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Editor's note

Hello! Once again the Newsletter is bursting at the seams and some contributions we'd hoped to include have had to be carried over to a future issue. This is the best possible situation for a newsletter editor to be in and I am very grateful to all who have sent in material. I am sure that all members will find something to interest them here. Given the steady flow of notes, articles and other leather-related information, deadlines are becoming more important and I'd be grateful if contributions to the next issue could reach me by Sunday 10 March, 2013.
Many thanks! Sue Winterbottom

Autumn Meeting 2012

Following a disappointing response (or lack of it) from Eastern Counties Leather plc at Sawston, the date/venue of our October meeting have yet to be finalised. As soon as details are available they will be circulated to members via email and posted in the ‘Meetings’ section of the ALG website. If I receive firm details before this newsletter is circulated I will add them as a ‘Stop Press’ to the final page!

Committee, 2012-13

At the Annual General Meeting in Northampton the following changes were made to membership of the committee: Jackie Kelly was elected as the new Chair, Lucy Skinner and Dominique Mathieu joined the committee as Ordinary Members and Quita Mould rejoined as a Co-opted Member. Full contact details for all the committee can be found on the final page of this Newsletter.

Some recent publications

Pereira, F. (2012) “Gilt leather/guadameci in Coimbra – comments on documents of the 12th and 16th centuries”. Boletim do Arquivo da Universidade de Coimbra, XXV, 169-180. This article can be read online or downloaded as a pdf file:


This volume can be browsed online or purchased complete as an e-book from:
http://www.sidestone.com/

Abstract:

The Coptic monastery and cemetery Deir el-Bachit stands on the hilltop of Dra' Abu el-Naga, the well-known necropolis in Qurna (West Bank, Luxor). It is the largest Coptic monastery complex preserved in Western Thebes and the first monastery that has been systematically investigated. The excavation of the monastery was started as a DFG-Projekt des Ägyptologischen Instituts der Ludwig-Maximilians-Universität München in close collaboration with the Deutsches Archäologisches Institut Abteilung Kairo.

Until the start of the investigations in 2001 with a survey, little research was done. After three seasons of preliminary research, full archaeological research was started in 2004. The leatherwork was studied in 2007, the present volume of which presents the results. The book consists of two parts: the analysis and a detailed catalogue, including colour images of all finds and, where necessary, line drawings. The finds are analysed within the framework of the excavation as well as within the frameworks of the Ancient Egyptian Leatherwork Project and the Ancient Egyptian Footwear Project (www.leatherandshoes.nl).

Forthcoming publication

A study by André Yeldmeijer of the Ottoman period footwear from Qasr Ibrim, Southern Egypt, is due to be published later this year. The book will be available in print or electronic form. Further details are available here:

http://www.sidestone.com/books?q=qasr
Jews, Moors and Christians in the leather trade: the Ordinances of Tanners and Shoemakers in Lisbon, 1489

by Franklin Pereira, Portugal (frankleather@yahoo.com)

Note: a version of this article has also recently been submitted for publication to Al-Masq, a journal dedicated to all aspects of Islamic Mediterranean Culture.

In 1489, the guild of the shoemakers, tanners and leather bottle makers of Lisbon had its ordinances confirmed by the reigning king, João (John) II. Before looking at this important document, some introduction is needed. The shoemakers were, by then, divided into several smaller guilds according to the type of shoes they were making. Thus the ordinances refer to the borzequereiras (producing soft shoes and boots), the coqueiras (producing wooden clogs, with a strap or front part of hard leather), the chapineiras (making high, cork sole shoes - the chopes) and the shoemakers (making other types). Alongside these workers, tanners and curriers, were also the leather bottle makers. Some bottles were made from a full goatskin, removed from the animal without opening the belly. Legs were removed and the genitalia stitched, while the neck received a wooden tube with a closing system (like a kind of tap), creating a container for around 75 litres. After bag tanning, the container was lined with hot, liquid pitch which covered the hair (already cut short with a scissors). The capacity of these containers gave rise to the measure of liquid called an ofrado (from ofrar, the Iberian name for the full goatskin bottle.) The artisans also made small leather bottles, holding from one to three litres, used for wine, must or honey. Both bottles were light and pliable; the small ones, pear-shaped, were called brradis (from the Arabic brrad), giving rise to the Portuguese word for drunkenness: brracheira.

