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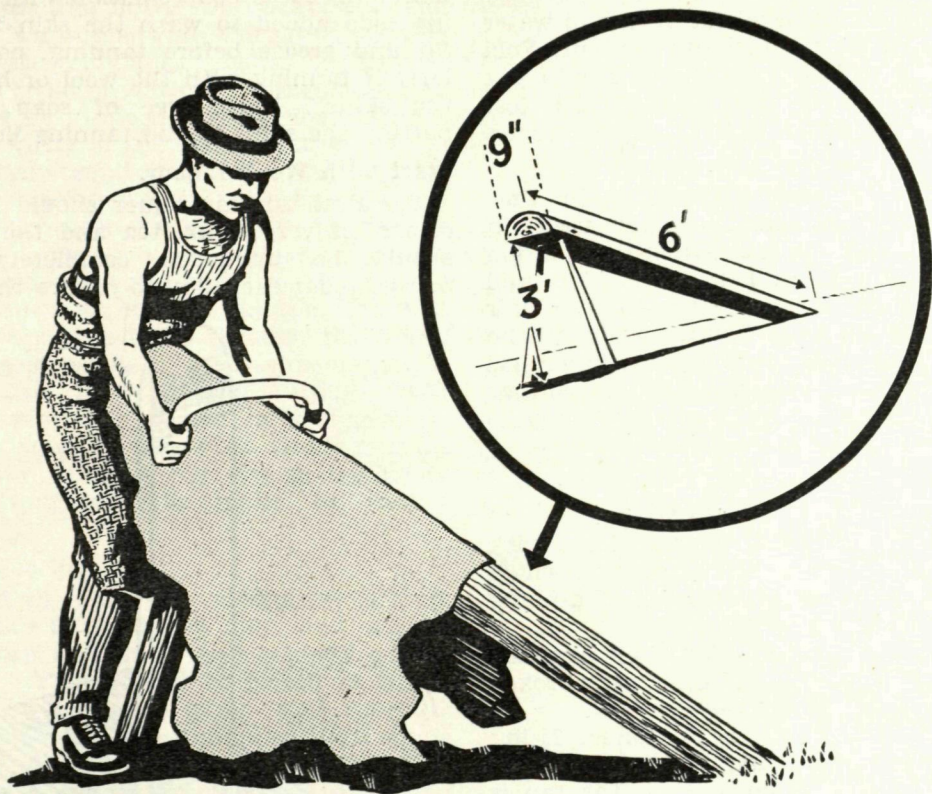


Fig. 1.—A "tanner's horse" can be improvised as shown. The wet hide or skin is draped over the horse and the operator—wearing bagging or other material as an apron—leans against the end of the horse and scrapes the flesh side of the skin. Strokes of the scraper should be made towards the lower end of the the horse

THE HOME TANNING OF HIDES AND SKINS

By J. A. MALLET

INQUIRIES are frequently received from farmers concerning methods of home tanning, and while this subject is outside the scope of normal departmental advice, we are publishing a number of recipes from various sources which may be helpful.

It has often been said that the soundest advice to those contemplating home tanning is identical with Mr. Punch's oft-quoted advice to a young man contemplating matrimony. Mr. Punch's advice was "Don't"—and unless the amateur tanner is prepared to devote plenty of time and put in a lot of work on the tanning project, he would be well-advised to hand the job over to a professional tanner if he can find one willing to undertake custom work.

DE-HAIRING

Hides and skins may be tanned with or without hair or wool. If it is desired to

remove the hair, the hide may be de-haired by one of these methods:—

- (1) The hide—if dried—is soaked in water until pliable. Newly-flayed hides do not require to be soaked. Fold the hide with the hair inward to form an easily-handled package and bury in moist earth or sand, or in a manure-heap. Exhume after two days and test. The hair on the belly portion is usually the most firmly attached. When this commences to "slip" freely, scrape the hide to remove the hair and wash thoroughly.

