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HOBBY TANNING OF DEER HIDES AND SMALL FUR SKINS

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Because the preservation of hides and furs is a very old art, many successful methods have been developed through the years. The American Indians used wood ashes to remove the hair, and the deer's brains as a tanning agent. The squaws chewed the hides to produce a soft buckskin. Few modern hobby tanners will want to try this method.

However, deer hides and small fur skins may be tanned at home. A minimum of tools is needed, and the chemicals required for some methods can be obtained locally. The possession of wildlife pelts is governed by game laws. Consult your local game warden.

Tanning leather or furs requires time and pa-

tience. No formulas for tanning are foolproof, and success can be attained only through hard work, close observation, and the exercise of care and patience. The inexperienced tanner should realize that his first attempts will not produce professional quality leather. If the fur or hide is quite valuable, it would be best to send it to a commercial tanner. However, for a hobby project these instructions will enable you to do an acceptable job.

The hide and fur of deer and squirrel are probably the best to start with, primarily because they are easy to prepare for the tanning process. Others, such as rabbits, are thin-skinned and require more care to avoid damaging the pelt.

PRELIMINARY PREPARATIONS

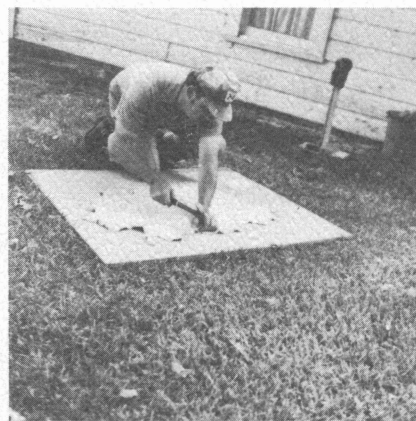
After the animal has been skinned, the hide should be fleshed; that is, all meat should be removed. If tanning cannot be started within one day, the hides or pelts must be cured or treated to prevent deterioration until tanning is begun.



All flesh must be removed from the hide before tanning. This is done by repeated scraping with a knife.

Pelts of small animals should be thoroughly air-dried for preservation. The skin may be "cased" and dried on a frame. But for hobby tanning it is just as well to split the skin down the belly and dry it flat. The skin may be tacked to a board with the flesh side out to facilitate drying.

Deer hides and large pelts such as coyote skins should be promptly salted. After the hide has been removed from the carcass, cut away any pieces of flesh. Trim off any ragged edges being careful to cut from the skin side. Spread the hide, hair side down, on a flat surface. Sprinkle fresh, clean salt over the flesh side of the hide, using a pound of salt for each pound of hide. Be sure that *all parts* of the flesh side receive a sprinkling of salt and rub it into the cut edges, neck, legs and wrinkles. Remember, any unsalted spot is unprotected.



The skin may be tacked to a board, hair side down, to facilitate drying.

If several hides are to be cured, pile them one on top of the other, always hair side down, and salt each one on the flesh side as directed. Be sure not to disturb the salt layer when piling on another hide, since this will cause unsalted spots and spoiled hides. Liquid from the hides should drain away from the pile and not

collect on the bottom hide. In 10 to 14 days the hide or hides may be hung up to dry thoroughly. If salted again, the dry hide may be stored as late as warm weather in April or May. It is generally not advisable to keep hides or skins over the summer because of deterioration and insect damage.

SOAKING AND CLEANING

The first step in tanning is to get the skin thoroughly softened, cleaned and free from flesh and grease. A cured skin will require soaking in water to soften it.

Split the tail the entire length on the underside. If the skin is "cased," split it neatly down the middle of the belly. Soak it in several changes of clear, cool water.

All soaking and tanning should be done in a wooden barrel, large earthen crock or a plastic garbage can with 5- to 10- gallon capacity. Never use a metal container since the salt and tanning chemicals will react with the metal.

When the skin begins to soften, lay it on a smooth board and begin working over the flesh side to break up the adhering tissue and fat. All dried skins have a shiny, tight layer of tissue which must be broken up and entirely removed; this can be done by alternately scraping and soaking the hide. A good tool for scraping the tissue is a metal edge with dull saw teeth or notches filed in it. An old hacksaw blade works well. The flint scrapers of the American Indians are good tools for this task.

While a skin must be soaked until soft, it should not stay wet longer than necessary, as the hair may start to slip. The time of soaking depends upon the condition of the skin. Some skins require only about 2 hours, while others need a much longer time.

