



Oil painting, *Guanche Caves* by Mark Sullivan (see p.7)

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Hide-working with dry scrape technique using stone and bone tools.

by Susanna Harris

My research into prehistoric leather in Europe has led to an interest in the techniques and tools used to process animal skins by methods such as oiling, drying and smoking using stone and bone tools (Harris 2011). There are many excellent sources outlining historical and present day methods of tanning or curing skins other than vegetable tanning (Aksaajuq Otak 2005, Kellogg 1984,88-95, Klokkernes 2007, Mason 1891, Oakes and Riewe 1996, Richards 2004). Like many archaeologists who wish to improve their understanding of the archaeological evidence, I have attempted several of these techniques myself. As those who have tried will know, preparing skins is not so straightforward and I have several examples of hard, crinkly skins with the hair falling out. To improve my understanding I took Pier Chandler's course on "Natural Hide-working" which promised to teach a dry-scrape technique using stone tools. I made these notes of the day and thought they may be of interest to other members.

Skinning and drying

The skin was from a fallow deer. Skinning and drying was carried out before the course since drying takes around two days. The skin was cut along the belly, legs and head and was prised off the carcass using the hands and the blunt side of a knife to avoid damaging the skin. After skinning the skin was pegged out on a board and any remaining fat and meat was removed. It was left outside in the shade to dry for two days. Care



Fig. 1 The dried deer skin before processing. Piers Chandler is demonstrating the scraping technique using a flint scraper.

was taken to keep it away from direct sunlight to prevent what Piers called "fat burn". We could see it was the winter coat as the long guard hairs were present; a summer coat would have lost these. (Fig.1)

Selecting and cutting

We cut the skin into roughly rectangular pieces measuring around 25x40 cm. The intention was for each participant to work a piece of skin and sew it into a small pouch. My piece included a rear leg with peg holes and part of the butt. Choosing how to cut the skin was surprisingly complex as it involved decisions about the position of the coat markings on the finished pouch, the hair direction, the skin thickness and avoiding or incorporating any flaws and peg holes. We used a fresh flint blade to cut through the skin using a sawing motion. During cutting the skin had to be lifted to allow the flint blade to fit into the gap. At this stage the skin was translucent and stiff, like thick cardboard or plastic. (Fig. 2)

Scraping

We retained the grain with hair attached but the membrane on the flesh side needed removing to allow the oils to penetrate into the fibrous corium. Working the dry skin, we used flint scrapers with a serrated edge to scrape off the membrane. These scrapers were knapped directly from a flint core by the course instructor. When the sharp flakes were scraped across the dry skin the membrane came off like sawdust and the translucent surface turned white. We were shown to scrape a small area in one direction, then cross back in the other direction until the membrane had been removed and the area appeared completely white. The flint needed retouching several times as it became blunt. My



Fig. 2 Cutting with flint knives.

piece (c.25x40cm) took 2 hours to scrape. Through this process a great deal was learned about the varied nature of the individual piece. The butt was thick and tough, in contrast to the inside leg which was thin and elastic. (Fig. 3)

Application of an oil emulsion

We applied an oil emulsion to the flesh side of the scraped skin. It was fast to apply and quickly sank into the fibrous corium. The emulsion was made from sunflower oil shaken with a little fabric conditioner. A splash of warm water was added before spreading on the skin.

Agitation

Once the emulsion had been applied the skin became cream coloured, but it was still rigid like cardboard and needed agitating to create flexibility. We scrunched, pummelled, folded and generally agitated the skin any way we could. I found this stage tough as my office-worker hands were not strong enough. The folds and creases we applied to the skin were visible on the surface, and as we worked a whole network of the lines appeared; as this happened the skin became flexible and softer. The leg and inner edges of my piece were much easier to work than the thick rump which really took some effort to crease, flex and fold. During agitation, the warm water from the emulsion evaporated, leaving only the oil in the skin. We worked around a small campfire and occasionally held the skin in the smoke as this adds gaseous formaldehyde which makes the cured skin more chemically stable. The agitation is the transformative stage of the processing, taking the hard piece of rawhide that resembles a piece of furry cardboard to a soft, flexible product. I took an hour to agi-



Fig. 3 Scraping off the membrane with a flint scraper.

tate the skin. By then my hands were really tired. (Fig. 4)

Stitching

We used bone awls to pierce holes in the skin and then bone, metal or antler needles to sew up two edges with sinew or buckskin thong. The thong had to be wet and stretched before sewing. The sinew needed to be beaten, split then twisted to produce a thread. The bone awls were easy to use and worked well. The bone needles were rather weak and easily split on the eye, especially if the awl-pierced holes were not big enough. The antler needle was much stronger, but antler is more laborious to make into needles than bone. The course organiser, Ruby Taylor, told us it took her eight hours to carve one antler needle, smooth it down and drill the eye. Even my metal needle snapped as the awl holes were not big enough. (Fig. 5)

The finished skin

In this short process, we were only able to achieve a rudimentary finish, but it was a pliable,



Fig. 4 Agitating by hand.

soft finished product with no loose hair. Importantly, it has retained these features a year afterwards. Sensing the changes in the skin through the different stages of the process makes it easier to understand written accounts of skin processing. I am sure the hard, crunchy skins of my previous attempts were down to insufficient agitating and maybe too much heat in the smoking process. This dry-scrape process is not particularly smelly during working but the finished skin does smell meaty and more strongly than industrially produced leathers. From this technique I could understand the use of sharp, flint scrapers for dry scraping to remove the membrane. In previous attempts I had removed the membrane from wet, soaked skin and found it better to use a blunt blade. In either case sharp, pointed tools should be avoided until the stitching stage when hole are intended. I learned to appreciate the relationship between awl and needle size to prevent needle breakage.

We selected and cut the skin before processing, whereas in most cases it would probably be better to do this after processing. As I have more experience cutting and stitching textiles, it was interesting to note the additional complexity of selecting and cutting a haired skin with its varied markings, nap, thickness and flaws. For the agitation stage, or stretching as it is often called, strong hands would have been a great asset, or failing that, an alternative technique. The day provided an excellent opportunity to learn the dry-scrape technique from a skilled craft worker, ask questions and ultimately appreciate and reconsider aspects of the archaeological evidence.

The “Natural Hide-Working” day with Piers Chandler was organised by **Native Hands** and



Fig. 5 Using a bone awl to pierce holes ready for stitching with a bone needle. The pots contain some of the left-over emulsion.

held in a private woodland near Berwick, Lewes Sussex.

Contact: Ruby at nativehands@ymail.com
01273 487 264 or look them up on,
<http://www.facebook.com/native.hands.uk>

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