- (2) Immerse the hide in a sloppy mixture of wheat bran and water rubbing it well into the hair. Fold with hair inward, cover with wet bags to keep moist, and test frequently until the hair comes away freely.
- (3) Slake builder's lime ($\frac{1}{2}$ lb. lime to each gallon of water used) in a suitable tub. When the solution is cool, immerse the hide and leave it to soak until the hair comes away freely. Scrape off the hair and soak the hide in several clean waters. Use a vinegar solution (1 pint vinegar to 3 pints water) to neutralise the lime.

BARK TANNING

Many West Australian trees have bark with a fairly high tannin content which lends itself to the preparation of tanning liquor.

To each gallon of water allow approximately these weights of dried bark broken up into small pieces:—

Mallet 1 lb.; Wattle $1\frac{1}{2}$ lb.; mallee $2\frac{1}{2}$ lb.; gimlet $1\frac{1}{2}$ lb.; wandoo 2 lb.; jam 5 lb. Bark which is stripped when the sap is up and dried in the shade is best. Green bark contains a lot of water and is not so easily broken up.

Iron should never be allowed to come into contact with tanning bark or liquor as it combines with the tannin to cause unsightly stains. It is advisable to pound up the bark with a mallet or maul and to use wooden tubs as tanning vessels.

Soak the shredded bark in rainwater for several days, then draw off the liquid. One gallon of this stock solution should be diluted with two gallons of rainwater to make the initial tanning liquor. Some people recommend pouring boiling water on the shredded bark to extract more tannin.

Preparing the Skins.

Before placing the skins in the tanning liquor, remove all flesh, fat and surface layers from the flesh side of the skins. This is best accomplished by laying the wet skin over a beam or "tanner's horse" (see illustration) and using blunt knives, rasps, files, scrapers, brickbats, or pieces of broken grindstone to remove unwanted

material. Use a soap solution with washing soda added to wash the skin free of fat and grease before tanning, particularly if tanning with the wool or hair on the skins. Rinse free of soap before putting the skins in the tanning liquor.

Start with Weak Liquor.

The first tanning liquor should be the colour of very weak tea and the skins should be immersed completely and moved about each day to ensure that the

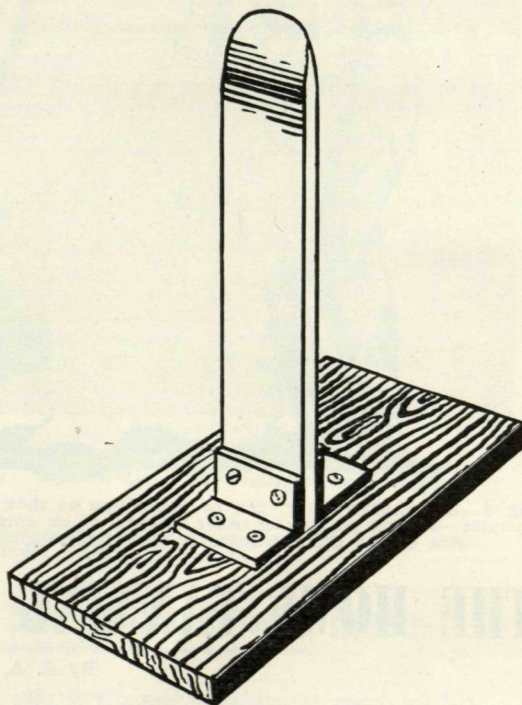


Fig. 2.—A "staking tool." This could be made from hardwood or metal. An old blunt axe-blade set in a vice makes a good staking tool

liquid reaches every part. It is advisable to take the skins out of the liquor fairly frequently and treat them by scraping the flesh side, using the "horse" and a blunt drawing knife. A cut made in the edge of the skin will reveal the extent of the penetration of the tan liquor.

An insufficiently tanned skin will show a white "horny" streak in the centre of the cut edge.

White patches on the flesh side of the skin will indicate that the liquor is not penetrating those areas, probably due to excess fat in the fibres. Such patches should be given extra scraping.

The tanning liquor will weaken as the tannin is absorbed into the skins. As this occurs, the old liquor should be drained off and replaced with a fresh solution, or it could be "topped up" by the addition of a quantity of the stock solution.