These earliest ordinances, which by 1572 became incorporated into the famous “Book of the Trades of the very Noble and always Loyal City of Lisbon”, start by saying that the masters of the several guilds met “at the Hospital of Saint Vincent [their patron saint], in September, to make our assembly as is usual”. This shows the importance of the verbal tradition, up to that point, in the organization of the trade.

One point which they agreed was that no Christian master or anyone from his house was allowed to work with black sheepskin, or any other coloured skin, nor was allowed to sell at his shop items made from such skins. They could only use white skin in such pieces, although they could use coloured sheepskin in shoes for children up 10 years old. Black sheepskins could only be worked upon by Muslim and Jewish shoemakers. Despite Christianity being dominant, the other two religions were allowed to maintain their traditions and to work at crafts, although this meant keeping to their own neighbourhoods with gates closing at night. Thus, you could determine someone’s religion by the colour of their shoes; the ordinances decree that black footwear can only be used by Jews and Moors, as well as being made by artisans of these religions.

The siege and final conquest of Lisbon happened in 1147, with the help of British crusaders on their way to the Holy Land. In 1179 the first Portuguese king, Afonso Henriques, gave Lisbon its charter, which refers to shoemakers: anyone owning a Moor as a shoemaker and working on his property didn’t have to pay tax to the king (CAETANO, 1981: 100; DOCUMENTOS, 1947: 6). It seems obvious that only other shoemakers would be interested in having Moor shoemakers at their house; the verb “own” clearly shows that such Moor artisans were slaves of the Christian ones. We may take it that between 1147 and 1489 there were always shoemakers of “the three religions of the Book” working in Lisbon, as in other cities and villages in the lands south of the Mondego river which were formerly part of al-Andalus.

On the subject of manufacture, the 1489 document states:

“No master nor anyone else is allowed to produce at his workshop, or any other place, any pieces except the ones he can make by his own hands, so that he knows the mistakes that might occur in such pieces, whenever they are given to his servants, or to others at his house; therefore people will be better served, and not deceived, at their shopping; also, he has to know any mistakes that might happen in such pieces whenever he is asked about it by any judge
elected by the guild. Whenever a master is found making, or giving to someone else, any piece he hasn’t learnt or doesn’t know how it’s made – if it is seen in his workshop or proved, with a witness, that he has sold such a piece – he will be fined”.

Later on, in the “Book of the Trades” of 1572, we come to know that at the master’s examination a diploma would be given, stating which pieces the new master allowed to make and the types of leather he could use. The next paragraph, being specific to shoemakers, already indicates what will be later written down:

“For the people to be better served in all shopping, in all the cities and villages, having regard to all perfection in manufacture, no journeyman nor apprentice should own any shoemaking workshop, without showing what he knows how to make to the inspectors and judge elected by the guild. They will allow the making of the pieces he knows how to make, and he won’t be allowed to make pieces he doesn’t know, being fined if he disobeys”.

Afterwards come the regulations specific to tanners:

“They have also agreed that henceforward no tanner – be he Christian, Jew or Moor, or anyone else – is allowed to buy skins from cattle (large or small) unless the skin is salt tanned in a pile, as it has always been. When such hides are bought, a part of the pile might be given to any tanner who asks for such material, or to any other currier living in the city; in the sale, only half of the tax will be paid, according to the king’s rules. The same will happen regarding sumac and bark, as well as other things for the guild”.

Again, there were tanners belonging to Islam and Judaism. From this statement of the ordinances it sounds as if the trade tried to limit individual purchasing, making sharing between tanners obligatory. We learn that any sale of the main tanning ingredients, bark and sumac, also had to be shared.

An earlier City Council document, dated to 1465, states that the quality of the tanning bath for goatskin/cordovan and calf had to be maintained in order to avoid fake leathers, later sold as if they were true ones (see LIVRO, 1974: 125, 126). Jewish and Christian tanners are mentioned in another City Council document of 1484, which also concerned the quality of sheepskin and cordovan (see LIVRO, 1974: 160); cordovan was high quality goatskin, owing its name to the fame of Cordoba’s tanners. From other Lisbon City Council documents, dated to 1470, we learn that tanning had to be done outside the city walls (ibid: 142). Later, in 1577, another document states that there were specific places for the selling of leathers and a timetable - until 6pm in summer and 4pm in winter - for the
sales. Prices were to be written down and tanners could sell their own products (ibid: 339-341).

