

THE MANUFACTURE AND USE OF LEATHER CONSUMPTION GOODS BY THE YAMANA OF TUNEL VII, NORTHERN COAST OF BEAGLE CHANNEL (ARGENTINA): AN ETHNOGRAPHIC EVALUATION AND ITS ARCHAEOLOGICAL COMPARISON

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Resume: Dans ce travail nous avons utilisé les sources écrites des ethnographes, voyageurs et colons qui eurent en contact avec les Yamana (Terre de Feu) avant leur disparition au début du XX^e siècle, pour savoir comment ils travaillaient les peaux pour leur conservation et la fabrication de biens de consommation. Nous analysons aussi les outils lithiques récupérés dans les fouilles archéologiques de Tunel VII et à l'aide de l'analyse fonctionnelle, nous caractérisons ceux qui furent utilisés dans le travail sur la peau et cuirs, afin de déterminer le mieux possible les activités des différents processus de fabrication dans lesquels ils sont intervenus.

Abstract: In this work we use sources written by ethnographers, travellers and settlers who had contact with the Yamana (Tierra del Fuego) before they disappeared at the beginning of the 20th century, in order to see how they preserved and prepared hides for manufacture. We analyse also the lithic tools recovered from the archaeological excavations of Tunel VII. By functional analysis, we categorise those used for fur and for leather preparation aiming to get a better understanding of different production processes in which such lithic instruments were used.

INTRODUCTION

In this work we will not make an overview of fur and leather goods manufactured and used by the *Yamana*. Such has already been presented in previous works (Clemente, 1996) and all ethno historical sources were meticulously reviewed in one specific publication about the material and social life of the *Yamana* (Orquera and Piana, 1999). However, we shall discuss how fur was treated for its preservation and use according to the written sources, and compare the data from these sources with the activities registered by traces on the surfaces of lithic instruments from the Tunel VII site.

For the manufacture of different consumer goods, the *Yamana* used furs of different animals, according to their purpose (see Orquera and Piana, op. cit.). They used furs of mammals like: guanaco (*Lama guanicoe*), foxes (*Canis seu Cerdocyon magellanicus* and *Canis griseus*), otter (*Lutra felina*), pinnipedia: southern sea lion (*Otaria flavescens*) and southern fur seal (*Arthrocephalus australis*) especially, and occasionally other pinnipedia and phocids which can be found in the region, such as sea lion (*Mirounga leonina*), sea leopard (*Hydrurga leptonyx*), crabeater seal (*Lobodon corcinophagus*) and Wedell seal (*Leptonichotes wedellii*). In the late period, after the European introduction - other species - such as beaver (*Castor fiber*), rabbit (*Oryctolagus cuniculus*) or sheep (*Ovis aries*). Skins of birds, as penguin (*Spheniscus magellanicus*, *Eudyptes crestatus*, *Aptenodytes patagonico* and *Ap. forsteri*) and cormorant (*Phalacrocorax alviverter*, *Ph. Magellanicus* y *Ph. olivaceus*) also were used.

The furs were used for the manufacture of products: garments such as short cloaks, sex cover, sandals; wristbands and ankle socks as ornaments; bags, jugs to bail out water from canoes, working gloves or hand protection, quivers for arrows, slings, leather straps, hut covers, etc.

WRITTEN SOURCES ABOUT FUR AND LEATHER TREATMENT

When they wanted to use the skin of the animal (*pinnipedia*, guanaco, otter. ...) the hunter removed the fur and subcutaneous fat; women were responsible for cleaning away all fat, and muscular and conjunctive fiber adhesions, and then lay it on the ground "well stretched, between short stakes, or on a railings of short sticks" (Gusinde, 1986). The stakes used for this purpose are also mentioned by T. Bridges (1933) and G.P. Despard (1859).

