

# An ethnographic and historical overview of hide processing in southern Africa

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An overview is provided of the processing of hides in southern Africa as reflected in ethnographies and other written sources. Although some of these techniques may still be in use today, the wave of modernization in recent times likely led to the loss or disuse of many processes, knowledge and utensils. The processing of hides consists mainly of three steps: dehairing, scraping and tanning. A variety of methods have been used to process hides, which was in part determined by the availability of particular plants and trees. Both men and women were often involved in the processing of hides. While hides were usually processed by their owner, some groups such as the Zulu employed specialists, and others processed skins as part of a communal activity.

Keywords: leather, hides, skins, ethnography, southern Africa.

## INTRODUCTION

For much of our species' existence, hides were the only material available for clothing and other items such as blankets, containers and carrying bags. However, very little remains known about pre-industrial tanning practices in southern Africa (e.g., Taylor, 1989). In addition, since some utensils such as bones and adzes (Fig. 1), which may have been used in hide processing, are found in archaeological deposits (e.g., Avery, 1985; Voigt, 1983), it is imperative to investigate animal skin processing in greater detail. Although a few authors undertook in-depth studies of leather processing in southern Africa (e.g., Davison, 1984; Hooper *et al.*, 1989; Shaw and Böhme, 1974; Shaw and Van Warmelo, 1974), there remains a need for a wider consideration of the different techniques, utensils and gender roles associated with hide processing in southern Africa. Here I aim to contribute to a greater understanding of these issues; the overview presented below is by no means intended to be exhaustive. For convenience, I present separate overviews for Khoisan, Bantu speakers and Europeans.

It is important to preface the overview with a clarification of terminology. According to Spier (1970: 114–115), 'tanning' is a generic term for the preservation of hides and their conversion to leather. The term refers to any one of several techniques. The complete tanning process involves three major procedures, namely dehairing, scraping and tanning. However, intermediate steps can be added, or the three steps can be combined. Tanning of hides can be done in essentially three different ways. First, 'oil tannage', which refers to the process of saturating hides with oil. Animal brains are often used as these

have a high fat content. Second, 'mineral tannage', in which salt and alum are used. Third, 'vegetable tanning', which involves the use of tannins from trees and other plants. The latter is actually the only true tanning method, since it involves the use of tannins. Species such as oak (bark), acacia (pods), chestnut (wood) and grapevine (juice) are sources of tannins (Spier, 1970: 116–119).

## HIDE PROCESSING – AN ETHNOGRAPHIC OVERVIEW

### The Khoisan and their descendants

A variety of methods and gender roles in the processing of hides have been noted among the Khoisan and their descendants in southern Africa. At Genadedal in the southeastern Cape, men were responsible for processing hides (Schapera, 1930: 10). By contrast, in Nama society women did hide processing, although men and children assisted subsequently (Schapera, 1930: 10–11). !Kung men prepared hides, and these were then maintained by the women who processed them with the red bark of kiat (*Pterocarpus angolensis*), a task of about two hours every two months (Lee, 1979: 276). Among the San of the central Kalahari men also prepared hides (Bleek, 1928: 9). The initial preparation of a kaross by the !Kung of Botswana took at least 15 hours, and the process involved stretching, drying and scraping the hide and its subsequent trimming, tanning and softening (Lee, 1979: 276).

The tanning of hides by Nama women was done by pegging the fresh skin to the ground to dry with the hairy side upwards. The hard, unyielding hide was then softened using the juice of succulent