The time required to tan a skin depends on the thickness and texture. Bullock hides may need up to four months or more to give best results, although for home and farm use they would probably be satisfactory so long as the tan had completely penetrated through the fibres.

The golden rule in successful tanning is to "make haste slowly" using weak liquors especially in the early stages. At a later stage a somewhat stronger solution may be used, but always remember that strong solutions make the leather hard.

Fat-Liquoring.

When the skins are sufficiently tanned, they should be taken out, well washed with soap and water and scraped on the "horse." They should be placed to dry in a shady spot, and while still wet, the flesh side should be treated with an emulsion of oil, soft soap, egg yolk, etc.

A Perth tanner recommends dissolving $\frac{1}{2}$ oz. of washing soda in a small quantity of water and whisking this with two egg yolks into a pint of castor oil.

Sulphonated cod oil or neatsfoot oil is recommended by other experts while a successful amateur tanner recommends equal quantities of neatsfoot oil, soft soap and methylated spirit. The oil is heated almost to boiling point, then removed from the fire and the soft soap and methylated spirit are stirred in separately. The mixture is applied warm.

These emulsions should be applied to the wet skins, being scrubbed into the flesh side with a stiff brush.

Staking.

At frequent intervals, the drying skin should be worked between the hands and "staked" by drawing it backward and forward across a blunt axe-blade or similar tool. Thorough staking, together with the penetration of the emulsion, gives the leather softness and pliability. In staking, use all the pressure the skin will stand and be prepared to put in a lot of time if you wish the leather to be soft.

If on drying out, the leather is too hard, wrap the skin in a wet bag, leave overnight so that the moisture can penetrate, then scrub in some more emulsion and continue with the staking.

REDGUM TANNING

The most skilful amateur tanner I have ever known, lived in one of our South-West timber townships and he always used kino—the gum from the marri or redgum (*Eucalyptus calophylla*) instead of bark, when making his tanning liquor. His work was mainly with kangaroo and rabbit skins.

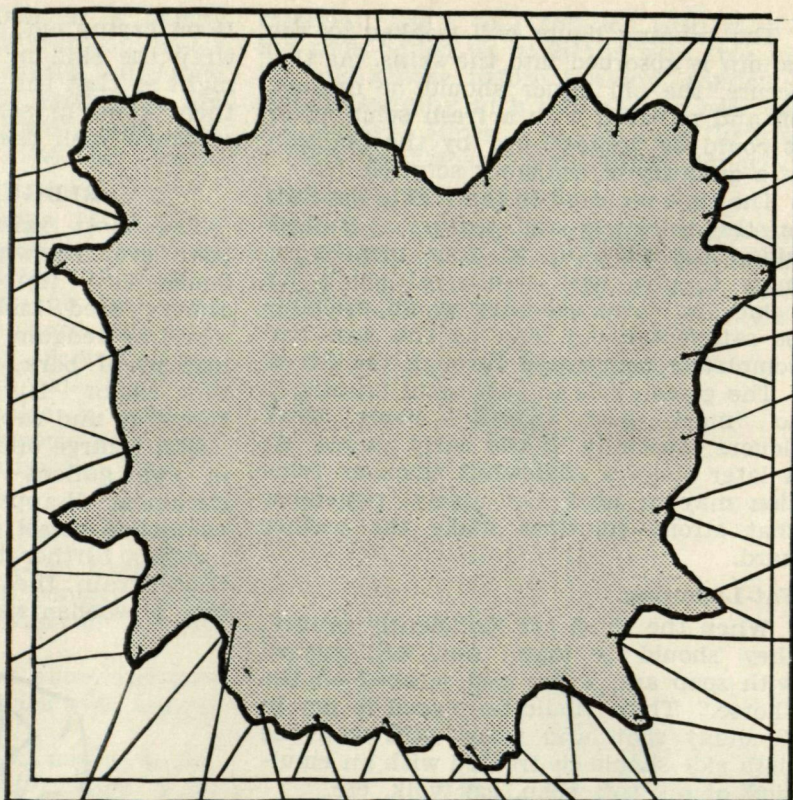
Boil a large double handful of the gum in two gallons of rainwater until all stickiness disappears. Use a copper or enamelled vessel.