In fleshing and scraping, care also must be taken not to injure the true skin or expose the hair roots, especially on thin skins.

When the skin is almost soft, put it in lukewarm water containing an ounce of soda or borax to the gallon. Soap also may be added. Use a paddle to stir the skin around in the solution. This treatment promotes final softening, cleans the skin and cuts the grease.

Work again on the board with the back edge of a knife held nearly flat against the side. This operation is called scudding and is of the utmost importance.

Finally, rinse thoroughly in lukewarm water. Squeeze out most of the water, but do not wring the skin.

If the skin is to be tanned with the hair on, proceed to the section on tanning. If you are tanning a deer hide into buckskin, the hair must be removed before tanning.

DEHAIRING

Mix 4 to 5 quarts of hydrated lime with 5 gallons of water. For a smaller mixture, a quart of hydrated lime to 1 gallon of water will do. Place the hide in the lime water and leave until the hair slides off readily when pushed with your hand. This will require from 6 to 10 days. Make sure that the hide is completely immersed in the limewater and that no air is trapped under the hide.

After the hair begins to slip off readily, place the hide over a board and push off all the hair with the back side of a dull knife. Scud both sides of the hide to remove as much lime, grease and fleshy material as possible.



The dehairing process involves pushing the hair off the soaked hide with the back side of a knife.

After the hide has been through the dehairing operation, soak it in clean water for 4 or 5 hours. Then scud again. Buy 1 ounce of U.S.P. lactic acid. Fill a container with 10 gallons of water and stir in the lactic acid, mixing thoroughly with a wooden paddle. Put

the hide into this solution for 24 hours to stop the action of the lime. If lactic acid cannot be obtained, 1 pint of vinegar may be substituted for each ounce of lactic acid.

The hide is now ready for tanning.

TANNING

It should be understood that a hide cannot be properly tanned unless it is free from all meat, flesh, mud and blood and is in a fresh condition.

Several methods are given below. The salt and alum tannage is the least expensive and a good one for

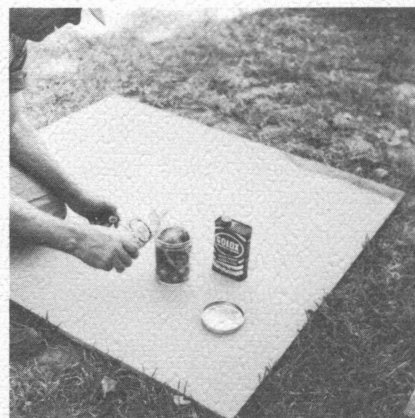
the beginner. Alcohol and turpentine tannage would be good for a beginning project on a small fur skin. Chrome tannage produces a durable buckskin but is more difficult. The best quality home-tanned product is produced with a glutaraldehyde tannage. However, it is also the most costly and the availability of necessary chemicals is limited.

Alcohol and Turpentine Tannage

This method is perhaps the easiest for small fur skins and has been used successfully on rabbit and squirrel.

Use a large-mouthed gallon jar with a screw top. Place in it enough wood alcohol and turpentine in equal parts to cover a small fur skin. A half pint of each would be sufficient for a squirrel or rabbit skin. Shake or stir the solution each day, because the alcohol and turpentine will separate.

After 7 to 10 days, remove the skin and wash in detergent water to remove the alcohol, turpentine and grease. Then rinse well several times to remove the detergent. Dry the skin by squeezing, not by wringing, and when partly dry, proceed to the oiling and finishing process.



The alcohol and turpentine tanning method can be used for small fur skins.

Salt and Alum Tannage

This is an old method for fur skin tanning and is widely used. When properly carried out, it produces skins with some stretch and flexibility. It often happens, however, that alum-tanned skins come out stiff and hard and must be worked repeatedly and sometimes retanned.

A salt-alum tanning solution may be prepared using the following proportions: 1 pound of ammonia

alum or potash alum dissolved in 1 gallon of water; 4 ounces of washing soda (crystallized sodium carbonate) and 8 ounces of salt, dissolved together in $\frac{1}{2}$ gallon of water. When dissolved, pour the soda-salt solution very slowly into the alum solution while stirring vigorously.

A skin, cleaned and softened as previously described, may be tanned by immersion in this

solution for 2 to 5 days, depending upon its thickness. Because of the action of alum on some furs it may be best, as a general rule, to apply the tanning liquor as a paste to the flesh side only.