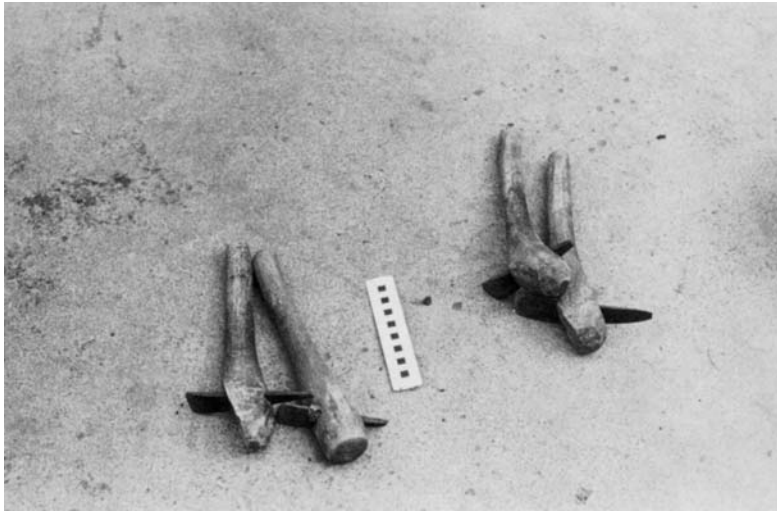


Fig. 1

Adzes used by the Pedi (from Shaw and Böhme, 1974: fig. 6). Used with permission, courtesy of the Iziko South African Museum, Cape Town.

plants poured onto the inner fleshy side. The liquid was then poured off, and the skin rolled up to prevent it from drying prematurely. After the skins had dried to some extent, the woman knelt on the roll and spread it out. The fleshy side was covered with sandstone powder and rubbed with a stone. The skin was again allowed to dry, and was then kneaded and wrung out and the outside smeared with fat. It was then tanned with the pounded inner bark of acacias (*Acacia* sp.), rolled up using pads of fibre and steeped in red lye made from acacia bark. It was allowed to dry slightly, and then spread out and lightly covered with sand. Finally, two men gripped the hide at the tail and head ends while the women and children took hold of the sides, and together they stretched and pulled it until smooth. Afterwards it was dried in the sun, and was now permanently watertight, soft and red on the inside (Schapera, 1930: 11).

Some Cape Khoekhoen used a different technique. They rubbed fat into the fleshy side of the hide, then beat the skin hard with a stick until it was tough and smooth. Alternatively, they rubbed the hides with cow dung and fat, and then left them to dry in the sun (Burchell, 1967: 214; Latrobe, 1969: 272; Schapera, 1930: 10). Another method observed among the Khoekhoen involved forming a 'basin' by tying a hide with thongs onto a frame supported by four stakes. The hide was filled with a liquid containing the bark of sweet thorn (*Acacia karroo*), which imparts a reddish colour (Burchell, 1967: 243). In the central Kalahari, San men processed skins by scraping and rubbing them; the skins were then folded and danced on, after which

they were buried in sand for a few hours. Subsequently, the men would rub in a mixture of fat and red clay (Bleek, 1928: 9).

When the Korana were to make a sheepskin kaross, they stretched the fresh skin with the fleshy side uppermost and pegged it to the ground. When the skin had dried, it was moistened with fresh milk or meat juice and then, working the hide with both hands and feet or with rough stones, it was trampled, kneaded and rubbed. The fleshy side of the skin was then smeared with fat and worked again until no trace of greasiness remained. The moistened roots of elandsbean (*Elephantorrhiza elephantina*) or the bark of sweet thorn were then spread over the inner surface. The skin was rolled up and left for a day or two. The skin was then again spread open with tanning bark on it to complete the process (Engelbrecht, 1936: 109–111).

When the Nama wanted to remove the hair, the fresh hide would be wrapped in a tanned skin and exposed to the sun by day, and placed near the fire in the house at night. After three or four days the skin developed an unpleasant smell, and the loosened hair could be removed. The hide was then rolled up again and worked in an up-and-down motion using the feet until it was soft. The fleshy side was then smeared with fat. To loosen the hair, the Cape Khoekhoen sprinkled fresh skins with ash and water, rolled them up, and exposed them for a day or two to the heat of the sun. After depilation, the skins were rendered supple by being rubbed with fat (Schapera, 1930: 10–11). The Gonaqua used rib bones of sheep to form a type of sharp chisel to detach the hair (Le Vaillant, quoted by Clark, 1959:



**Fig. 2**

A group of Pedi men processing a hide (from Shaw and Böhme, 1974: fig. 11). Used with permission, courtesy of the Iziko South African Museum, Cape Town.