Add a further two gallons of rainwater then strain the liquid through hessian into a wooden vessel.



Fig. 3.—Staking. The skin or hide is drawn backward and forward over the edge of the staking tool to loosen the fibres and make the leather pliable

Fig. 4.—A frame, as shown, facilitates tawing as the skin sags in the centre forming a shallow receptacle which holds the alum and salt solution



After the skins have been in the tan for eight to ten days, boil up the liquid again with half the quantity of fresh gum. Strain as before and allow to become cold before replacing the skins.

Skins usually take about a month to tan but come to no harm if left longer—even up to two months.

When finally removed from the tan they should be washed with soap and water, rinsed thoroughly and tacked on a board, flesh side upward, in a shady spot. To make soft skins to be sewn together for rugs, remove the tacks when the skins are dry, lay fur side down on a flat surface and sandpaper the flesh side carefully. Damp down the skins and apply the neatsfoot oil, soft soap and methylated spirit emulsion then continue rubbing and staking until the skins are dry and soft.

TANNING NETS

Tennis nets, fishing nets, etc., can be satisfactorily tanned in either the bark or redgum solutions. A somewhat stronger

liquor than that normally used for skins is permissible here, the aim being to give the finished net a dark brown colour.

Submerge the nets completely for 48 hours or more. If, on drying, the nets still appear light-coloured, repeat the process.

TAWING

Tawing is the term generally used to denote the preparation of white leather. Alum and saltpetre or alum and salt are commonly used in this work, but several other preparations give good results.

Tawing is a popular home method and is commonly used in making floor rugs from fox and kangaroo skins and woolly sheepskins.

Tawing Woolly Sheepskins.

Fresh skins are preferable for this work as the wool is less likely to "slip" than on skins which have been stored. Where dried skins are used, they should first be soaked or draped with wet bags until soft. This should be done in a cool building

away from sunlight as heating of the skin, combined with moisture, will loosen the wool.

Place across a round beam or "tanner's horse" and scrape to remove all fat and flesh from the inner side of the skin, then wash thoroughly in cold or barely lukewarm water to which has been added some good soap flakes or household detergent.

Now tack the skin out wool downward on a flat board—or better still pass cords through holes made near the edges of the skin and lace it into a frame as shown in the illustration. The frame is preferred, as the skin sags and forms a shallow container which holds the tanning solution.

Dissolve 2 lb. of alum in 2 pints hot water. Dissolve 3 oz. washing soda in a quarter-pint of hot water and add this slowly to the alum solution. This should be done carefully as a strong effervescence will be produced. Finally add 1 lb. of coarse salt to the mixture and stir till dissolved. Keep the solution in glass bottles as it corrodes metal containers.

Pour some of the solution on to the skin and scrub it in with a stiff brush. Repeat the process as often as possible every day for seven days. Let some of the solution remain in the depression of the skin and scrub it into all the higher portions. Frequent scraping or rubbing with a piece of brick or grindstone will assist penetration.

At the end of a week, drain off surplus solution and leave the skin on the frame or board for a month so that the solution can continue to act on the skin fibres. At the end of this period, the skin will be hard and stiff and coated with crystals. Wipe off the crystals with a wet cloth and swab the skin with a fat-liquor made by whisking up two egg-yolks (separated from the whites) in a cupful of lukewarm water. (Any of the other fat-liquor preparations mentioned earlier in this article could probably be substituted if desired.)

After rubbing well with the fat-liquor, the skin should be removed from the frame or board, damped down sufficiently to be rolled up, and kept moist rolled in

a damp bag for about a week to allow the fat-liquor to penetrate.

It should then be thoroughly "staked" as described earlier, together with sandpapering of the flesh side and the application of more fat-liquor if required.