Mix the tanning liquor with sufficient flour to make a thin paste. Add the flour in small quantities with a little water and mix thoroughly to avoid lumps. Tack the skin out smoothly, flesh side up. Apply a coating of the paste about one-eighth inch thick to

cover the skin. The next day, scrape off most of the paste and apply another coating. Apply two or three coatings at daily intervals. Only thick skins should need as many as three treatments. Leave the last coating on for 3 to 4 days. Finally, scrape off the paste and rinse the hide clean in a gallon of water containing about an ounce of borax. Then rinse in clear water. Put the skin on the board and use a dull edge to press out most of the water; then proceed to the oiling and finishing process.

Chrome Tannage

This method is a chemical process and all chemicals must be of good quality and accurately weighed, and the specific quantities of water carefully measured. The tanning solution should be made up at least 2 days before it is to be used.

The following chemicals are required: chrome alum (chromium potassium sulfate crystals); soda crystals (crystallized sodium carbonate); and common salt (sodium chloride). Purchase pure chemicals of the United States Pharmacopoeia quality.

For two or three deer hides weighing not more than 30 pounds total, use the following quantities for the tanning solution:

Dissolve 1¾ pounds of soda crystals and 3 pounds of common salt in 1½ gallons of warm, clean water in a plastic bucket. The soda crystals must be clear or glasslike. Do not use the white crusted lumps.

At the same time, dissolve 6 pounds of chrome alum in 4½ gallons of cool, clean water. Use a large plastic garbage can, wooden barrel or crock—not a metal container. This will take some time to dissolve and will need frequent stirring. It is important to use only the very dark, hard, glossy, purple-colored crystals of chrome alum, not the lighter, crumbly, dull lavender ones.

First Day. To start tanning, pour one-third (2 gallons) of the stock chrome solution into a clean 30-gallon plastic garbage can, and add 15 gallons of clean, cool water. Thoroughly mix the solution in the garbage can and then place in it the hides which have been delimed. Work the hides about and stir the solution frequently, especially during the first 2 or 3 days. This helps give the hides an even color, and should be done every hour or so throughout the first day. Suspend the hides in the solution and keep them as smooth as possible for the best tannage.

Fourth Day. Temporarily remove the hides from the barrel. Add one-half (2 gallons) of the remaining

stock chrome solution, thoroughly mixing it with that in the barrel, and again suspend the hides in it. Move the hides about and stir the solution three or four times each day.

Sixth Day. Once more, temporarily remove the hides. Pour into the barrel the rest of the stock chrome solution, thoroughly mixing it with that in the garbage can, and suspend the hides. Move the hides about and stir frequently as before.

Eighth to Tenth Days. Test for completion of tannage by cutting off a small piece of the thickest part of the hide, usually in the neck, and examining the freshly cut edge of the piece. If the cut edge seems to be evenly colored greenish or bluish all the way through, the tanning is about finished. Boil the small piece in water for a few minutes. If it curls up and becomes hard or rubbery, the tanning is not completed and the hides must be left in the tanning solution for a few days longer, or until a small piece is changed little when boiled in water.

When the hides are tanned, take them out of the tanning solution and put them in a barrel of clean water. The barrel in which the tanning was done can be used after it has been thoroughly washed.

When emptying the tanning barrel be sure to carefully dispose of the tanning solution. Although not poisonous to the touch, it probably would be fatal for farm animals should they drink it, and it is harmful to soil.

Wash the hides in about four changes of water. Soak the hides overnight in a solution of 1 pound of borax in about 20 gallons of water. Move the hides about in the borax solution as often as feasible. After soaking overnight in the borax solution, soak the hides in clean water for an entire day, changing the water five or six times. Take the hides out, let the water drain off and proceed as directed in the oiling and finishing section.

Glutaraldehyde Tannage

Weigh the damp hide or skin and record the weight, since it will be used throughout the process.

First Day. For each pound of the drained, wet weight of the scoured deer hide or fur skin, place 5 quarts of water (approximately 85 F) in a clean wooden barrel, crock or plastic garbage can. Add ½ pound of technical grade salt for each gallon of water and dissolve by stirring with a wooden paddle. Measure 2¼ fluid ounces of glutaraldehyde (25 percent commercial solution) for each pound of the drained, wet weight of the scoured hide. Pour it carefully into the salt solution and stir well. Glutaraldehyde is irritating; contact with the skin and eyes and inhalation of vapors should be avoided. The use of rubber gloves, a rubber apron, a safety visor or safety glasses and adequate ventilation is recommended.