237–238). Silberbauer (1965: 49) found that the G'wi San of the Kalahari in Botswana applied marrow extracted from larger bones to soften skins.

### Bantu speakers

Among many Bantu speakers of southern Africa, men were mainly responsible for the initial preparation of skins (e.g., Bruwer, 1956: 116; Bryant, 1967: 402–404; Campbell, 1815: 253–254; Kropf, quoted by Gitywa, 1971: 111–112; Lambrecht and Lambrecht: 34–35, 1977; Mönnig, 1967: 146; Van Schalkwyk, 1985: 36–38). However, women also contributed to the process. For example, among the Xhosa, hides were passed on to women who treated them after the men had completed the initial scraping (Kropf, quoted by Gitywa, 1971: 111–112). Krige (1957: 211) also noted that hide preparation was mainly the duty of Zulu men, though women assisted with the smearing of garments to render them supple. According to Schapera and Goodwin (1953: 147), skins produced by Bantu speakers in South Africa were often not tanned, although the application of ochres and fats gave the impression of a heavy-loaded leather (see also Theal, 1922: 288–289).

Some visitors to the Tswana town of 'Lattakoo' (Dithakong) near the modern town of Kuruman in South Africa and environs noted hide processing activities in the 1800s. At Dithakong, Campbell (1815: 253–254) observed one night after dinner how twelve men, on their knees, assembled around a skin that was to be processed. Every second person, therefore six in the circle, would at one

instant drive the hide from them, and in raising their bodies, pull it towards them, which would again stretch it out flat. The other six would then repeat these motions. This exercise continued for a long time and was accompanied by singing, screams and howling. Campbell (1815: 250 [printed as p. 450]) witnessed how some of the men stretched skins on the ground using pegs whereas others rubbed the inside of the skins with rough bones. Some skins were covered with cow dung in order to soften them. Similarly, Andrew Smith noted in 1835 that animal teeth were used in softening and scraping skins (Kirby, 1939: 335). Burchell (1824: 590–591) noted that animal brains were often used to smear skins.

The Molepo of present-day Limpopo Province in South Africa pegged skins to the ground to dry. The hides were then soaked in lukewarm water, and all remaining flesh and fat scraped off. Following this, hides were dried by wringing them, and cured by hand to render them soft. A paste made from crushed sourfig (*Carpobrotus edulis*) nuts and cattle brain was smeared on the hide. It was left for five to seven days and then cured by hand. If the hair was to be removed, the hide was rolled up and buried for three to four days in the cattle kraal, or soaked in water. The hair was then easily scraped off. Smaller hides, such as those of dassies or mongooses, were prepared in the same manner, and cured by hand. In the case of larger hides (Fig. 2), such as those of cattle, men sometimes organized a working party (Van Schalkwyk, 1985: 36–38).

In Lesotho skins were dried, rubbed over with

powdered sandstone until thoroughly clean and pliable, then rubbed by hand, always keeping the hands well greased. This rubbing was continued until the whole skin was thoroughly pliable and soft (Martin, 1903: 28). A group action similar to that observed at Dithakong was also noted among the Basotho of Lesotho (Casalis, 1965: 134), but was usually reserved for large skins such as those of cattle. It seems that only men partook in the event, and the entire process was accompanied by grunts and sounds, and imitations of all the animals in creation. Men processed hides in the village's court, which was generally out of bounds to women (Mabille, 1906: 239, 241).