The next paragraph shows the connections between the Lisbon tanners and those of Évora, some 150 km east:

"Sometimes Moors from Évora, or others, may come to buy such leathers, offering to pay the tax in full to their owners; if so, our agreement [referred to above, about paying only half of the tax] will have no effect; thus, we ask that those Moors and others persons wanting to buy leathers without agreement from our judges should be fined".

Earlier shoemakers' and tanners' documents of Évora, dated from 1380, show the presence of Moors working in both guilds; it seems clear that working methods and old recipes kept on being used. The famous goatskin, called "cordovan" in both Iberian countries that emerged after the Reconquest, was also produced by Évora tanners (see PEREIRA, 1891, I: 143, 145); in both cities tanning was also part of the shoemakers' work. There are still references to Jews as tanners and shoemakers in Évora in the early 15th century (ibid: 117-119). The making of "cordovan" in Lisbon and Évora, and in other Iberian cities, shows the strength of the original brand - so famous that other tanners of goatskins continued to trade on the name.

To return to the 1489 document:

"No master should take an apprentice due to money, but only according to time length; if he's a youngster, from 10 up to 12 years old, he must work for 4 years, with the master providing his clothing, according to the spoken agreement. If older, he must work for 3 years, receiving clothing according to the agreement".

It doesn't state that the lad would live at the masters', but we learn that the young boy really started his apprenticeship quite early, following a verbal agreement with his parents. It sounds as though he will work without salary, but getting a profession in exchange. He will have to pass exams to be recognized as a master craftsman, the only way to open a workshop of his own (we know this from the 1572 ordinances). It further states that:

"No master or other person at his house should give stitching to the apprentice, but only to the daily worker, as it has always been. This work ought not to be given for the whole month, but daily, to be paid by the week."

This does not seem to be a reference to the role of the 'journeyman' - for which the Portuguese word oficial would be used, but to a worker outside the guild system. The stipulation "as it has always been" shows the traditional nature of this arrangement.

A final excerpt refers to official duties within the trades:

"Anyone called forth by the judges and not presenting himself without good reason, is to be fined on each occasion. If he is called for any procession, to carry 'castles' [the coat-of-arms or insignia of the guild], he will be fined as well".

Official duties were obligatory, as well as participation in processions. On those festive days the insignia of the guild - coats-of-arms, representations of the patron-saint and pictures of specific tools, either painted or embroidered on banners - were carried along the specially cleaned streets. Windows and balconies were decorated with tapestries and even gilt leather wall hangings - this last reference appears in the report on the visit of king Sebastião to the southern city of Faro, in 1573 (see LOUREIRO, 1984: 114). Finally, these ordinances were read at the City Council, in the presence of the other representatives of the guilds; they were considered worth approving 'in the service of the Lord and collective good', "being holy and good"; any craftsman not following such rules would be fined.
In 1532, king João III re-confirms the ordinances, adding that the payment to the daily worker should be according to current levels and "removing the words that speak about the Jews and Moors because they don’t exist any longer" (see LIVRO, 1974: 324-330). Both religions were now forbidden by the church and their adherents had to leave the country or turn to Christianity, becoming “new Christians”. In spite of such changes, the Muslim heritage endured. Gilt leather wall hangings and floor cushions continued to follow Moorish/mudejar patterns, which also appeared on contemporary textiles. These were ornamented with braids and decorative elements included flower petals within ogave arches, a four-petalled flower on a square, artichokes, pinecones and star-shaped polygons. Saddles and leather shields continued to be made for the “gineta” riding style, shoes were stitched “the Moorish way” and chopines made from gold foil covered goatskins.

Such fashions did not vanish until a century later, due to the dominance of Renaissance influences; among the new fashions was the rise of the chair. Here, older leather carvings in upholstered cowhide also recreated antique patterns from the rich Caliphate heritage. Done mainly with a sharp “V” gouge, those patterns in cowhide were accepted by the elite, not dismissed as belonging to the “infidel”. These chairs, of late 16th/early 17th century, show the high esteem given to antique designs and to the earlier objects used in daily life – trunks, gilt leather, quivers and bow bags, as well as silks, ivory, pottery, leather shields, jewellery – that served as inspiration. These objects were ambassadors for Islamic-inspired design, exchanged on trade routes between Christian kingdoms, al-Andalus and the Middle East.