Based on the data by J. Cooper (1946) and C.S. Coon (1977), M.E. Mansur (1984:289) says that after the extraction of animal skin: "the *Yamanas* eliminated the fat adhered to the interior surface. After that, the fur was stretched on the ground using sticks, and left to dry for two or three weeks. Once thoroughly dried, the fur was scraped by a sharp edged shell to make it slim, taking off one layer from the subcutaneous side of the hide. They may have added a lubricating substance made of fat and ash. Unfortunately, we can't know at which moment of the treatment it was added. Nevertheless, we suppose that it was in the next stage of leaming and not during the scraping".

M. Gusinde (1986) broadens this data assuring that they first left furs to be dried in the open air, usually supported vertically on one of the exterior "walls" of the hut, or stretched on the wooden railings on which the interior part of the fur was leaned.

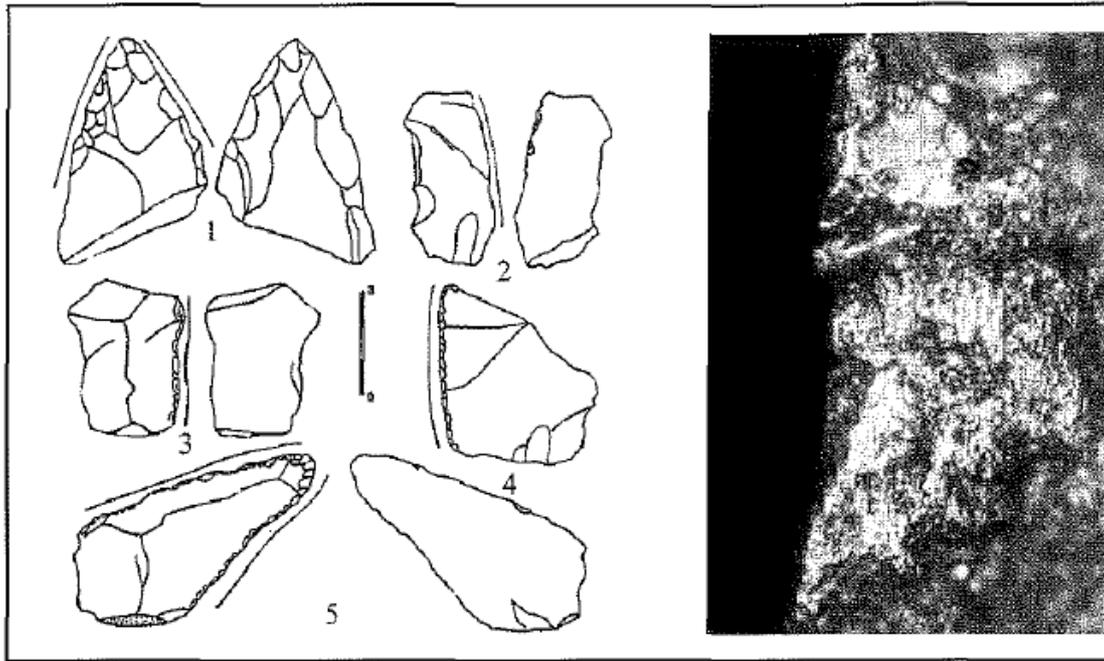


Figure 1. The Tuel VII tools used for skinning animals and/or cutting the fur (left) and microwear polish by this activity -200X- (right).