The Xhosa prepared the hides of cows and oxen by first rubbing off all the flesh and blood from the inside with stone, after which they rubbed the hairy side with sourfig (*Carpobrotus edulis*) juice, then with cow dung, after which it felt smooth and soft (Campbell, 1815: 521). A different method was noted among the Xhosa by L. Alberti. A skin was dried by pegging it to the ground. It was then attached to two upright poles and stretched as much as possible, with the fleshy side thoroughly moistened with water. Using an axe from which the handle had been removed, the skin was scraped until thinned down to the thickness of cloth. It was then again stretched out to dry on the ground. Then the skin was scraped in a circular motion with aloe leaves while continually applying moisture. The skin was dried once more, and then smeared with ox marrow and kidney fat, or with a kind of butter. This butter was produced by agitating milk in a half-filled skin pouch for a sufficiently long time to congeal. The Xhosa did not eat this butter; it was only used in the preparation and maintenance of skins. Finally, the outside of the skin was smeared with the aforementioned types of fats, and the inside of the skin with a mixture of red ochre and water (Fehr, 1968: 30).

Yet another method was noted among the Xhosa. Forked poles were planted against the cattle kraal creating a rectangular frame. The dry, hairy side of the raw hide was wetted and smeared with cow dung, and the fleshy side was thoroughly moistened with warm water and tied to the frame. The fleshy side was then scraped with axes until the roots of the hairs were visible. Two men had to work hard at this in order to have the scraping completed in one day. These scrapings were boiled and eaten as a delicacy. Alternatively, the scrapings, while still wet, were moulded into a ball, dried, and subsequently used by the women for smoothening the earthen floors of huts. These balls were so hard and durable that they often outlived their maker. Women then took charge of the process. The hide was again moistened and rubbed with a granite stone on the

fleshy side, stretched again on a wooden frame, and scraped with dried aloe leaves. The next day, the hide was moistened with clotted sour milk, and again scraped with dried aloe leaves. When the hide was dry, it was trampled and rubbed by hand to render it soft and pliable. The hairy side was smeared with fat, rolled, tied up and put aside. The following day the hide was again rubbed by hand. It was then moistened with warm water and scraped with aloe leaves, rolled up and put aside. On drying, it was opened up and scratched with aloe leaves until soft. The hide was trampled and rubbed, and was then ready. Allowing one day for each of the processes enumerated above, the preparation of a hide took from one to two weeks at the most (Kropf, quoted by Gitywa, 1971: 111–112; see also Shaw and Van Warmelo, 1974).

Among the Zulu, the hide was pegged to dry. When it was dry, the services of a professional hide-scaper were called in. He first soaked the hide in water for several days, dried it again, and then scraped it using an axe-blade. He then used a flat piece of wood, the size of one's hand, into which nails or pointed irons were driven. The hair was also removed with this tool. The craftsman's work was now finished, and the skin handed back to its owner. The owner took clotted milk and thoroughly rubbed this substance into the nappy side of the hide after which he rolled it up tightly, along with a liberal supply of maesa leaves (*Maesa lanceolata*), and left it overnight. It was now worked by hand, and the fleshy side smeared with earth from a termite mound. The whole procedure of hand-rubbing and termite-mound smearing was repeated every day for about a week. The day after its completion it was beaten with a stick to soften any still hard spots and to shake out soil (Bryant, 1967: 402–404). The Zulu used marula (*Sclerocarya birrea*) bark to process hides, and blacken them with grass-charcoal or coal-shale and fat. For greasing, castor oil or fat were used, or milk curds with warm water. The fleshy side was scraped (Krige, 1957: 211, see also Shooter, 1857: 357).

Livingstone (1857: 193) noted among the Makololo of Linyanti in the Caprivi Strip of Namibia that hides were stretched out using pegs, and dried. Ten to 12 men then gathered around a hide to scrape it with small adzes. It was then smeared with brain and clotted milk. It was again scraped with an instrument made by tying a number of iron spikes around a piece of wood, and milk or butter was again applied.