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Red Ochre for Skin Processing

From time to time, suggestions have been made that red ochre was employed during the middle stone age (about 100,000 years ago) to process and preserve animal hides. This mineral consists of oxides or hydrated oxides of iron and is insoluble in water. I have dismissed this hypothesis and proposed that if ochre was applied to hides it was used as a red pigment and not as a ‘tanning’ agent. In a recent paper, Rikin, from the University of Witwatersrand, has shown that this material does in fact have a preservative effect.

In a next series of experiments, samples of kudu hide have been treated with ochres taken from five geological sources and the results compared with those obtained by treating the skins with known tanning agents. Control samples were prepared without the application of any agent or using materials not thought to have preservative effects. Samples were also prepared using combinations of these materials. The skin pieces were examined regularly over a period of ninety days for flexibility and evidence of biological deterioration.

As would be expected, the worst result was found with the untreated control sample and the best were those treated with known tanning agents. Equivalent good results were, however, exhibited by two of the red ochres and by the haematite. Microphotographs show that the skins prepared using these materials dry out with the fibres well separated, a characteristic required for a flexible product.
An interesting point made by the author is that the appearance of the human body louse seems to coincide with the development of skin clothing. The human body is an inhospitable place for these parasites to breed but the space between the body and skin clothing provides a suitable environment.

As ever, breakthrough papers leave questions to be answered by further research. The mechanism of the preservative action is not shown, although it is pointed out that ochre has an inhibiting action on the production of bacterial collagenases. Is this why, under some circumstances, the presence of iron artefacts in archaeological contexts has a mineralising preservative action on adjacent organic materials? Nor were experiments carried out to determine whether the preservative effect was resistant to repeated wetting and drying, which would indicate a true tanning action.

For any member interested in the early evolution of skin processing, this paper is essential reading.

Roy Thomson


**Worth a closer look?**

Anyone looking for a research topic in the area of prehistoric leather working and usage could do worse than have a look at the objects produced by the Guanches, who occupied the Canary Islands before they were colonised by Spain from 1402 onwards. On holiday this year I was amazed by some of the items in the collection of the Museo Canario in Las Palmas. Most striking is the large number of mummies encased in up to twelve layers of goatskin, sometimes with baskerry inside. These are not merely random leather wrappings but appear to be carefully stitched, even 'tailored' burial shrouds with elaborate seams and ties. The *tamarco*, some kind of leather cloak, figures prominently in accounts of the traditions of this people as described by the conquering Spanish. Fragments of garments are also displayed in the museum; they too show surprisingly fine stitching and complex construction and it may be that leather clothing for the living and the dead were related in ways that are not currently appreciated.

Detail of a stitched leather burial shroud

The air-dried and leather-clad corpses were placed in mountain caves, often in groups, although good information about the antiquity of this practice or the absolute date of any of the finds is hard to come by. There is much speculation, indeed, about the origins of the Guanches themselves and when they came to settle the islands. One theory, based on what can be deduced about their language from a few words recorded by the Spanish and some recently discovered rock inscriptions, suggests they may have been Berber tribesmen brought there as slaves by Carthaginian settlers. Another persisting tradition has them as a fair haired, blue-eyed people. Attempts have been made to link their artwork – which includes geometric patterns and symbols – to North African cultures but parallels for their leather-working techniques, so

Museum collections contain various skin bags
far as I know, have not yet been similarly explored. Museums on several of the islands contain examples of Guanche leatherwork: they appear to have used a kind of goatskin rucksack and gloves have also been found. Again, little effort seems to have been made so far to date these objects scientifically.

This is how the website of the Las Palmas museum (http://www.elmuseocanario.com/) describes its collection of leather objects:

“The exhibits include different products made from animal skin (possibly garments, vessels, etc). As was the case with vegetable fibres, animal skins were crafted in different ways, some were tanned rather crudely whereas others showed careful elaboration, some have been found with the hair or fur still on, others have had the hair removed. This variety reflected not only these products' intended function, but also the social status of the individuals for whom they were made.

In general, the leather pieces reveal a noticeable degree of sophistication, as the attention to detail evident in the stitching -made with strips of leather or tendons- shows, or the geometrical decorations made with incisions or painted with raddle.