Immerse the hide carefully in the glutaraldehyde solution to avoid splashing. Stir for about 5 minutes

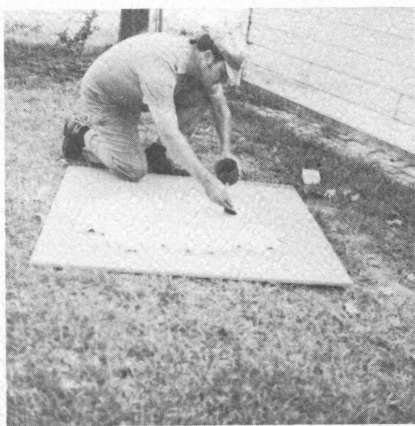
with a wooden paddle, then for 1 minute at hourly intervals during the day. Cover the container between stirrings and overnight. After several hours the color of the skin becomes pale yellow as tanning proceeds. Allow to stand overnight with the hide completely immersed.

Second Day. Stir 1 minute per hour the second day. Continue the tanning for at least 48 hours.

Fourth Day. Test for completion of tannage by cutting off a small piece of the thickest part, usually in the neck, and boil the small piece in water for a few minutes. If it curls up and becomes hard and rubbery, the tanning is not completed. The hides must be left in the tanning solution a day or two longer. Even though tannage can be complete when the boiled leather shows little change, a fuller, softer leather can be obtained by continuing the tanning for another day.

OILING AND FINISHING

Let the wet, tanned leather dry a bit. But while it is still quite damp apply a coating of suitable fat liquor oil (such as sulfated neatsfoot oil). The amount of oil required will vary depending upon the natural oiliness of the skin. For instance, a normally fat raccoon skin will require proportionately less oil than a deer hide.



The fat liquor oil can be applied easily with a paint brush.

The following fat liquor solution is for a 10-pound deer hide. Mix 3½ ounces of sulfated neatsfoot oil with

3½ ounces of warm water and add 1 ounce of household ammonia.

Place the hide on a flat surface hair-side down. Apply part of the fat liquor solution to a portion of the hide and spread it evenly with a paint brush or your hand. Continue until one-half of the solution has been applied to the hide. After 30 minutes, apply the remainder in the same way. Cover with a sheet of plastic and let stand overnight. If several skins are fat-liquored at one time, they may be piled, flesh side to flesh side, overnight.

The next day drape the skin, hair side out, over a pole or sawhorse and allow the hair to dry. An electric fan may be used to speed the drying. Then nail the skin, flesh side up, to a plywood board, stretching it slightly. Space the nails (no. 6 finish) every 5 or 6 inches around the circumference and about one-half inch in from the edge. Dry the flesh side at room temperature.

When nearly dry, but still slightly damp, begin to work the skin in all directions, stretching it from corner to corner and working the flesh side over a stake or a wooden edge, such as the back of a chair or piece of board clamped in a vise. The skin may also be worked this way through smooth metal rings.

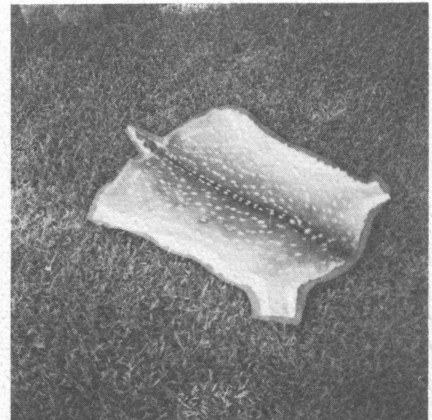
Much of the success in getting a soft skin lies in the repeated working, which must be done while the



Repeatedly working the skin over a wooden edge insures that it will be soft when thoroughly dried.

skin is drying out, not after it is dry. If the skin is not soft enough when dry, it must be evenly dampened and worked again while drying. This may be repeated several times if necessary.

After the skin has been softened and dried, it should be given a hasty bath in white or unleaded gasoline, especially if the skin is too greasy. This also helps to deodorize some skins, such as those of the skunk. (Caution: Gasoline is extremely flammable and should be used outdoors away from fire or flame.)



The finished hide or fur skin can be attached to a felt backing for display.

Finally, to clean and brighten the fur, tumble it repeatedly in dry, warm sawdust, preferably hardwood sawdust. Bran or cornmeal can also be used. Clean the particles out of the fur by gentle shaking, beating, combing and brushing.

The flesh side may be smoothed, if necessary, by working over it with a sandpaper block. This also helps to soften the skin further. If desired, the thicker sections of the skin may be made thinner and more flexible by shaving off some of the skin or hide.

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