If the furs were assigned to cover the hut, they didn't require special preparation. When the fur was assigned some other purpose, a woman was responsible for cleaning it by scraping. For certain uses (cloak, sling, etc) the fur had to be depilated (Gusinde, 1986). If the surface to be treated was small, they did it by scraping, or simply pulling out the hair (as in the case of otter). If the surface was big, they usually carried out a putrefaction process (Gusinde, 1986; Hyades y Deniker, 1891). "*In some cases the entire fur was placed under the bed, from where previously a thin layer of earth was removed, and then covered again by humid earth, pasture or moss. Finally, the bed was moved back in its usual place... life in the hut resumes its usual rhythm, without concern. With the humidity from below and a little bit of warmth from above, a kind of fermentation is produced which makes the layer of hair fall off. Finally, it is easy to remove it with the palm, as soon as a sticky and viscous layer covers the leather. There is another procedure in which the women have more success. She spreads her own urine over the piece of fur placed with the hair side up, and leaves it for a while to penetrate, regardless of whether this piece remains several days in the hut or outside, and at the same time it receives soil humidity. People used to consider that human urine is more efficient when immediately after spreading it over the piece of fur it is rubbed by the palm of the hand or with sawdust, while it is still warm. After repeating the procedure several times, the fur is covered by a thin coating of moist earth, and she frequently sits on it, or lies down to sleep, transmitting to the fur as much body heat as possible. After some two weeks it will be easy to remove the hair by a simple scraping. The piece of leather becomes extremely soft, and it requires a little effort to cut large ropes or shorter leather strips*" (Gusinde, 1986 (2) I: 399).

Once dried and scraped, the leather is subjected to the process of kneading; for this the *Yamana* women use to wring and rub the leather strongly with their hands, and chew the harder parts so that the leather becomes soft with abundant saliva and chewing. "*Generally, she will chew all these pieces of leather for which she wants to achieve a particular flexibility*" (Gusinde, 1986 (2) I: 400).

The data for common use of fur conservation techniques doesn't exist, especially for these furs used for scarce clothes, because its own fat and the fat absorbed by the human body (normally, they use to impregnate themselves with fish or whale oil) was accomplishing that function (Gusinde, 1986). Nevertheless, on some occasions "one piece of leather or some particular leather object is taken and greased profoundly; even more rare was to mix fish oil with burnt clay red powder, obtaining an agglutinate mixture which was spread on the leather surface pressed by the palm of the hand. If softness and flexibility is desired for most small pieces of leather, these were impregnated by fish oil for a long time. Only frequent use will prevent leather becoming hard and stiff" (Gusinde, 1986 (2) I: 400).

THE TUEL VII STONE TOOLS THAT HAVE TAKEN PART IN FUR PROCESSING

By the macro and microanalysis of the Tuel VII lithic remains, the traces of use attributable to different productive activities related to leatherwork were identified (Clemente, 1996, 1997). On the surfaces of these tools were registered longitudinal cutting (27) and transversal scraping (14) actions. Also, the work on the fur in its fresh and dry state, as well as the use of abrasive elements for the treatment of this material was documented. The tools used for cutting served principally on fresh fur. The majority (17) were used with

natural edges (without any retouching), using as a support the flakes with sharp and straight edges (Fig. 1: 2). Nevertheless, ten shaped L elemente Conte: The Manufacture and Use of Leather Goods the Yamana of Tunel VU" tools that show a rounding accentuated by a longitudinal action of cutting were registered (Fig. 1: 1, 3, 4 and 5).

Judging by the traces of use we believe that these tools were probably used for skinning certain animals, that way the retouched side was in contact with the skin and the other, natural side, with the animal's flesh or fat (in the latter case the finely polished face penetrated more). Skinning an animal by shaped tools allowed certain advantages, and avoided damages produced by wrong moves during the work, due to better control of cutting. These tools were probably used for skinning sensitive furs skinning (such as penguins or connorant), as well as to separate the skin of the seal with a minimum of subcutaneous fat.

We don't believe that these instruments were used to skin guanacos, for several reasons: first, because its more comfortable to stretch the fur helped by blows with the fist on the inside zone, the same as Pathagonian people do with guanacos and sheep at the present (M.E. Mansur, personal communication); and second, as shows archaeological records show (only some parts of the skeleton were registered: Estevez and Vila, 1996) the guanacos were skinned and cut up at the same place of capture, as opposed to seal which were transported by canoe to the beach to be quartered there (Gusinde, 1986). Ifwe consider the written sources on the *Yamana* as undoubtedly certain, these tools would have been used by some man to remove the furs before the quartering of the animal.