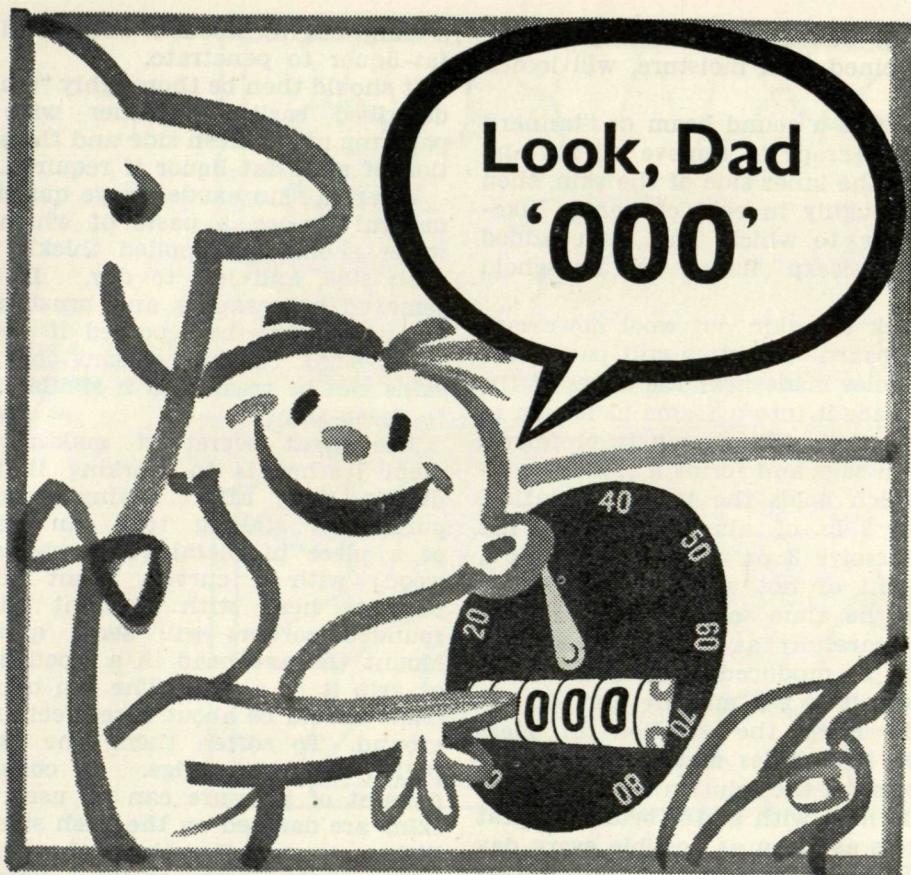
Where a skin exudes large quantities of natural grease, a paste of whiting and water should be applied thickly to the flesh side, and left to dry. It is then removed by scraping and brushing. The treatment may be repeated if necessary.

Fox-skins, kangaroo-skins or rabbit-skins can be treated in a similar manner to sheep-skins.

The great secret of making a soft alum leather is in working it up well during and after drying. For this purpose a staking tool can be made of a piece of metal (or perhaps hardwood) with a curved, blunt edge. An old axe head with a blunt edge and rounded corners will serve quite well. Mount the axe head in a wooden frame, or grip it in a vice. The top of the axe blade should be about three feet from the ground. To soften them, the skins are pulled over this edge. A considerable amount of pressure can be used. If the skins are damped on the flesh side with a little water to soften them, they will stake very much more easily. Very little moisture is needed for the purpose, and some preliminary softening can be given by working with the hands.

Unless the loose tissue has been scraped off well before tanning, the staking will raise the flesh side. If the loose flesh has not been removed before tanning, this can be done now by rubbing with pumicestone or by gently pressing the skin to a quick-moving grindstone. A better method than the former, and safer than the latter, is to throw the skin over a pole and scrape it with a round tin lid (the lid of a tobacco tin will serve, but a larger one will work the skins more quickly). Scraping must be done with judgment.

The skins should now be soft, and the flesh side fairly smooth. The wool can be combed, brushed and, as a final finish, a narrow strip can be cut from all round the skin, since the edges are often difficult to soften. When mats of this nature are washed they sometimes dry hard. A little staking always softens them.



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