Having presented a sample of the techniques used by Bantu speakers of southern Africa, other authors have found similar methods and utensils in use by other groups in the region. These include, for example, the Marutse (Holub, 1881: 342–343)

and the Ila-speakers of Zambia (Smith and Dale, 1920: 183), the Mashubia, who inhabited the lower stretches of the Chobe River (Schulz and Hammar, 1897: 72), and people living between KwaZulu-Natal and Maputo Bay (Phillips, 1895: 131–132).

### Europeans

Amongst farmers of Namaqualand, Braaksma (1974: 41–46) noted that not all skins were fully processed. For instance, for clothes, hair was removed and the hide tanned, whereas in the case of blankets, cushions and mittens, hair was not removed. The first step was to salt the hide directly after slaughter. This extracts blood and water and prevents it from decaying. The hide was folded, left overnight, and then spread out in the shade to dry for up to three to four weeks. The inner side then was scraped with a rough stone to remove all flesh, and then washed with water and soap to remove all remaining fat. Following this, the hide was dried in the sun. When making blankets, the flesh side was smeared with a thick layer of white clay paste, which prevents dust from settling on the hide. It was then pegged to the ground. Different methods were used to remove the hair. The first was by placing layers of hides and ice plant (*Mesembryanthemum crystallinum*) leaves, which have a high salt content, in a tub. The length of the process is positively correlated with ambient temperature. In summer it could take about a week, but two to three weeks in winter. The hides started to rot during this process, and consequently developed an unpleasant smell. By then it was easy to remove the hair, and the hides were ready to be cured in the same manner as those with hair. In the dry winter months ice plants were not available. Another method of dehairing was to soak the hide for a night, and then bury it about 15 cm below the soil surface. Depending on the temperature, it would take a week or two for the hairs to become detached. Alternatively, the hide was placed in a tub filled with lime water, made from burned mollusc shells. First, the hides were soaked for several days in water to soften, after which lime was added (also see Erasmus, 1989: 31–32; Williers, 1987: 17–18). Using a soft piece of wood, the hair was scraped off. Now the hides were submerged for about two weeks in a mixture of water and maize meal, or water and bran. At this stage the hides could be tanned. Wattle (*Acacia dealbata* or *A. mearnsii*), 'basuintjie' and elandsbean were used for tanning. In the case of elandsbean, the roots were pulped and mixed with water. Hides were placed in this mixture and turned daily. The length of tanning depended on the type of animal skin. For a steenbok hide, tanning took about a week, whereas thicker hides required up to a month. The hides still had to be softened. This was done by smearing the

moist hide with a paste of soapy water, oil and fat.

In the Griqualand-West vicinity, Willers (1987: 17–18) noted that the bark of the Cape sumach (*Osyris compressa*) and elandsbean were used for tanning. To make hide shoes, roots of elandsbean were pulped, soaked in water, and the hides placed in the mixture. The same process was followed when using the bark of black wattle. However, the preparation before tanning was very important. The hair was removed, first by soaking the hide in water, and then in lime. Burying the hides in moist soil constituted another method. The hide was then placed in the tub, after having been washed to remove all lime. When the hide had absorbed enough of the mixture, it was stretched out, smeared with fat and left to dry in the sun. This was repeated a number of times. According to Holub (1881: 152), the bark of several trees, such as the wagon-wood tree (*Protea nitida*) or the bark of the mimosas (*Acacia* spp.) were also used to tan hides.

### DISCUSSION AND CONCLUSION

In southern Africa a variety of methods have been used to process hides in the past, in part determined by the availability of suitable materials such as particular trees and other plants. In cases where these were not endemic to a region, or their ingredients or particular components not known, other methods were developed to suit local needs. From ethnographic sources it has been demonstrated that not all hides were tanned, but often only treated to render them soft and pliable. True tanning, which is a chemical reaction (Van Wyk and Gericke, 2003), can only be achieved if the hide is allowed to react with certain plant and tree extracts that contain high levels of tannin. When hides were not tanned, but only treated, they were often scraped, smeared with fat, and worked with the hands and feet to render them soft and pliable. The reasons for this probably include that some groups were either not familiar with tanning techniques or substances, or that trees or other plants with high levels of tannin were not readily available in their immediate surroundings. In general, men performed most of the hide processing. However, the labour of both men and women contributed to the various stages of hide processing.