Apart from the utilities, which, as we have seen could cut fur, in the Tunel VII a series of tools (14) which were used for scraping the fur is documented. According to the results of the analysis carried out, *Yamana* use to work both on fresh (9) and dry furs (5). Morphologically only four or five tools could be denominated end-scrapers, and all the rest are instruments shaped by retouch, which is common to scrapers (Laplace, 1974; Vila, 1987).

The work on fresh furs is documented in the ethno historical record as an activity of cleaning and extraction of fat, before the fur drying. In the archaeological record of Tunel VII, this activity is reflected by the blades of nine instruments. The majority of them (7) are shaped instruments - I scraper and 6 scrapers -ouch, which fonn a steep angle (more than 45') (Fig. 2: 1-6). On one of the scrapers used for this kind of activity (Fig. 2: 2), sheets of a yellowish residue left in a 2mm wide band are documented on its ventral face of the right blade. On the metalographic microscope, these sheets reminds one of the subcutaneous fat observed by our experimentation on instruments used to scrape fresh fur of sea lions (these adherences remain on the lithic surfaces even several years after use).

Two tools classified in this group, one scraper and one retouched fragment, show traces of use common to scraping furs with abrasives (Fig. 2: 5). According to these traces, we consider that the worked matter was fresh fur.

Nevertheless, this doesn't mean that besides abrasives they didn't employed also some type of lubricant (fat, fish oil), as it was documented in the ethno historical written sources, and it was used on dry fur. This process could have been for softening the fur, which was chosen for some piece of clothing manufacture (cloak or under wears for example).

On two other instruments on the non-shaped support, which are very similar one to another, on one of its vertexes, traces of using a transversal action on fur are shown (Fig. 2:3). Both instruments belong to the same excavation unit (B 225 of Square Grid II). We don't have any specific explanation of the type of work in which these instruments were used, although it is possible that it was delicate work with furs (such as producing leather strips and ropes?).