The fact that the crafting of animal skins and vegetable fibres reveals a certain standardization, and thus gestural reiteration -perceivable, for instance, in the stitching and "patching" or in the different kinds of latticework-, together with other archeological evidence suggests that these works were performed by specific segments of the population.”

The current occupants of the Canary Islands are proud of this indigenous heritage and one is never far from a statue of a heroic (and enormous) Guanche chieftain. The pride is bittersweet, though, as almost certainly the former occupants were systematically massacred and their culture, in so far as it could be, destroyed. But the islands are magnificent and mysterious places and it seems fitting that around the story of their settlement there should hang a great mystery too.

Sue Winterbottom

Geometric art of the Guanches: www.elmuseocanario.com

Leather glove and its reconstruction drawing
Leatherwork from Dra Abu el-Naga: Some First Observations
by André J. Veldmeijer

Dra Abu el-Naga in Luxor is a large burial ground from the Second Intermediate Period (1650-1549 BC) through to Saite times (664-525 BC) which includes several royal tombs. It is a good example of a site that produced little leatherwork in terms of quantity although the corpus is of great scientific value. For the first time in the history of the Ancient Egyptian Footwear and Leatherwork Projects, the context of a site can be simultaneously studied with the finds themselves. Several finds will be discussed briefly to demonstrate this and to show that the site's finds, from various periods, are important for several reasons. Note that close analysis of the data has yet to begin and, therefore, this contribution is preliminary in character.

Stubb ed-Toe Shoe: FN 0399 (Fig. 1)

Leather shoes in Pharaonic times are not as numerous as sandals but are by no means rare. We distinguish various types and, remarkably, most of these are roughly datable, although the dating is in dire need of fine tuning. A type of shoe for which even an approximate date was thus far not possible, despite the presence of various examples in collections, is the so-called Stubbed-Toe Ankle Shoe. These are fairly simple shoes consisting of a sole to which a single-piece upper is attached by means of leather thong running stitches around the circumference of the sole. The upper is closed with a back seam, while small holes at the front instep opening suggest that here it was closed with a lace-like connection. Parallels are known in various collections (including the Egyptian Museum, Cairo and the British Museum, London) although none is well dated or provenanced. On technological grounds, these shoes are tentatively dated to the New Kingdom. The context of FN 0399, however, confirms such a date as it was excavated from early-middle 18th Dynasty shaft tombs.

Fig.1 Stubb ed-Toe Ankle Shoe (FN 0399). These shoes have a one-part upper that is secured along the edge with leather thong. Scale bar is 50 mm.

Fig.2 Back half of Ottoman shoe (FN 0746). Clearly visible are the pointed extension of the backpart and the semi-circular extension of the vamp. Scale bar is 50 mm.
Fig. 3 Fragment of a bag (FN 1064) that probably was used to transport or store a harp (inset). Note the widening at either end in the same way as the box of an ancient Egyptian harp widened. Scale bar is 10cm.

**Ottoman Shoe: FN 0746 (Fig. 2)**

One might expect pre-modern finds, such as from the Ottoman period, to be abundant in number and to figure largely in research. In the case of leatherwork and footwear, as we know, this is not true for Egypt. The work on the large corpus of Ottoman footwear from Qasr Ibrim is nearing completion but the lack of comparative material greatly limits its interpretation in a wider context (i.e. beyond Qasr Ibrim). Only one piece of Ottoman shoe from Dra Abu el-Naga (Fig. 2) provides for such a comparison. Despite strong similarities, which identify beyond doubt the shoe’s origin, there are nonetheless interesting differences which are currently being investigated. The Ottoman presence is attested by a variety of other objects, notably pipe bowls. During the Ottoman rule the necropolis was thoroughly looted.

**Bag: FN 1064 (Fig. 3)**

A unique find is a bag fragment that is associated with the famous, near-complete and nicely decorated harp. Water bags are known, especially from two-dimensional art although archaeological finds from the Pharaonic period are extremely rare. Other types of leather bag have been completely lacking so far: FN 1064 is the only one to date. Pending detailed analysis, several features can be noted. The shape, slightly increasing in width towards both ends, suggests it was a bag for transportation of the harp. A more or less round impression at the bottom suggests, in size and shape, that it was due to the little knob at the bottom of the harp. The pieces of leather are secured simply by sewing with a narrow leather thong, using a running stitch, close to the edges. Since the seams are facing inside, the bag was turned inside out after it was made.