In some instances, hide processing was a specialized craft, for instance among the Zulu. According to Akins (1986: 41), hide specialists in Nguni society (of which the Zulu are part) had considerable importance, as they were responsible for the community's hide garments and the rawhide shields used in war and hunting. In most other cases, however, hide processing was the responsibility of the owner of the skin. In some groups such as the Basotho and the Tswana from Dithakong, the

preparation of hides was a group activity accompanied by song. This does not necessarily imply that it is a ritual, but rather a functional group activity coupled with merriment. Dancing on the skins seems to have been a functional effort to soften them.

We can expect to find tools used in hide processing in the archaeological record (e.g., Mason, 1964). These often represent the only record of such activities since hides and other organic materials are only infrequently preserved. Such implements include iron for scraping, stones used to rub the skins, and wooden and iron pegs. Animal teeth, sharp stones, knives, spear-blades and brushes were also used to scrape hides. Some groups constructed a wooden frame to assist in the process. Only two instances are known of bones having been used to scrape the inside of hides, namely at Dithakong and also by the Khoekhoen as described by Le Vaillant. It has been suggested, based on finds of polished bone tools, particularly from Iron Age sites (e.g., Badenhorst and Plug, 2001; Voigt, 1983), that bones were used to scrape hides. Animal brain matter is a fatty substance, and was often used to soften hides. Other substances used as softeners included animal fat, cow dung, marrow, red clay, earth from termite mounds, butter and milk.

Various trees and other plants were used in the tanning of hides. These included the bark and leaves of the kiat, acacias, sweet thorn, sourfig, marula, maesa, wagon-wood tree and wattle, as well as the leaves and juices of sumach beans, aloes and ice plants. According to Van Wyk and Gericke (2003: 247), tanning causes the formation of chemical bonds between collagen fibres of the hide, making it resistant to water, heat and abrasion. Plants, leaves and bark of trees other than those mentioned above can be used to tan hides. These include the stem and roots of waxberries (*Myrica cordifolia*), bark of white mangroves (*Avicennia marina*), 'kliphout' (*Heeria argentea*), and black wattle (*Acacia mearnsii*). In addition, the bark and leaves of candlewood (*Pterocelastrus tricuspidatus*) can be used, as can the bark and wood of the karee (*Rhus* sp.). The bark of the wild almond (*Brabejum stellatifolium*) also contains high tannin levels, as does the fruit of the 'jakkalskos' (*Hydnora africana*), the bark of the wild grape (*Lannea edulis*), the bark of the mobola plum (*Parinari curatellifolia*), as well as the 'wit eintjie' or 'kaneeltjie' (*Pelargonium triste*) (Van Wyk and Gericke, 2003).

Different plants and trees produce different colours when used to tan hides (e.g., Dalziel, 1926). For example, elandsbean gives leather a characteristic reddish-brown colour. The fresh leaves of Cape sumach (*Osyris compressa*) provide a light brown,

while the bark produces a dark brown tint. In Namaqualand, 'kaneeltjies' (*Pelargonium triste*) are used for tanning, producing a red colour (Van Wyk and Gericke, 2003). Although it has been proposed in many parts of the world that ochre preserves hides (see summary by Watts, 2002), ochre was only used in the final stages of hide processing as a colouring agent.

It is conceivable that knowledge of leather processing was transferred between groups of people in southern Africa over time. For example, early Europeans, who had little or no knowledge of local plants and conditions, probably gained insights into leather processing from local Bantu speakers, the Khoekhoen and hunter-gatherers. Conversely, techniques of leather processing could have been transferred from Europeans to local people. For example, according to Davison (1984: 163), the Lobedu from present-day Limpopo Province in South Africa, used riems (thongs) "...mainly for tethering animals and for inspanning cattle, a practice adopted from white farmers."

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