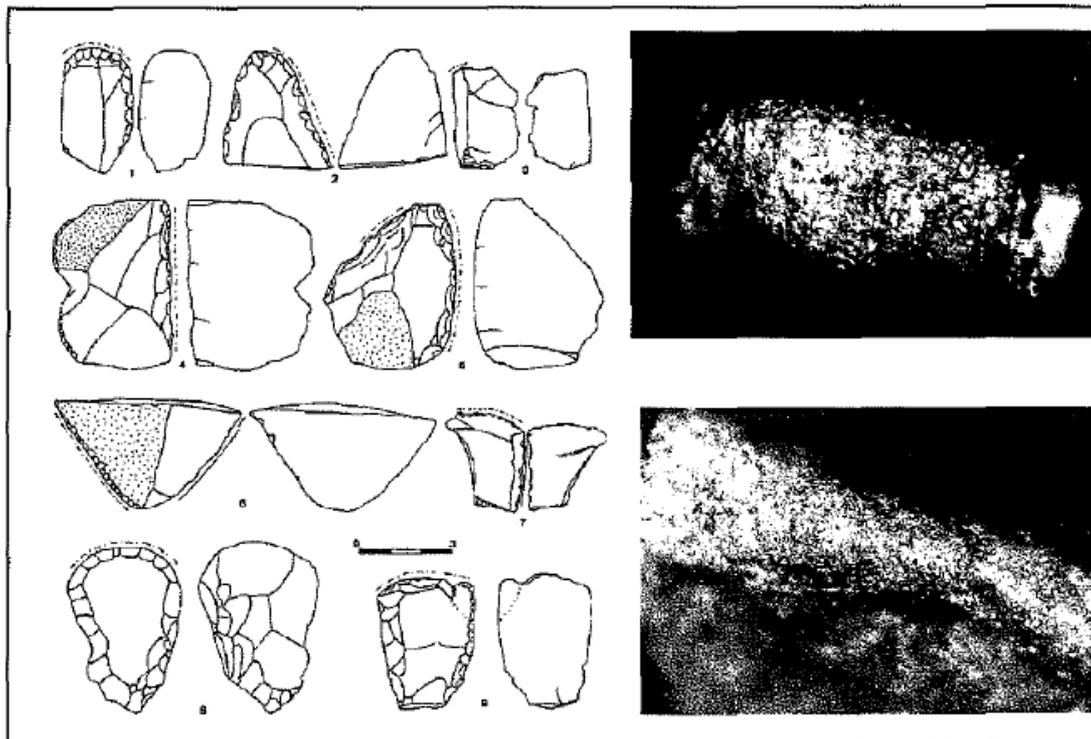


Figure 2. The Tuel VII tools used for scraping the fur/leather (left) and micropolishes by this activity -200X- (right).

ETHNO HISTORICAL SOURCES	ARCHAEOLOGICAL SOURCES
1- FUR EXTRACTION	1- FUR EXTRACTION (and/or cutting of the skin)
2- CLEANING BY SCRAPING	2- CLEANING BY SCRAPING
3 -DRYING	3- DRYING
4- DEPILATION	
5- LEATHER SLIMMING (with, or without abrasive agents)	5- LEATHER SLIMMING with, or without abrasive agents)
6- SOFTENING BY KNEADING	

Figure 3. The activities documented by ethno historical and archaeological sources.

All tools, which were applied in the fresh fur (or lubricated fur) processing, were used for a scraping action. Only one tool (Fig. 2: 6) shows two active edges - one retouched for scraping, and another without shaping, which was used for cutting the same material. Only on the scraper (Fig. 2: 1) we have observed on the dorsal edges various spots of shiny polish, which could be related to some kind of handle. On other instruments, as represented by n°4 in Fig. 2, the lateral opposite to the used one is blunted by an abrupt retouch, probably to avoid injuring the hand.

Five tools used for the processing of dry fur also show a scraping action in order to make leather thin, taking one layer of the interior side of the fur. Four of these instruments are scrapers (Fig. 2: 8-9), which probably were handled to obtain the highest efficiency. The fifth tool (Fig. 2: 7) is a fragment used without shaping: the distal edge in a scraping action and the right cutting edge for cutting the same material. According to the ethno historical sources, these activities of scraping and cutting would have been done by women.

DISCUSSION

As we have been able to confirm, the Tuel VII stone tools used in the fur processing reflects various activities. These activities are related to different phases or moments of the production process. Thus, for example, instruments used to skin an animal, others applied equally for skinning and for cutting the fur, and others used for scraping the furs have been documented. This activity is documented both, for fresh fur, to execute the first cleaning of the interior side, as well as for dry fur, to make it thin. Also, some type of abrasive in the treatment of the fur (fresh or lubricated by fat) is documented in the traces. All these activities reflected in the traces are documented in the ethno historical written sources. Nevertheless, the activity of depilation of furs wasn't registered, even knowing that it was a common practice, probably because of the specific putrefaction system used; the softening of leather by kneading, an activity executed by hands and teeth, thus leaving no traces on any instrument, wasn't registered either (Fig. n° 3).

The work on preparation of furs by transversal actions is not well represented in the lithic material of Tunel VII. It is possible to propose the hypothesis that at least some parts of this work was not carried out in the excavated zone. Another alternative or complementary hypothesis is that instruments of perishable material, which are not conserved in the archaeological record, had been used to carry out this activity. The experimentation with shell knives and functional analysis of ethnographic examples have led to the identification of functional traces, which can be related to this activity (Mansur, 1986). According to written sources (Oquera and Piana, 1999), this type of tool was widely applied to an endless number of activities. In Tunel VII some fragments of shell knives are documented, but unfortunately in very bad condition for microscopic analysis.

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