**Loincloth: FN 4317 (Fig. 4)**

Loincloths like FN 4317 are by no means rare: these pieces of garment are well known from two-dimensional art as well as from the archaeological record (both in Egypt and Nubia), with the ones from the tomb of Maiterpi being the most famous examples. Their origin is Nubian: it
has been suggested that expertise in leatherwork might also have been a reason why the Nubian people came and stayed in Egypt. Note that in the Theban area there was a strong presence of Nubian groups. Fairly quickly, the item of clothing was adapted and became especially popular with sailors and soldiers. This, however, has thus far only been suggested by imagery but FN 4317 came from the forecourt of a tomb of the “(Sailor-) Captain of the High-Priest of Amun” and is, therefore, the first archaeological evidence. There are clear differences, both in fine detail and openwork pattern, between this find and a second loincloth (FN 0207) coming from a different area.

Finally

It is beyond the scope of this contribution to discuss other important objects, among which are a sandal with comparable examples dated to the late Middle Kingdom, a recently discovered large, green-coloured fragment with decoration, the skin covering of the soundbox of the harp, fragments of furniture with red leather cladding, another piece of furniture made from narrow strips of woven leather and offcuts. As is clear from this short essay, the importance of the corpus is beyond doubt. It will help fine tune the dating of objects and will increase our knowledge of leatherwork and footwear considerably.

I would like to thank Dr Daniel Polz for inviting me to study the material, allowing me to publish this short account in the ALG Newsletter and providing me with contextual information for most of the objects mentioned here.

Photography by Erno Endenburg.

2 day practical course on Iberian gilt leather working

Franklin Pereira (Oporto) and Rafael Vargo (Cordoba) have put together a proposal for a two-day workshop on traditional methods of gilding, painting, tooling and stamping leather practised in Spain and Portugal since the 13th century. They are offering it to colleges and other institutions in the UK or elsewhere who may be interested and have produced a leaflet detailing the contents of the course. This can be downloaded, via the ALG website from the following page:

http://www.archleathgrp.org.uk/gilt_leather_workshop.pdf
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 (Aksajaq Otsak 2005, Kellogg 1984, 88-95, Klokkerne 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 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. 1 The dried deer skin before processing. Piers Chandler is demonstrating the scraping technique using a flint scraper.

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 agitation to create flexibility. We crunched, 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 agitate 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,
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 held in a private woodland near Berwick, Lewes, Sussex.

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

References


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.
Annual Subscription

ALG Membership runs for a year, commencing 1st January. The subscription for 2013 will remain at £10 and a membership form for renewing the subscription when it is due is included as an appendix to this Newsletter. Alternatively the form can be printed out from the ALG website: www.archleathgrp.org.uk - click on the 'Joining the ALG' menu item.

Archaeological Leather Group
Committee Members, 2012-13

Chair Jackie Kelly, Department of Archaeological Collections and Archive, Museum of London, London Wall, London EC2Y 5HN, Tel 020 7814 5734 email: jkelly@museumoflondon.org.uk

Secretary Susanna Harris, 34 Mountview Court, Green Lanes, London, N8 0SG Tel 07905 381549, email: susannaharris@hotmail.com

Treasurer Roy Thomson, The Long House, Behind 43 West Street, Oundle, Peterborough PE8 4EJ Tel 01832 272048, email: roythomson@greenbee.net

Editor Sue Winterbottom, 48 Lyndhurst Street, Stoke-on-Trent, ST6 4BP Tel 01782 833213, email: sue@suewinterbottom.freeserve.co.uk

Meetings Co-ordinator Diana Friendship-Taylor, 'Toad-Hall', 86 Main Road, Hackleton, Northants NN7 2AD Tel 01604 870312, email: liz@friendship-taylor.freeserve.co.uk

Ordinary Member Dominique Mathieu, Association La Couenne, Presbytère 31800 ASPRET-SARRAT, FRANCE Tel (outside France) (00-33) 9 53 98 28 28 (within France) 09 53 98 28 28 email: lacouenne@free.fr

Ordinary Member Lucy Skinner, 464 Norwood Avenue, Buflalo, NY 14222-1504, USA Tel (UK) 01435 873311 email: lucy.skinner@gmail.com

Co-opted Member Quita Mould, Eastmoor Manor, Eastmoor, King's Lynn PE33 9PZ, Tel 01366 328910, email: quita@onetel.com