals provide also with dung.

Chickens and hens are very common. They are raised for their meat and eggs, as well as for selling in the markets. Apart from chickens and hens, farmers eat turkey and geese meat which has a special status. In addition, pigeon meat was also widely consumed in the past..

Regarding hunting, the use of traps or hunting dogs is still a common practice. Animals such as wild boars, foxes, wolves, rabbits, birds, hedgehogs etc are killed whether for food, medicinal purposes, rituals, skins, etc

9. CRAFT ACTIVITIES

9.1.Pottery

Although different areas with different production systems were chosen for the study of pottery, in this paper we will concentrate in the region of Mokrisset, in particular in the pottery produced by the Gzaua tribe that belongs to the Berber tradition (González Urquijo *et al.* 2001b). The production system of the Gzaua pottery is an example of craft production of low technical complexity. Getting good quality clay is a major factor regarding technological aspects. Access to the raw materials is free so each potter takes care of their own supplies using local resources. Potters are always women who produce vessels built up with coils of clay.

As far as firing procedures are concerned, the Gzaua potters use different techniques. The simplest one involves the firing of small quantities for household consumption or simple exchanges within the village, consist of firing the pots using the domestic hearths (*kanun*) made of a shallow depression surrounded by three stones. The pot, covered with cork, is placed on top of the stones and then fired. For larger productions mainly for trade, firing is carried out in open fires built up using large shallow depressions excavated in the nearby hill slopes. At the base of the depression, the pots are placed on top of layer of wood, and then covered with dung cakes. A second layer of fresh dung may be added in order to control temperature,.

As most of the domestic and production work relies on women, pot making is not a full time activity, and therefore they only work for a few hours during the day. The majority of the pot making occurs during the summer but there is also some winter activity devoted to the production of particular types such as the *makla* (large plates for bread making) the

mishmar (charcoal burners).

Two different types of pottery are manufactured: undecorated cooking pottery produced for domestic use, and painted vessels for storing liquids (oil, water, milk). Production of these two types is organized in different ways: most of the undecorated cooking pottery is produced for household consumption or for reciprocal exchanges within the village. On the contrary, the production of painted pottery together with some forms of the undecorated types is market orientated. The production is taken to the market by each potter and then sold or exchanged. In the past, there were also other mechanisms of distribution: users could go directly to the producer and buy directly from him, or the males of the potter's family could travel taking the pottery to the different consumers. In the last case, most of the travelling took place during the summer when the products from the harvest were ready to be exchanged, and the conditions of the roads were apt to move from place to place.

9.2.Metalworking

At least, over the past century, iron mining does not seem to have played an important role within the region. Metalworking activities are based on forging techniques from iron scraps and, nowadays from industrial iron pieces. The main manufacturing technique is annealing, in other words, pieces are hot worked and hammered in order obtain a specific form, or shape a working edge. Tools for metalworking appear rather standardized with a variety of hammers and chisels of different sizes. Metalworkers do also tool shafting showing a great knowledge of wood properties, so in their workshops carpentry tools such as files, brushes and so on are also found. Metal specialists perform their work in workshops located not far from the households.

Although finished implements are traded at local markets, most of the work of these skilled specialists depends upon repairs and ordinations. An interesting alternative is *ezart*, a system by which the specialist takes care of the needs (in terms of tool making and repairing work) of a particular community during the harvest time.

9.3.Skin preparation and tanning

In Morocco there are very well known tanneries such as those from Fez and Marrakech. Although the techniques are rather traditional, the system is highly organized with a massive production of tanned hides. Despite these examples of large scale production, in Morocco there are other ways of leather craft. In this section we will summarise our study of skin preparation and tanning at small villages where most of the production is devoted to local markets or household consumption (Ibáñez et al 2002).

The most extended process of skin preparation and tanning within the Rif includes different lime and oak bark soakings, scraping, rubbing and stretching. The first step of the process is soaking in water which is generally done in ceramic or stone containers or inside structures excavated in the soil. In the last case, the walls are formed using flat slabs covered with cement (clay in the past) to avoid water filtrations. Sometimes the hides were also weighted down into the river. After the first soaking in water (for a couple of days), the skins are steeped in a lime solution for several days. Lime allows to de-hair the skin more easily and, at the same time, it opens the skin pores allowing for an easier penetration of the

tannins. Over this period, skins are frequently turned and stirred in order to get a better absorption.

After the lime soaking, when the skin starts to soften and in order to get rid of the hairs, it is laid over a large piece of cork or on a flat slab and scraped. Two different tools for de-hairing have been noted: a kind of scraper made in stone with a distinct edge, and blunt metal knives. At this point, some specialists soak the skin in a solution of water and cereal bran or just in several changes of clear cool water, and then it is scraped a second time both inside and outside.

The next step is the actual tanning. The main tannin is oak bark which concentrates in the inner bark (cambium layer) of the tree. Apart from bark, other sources of tannins (e.g. pomegranate rinds) are also known. Skins are covered with crushed bark, and then placed inside the ceramic containers and, again covered with more bark. The recipient is then covered with a piece of cloth and the water is slowly added into it. The container is then left under the sun as the heat accelerated the tanning process. Once the hides are tanned, they are thoroughly rinsed and dried under the sun, and then dampened again, rolled, stretched and worked with the hands to soften them. In some cases they can be also oiled to make them softer.

The kinds of objects made in leather are subject to great variation. Bark tanning and lime soaking are basically used to produce resistant hides used for making harvesting leg protectors, harvest aprons, harnessing, shoes etc.

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