from the book Buckskin: The Ancient Art of Braintanning
by Steven Edholm and Tamara Wilder
courtesy of paleotechnics.com

7

TOOLS

The tools for making wet-scrape buckskin are relatively simple and fairly easy to come by or make. Some of the tools listed here could be considered optional; in fact, the only ones absolutely necessary to the making of functional buckskin are the beam, the scraper, and something to skin the deer with. Regardless, having the right tool at the right time is a great boon; so, we recommend that you make some effort to put together a good set before embarking on your buckskin journey.

Every tanner will, over time, develop preferences as to tools and methods. For example, friend and tanner Dave Bethke relies greatly on the stationary stake in softening but seems to have little use for cables. Mel Beattie uses the cable but seems to rely mostly on stretching by hand. Our tendency is to use the cable a lot. All of us turn out good buckskin, but the tools we choose to do it with are dictated by our own tastes, temperaments, and habits.

This concept applies to tanning (and most everything) in general, and we think that you would do well to keep it in mind. Try to remain constructively critical of your own and others' methods. Don't get to thinking that any one way is necessarily "the way" (even when we try to tell you that it is!). Too many of us fall into this trap, cheating ourselves out of learning and/or winding up in an embarrassing word-eating session.

There are, of course, tools for braintanning which we don't know about or have chosen to omit and still more awaiting development.

Regardless of what we write in this book, those of you who continue to tan will inevitably find some methods and tools that

work much better for you than whatever we tell you here and might think us derelict for setting you on the wrong path: a path on which you wasted precious hours and calories. Well, we'll just say it now and be done with it. **WE'RE SORRY!.** We don't know everything! Besides, what works for one person will inevitably be disliked by some other. Chapter 29, Options, has a few more tools and ideas with which to expand your horizons.

THE BEAM: The beam is where the skin is fleshed, grained, and membraned. A considerable amount of the tanning work is done on the beam, making it an important tool. Try to select a good one, especially if you plan to do much tanning.

All of our beams are made of wood-although some people use eight to ten inch diameter PVC pipe. Most tanners seem to agree that beams of wood should be somewhat soft to provide a cushioning effect under the vigorous action of scraping, so choose a soft wood if possible.

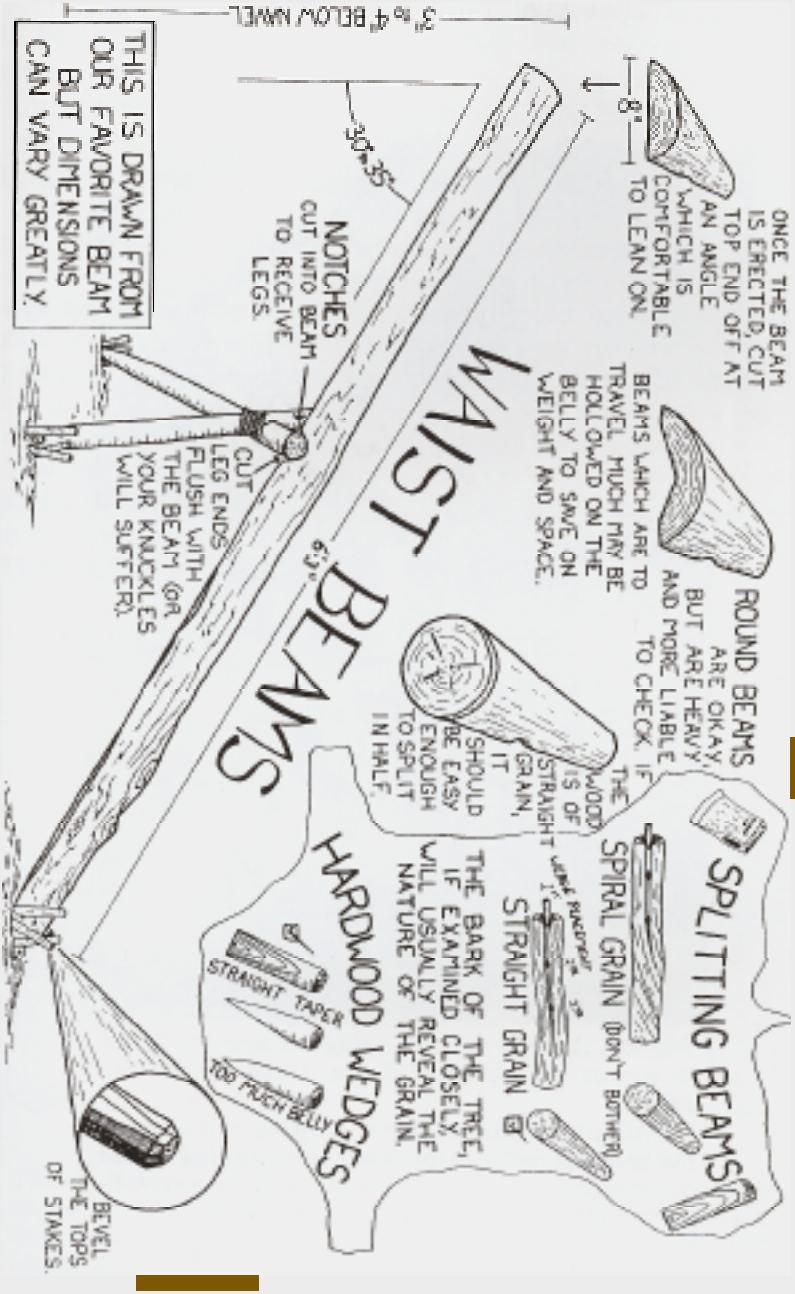
Another thing to consider is ease of maintenance. The beam is often gouged by the scraper and needs periodic dressing to remove this damage and maintain a smooth working surface. Some woods tend to shred out in strings, leaving runs which require much time and wood removal to fix. Our preference for beam wood is Big-Leafed Maple *(Acer macrophylum)*, a native to the West Coast. Instead of shredding, the wood tends to come out in clean chips that are easy to repair; unlike many other maples, it is relatively soft.

Cottonwood *(Populus sp.)* is the most commonly mentioned beam wood. In terms of softness it is very nice, but, because of the aforementioned shredding problem, it can be difficult to maintain. Try out some of your local soft woods.

Another virtue of a good beam is an absence of knots in the working area. Knots can cause major problems in the maintenance of a smooth beam surface; the larger the knot, the bigger the problem. A small knot or two can be acceptable. Cracks can also be undesirable, but if they aren't too wide, they shouldn't present much of a problem.

There are two basic ways to set the beam up:

-As a *waist beam*, set with one end at waist height and the other on the ground.


WAIST BEAMS
ONCE THE BEAM IS ERECTED, CUT TOP END OFF AT AN ANGLE WHICH IS COMFORTABLE TO LEAN ON.
8"
3" to 4" BELOW NAVEL
30°-35°
NOTCHES CUT INTO BEAM TO RECEIVE LEGS.
THIS IS DRAWN FROM OUR FAVORITE BEAM BUT DIMENSIONS CAN VARY GREATLY.
CUT LEG ENDS FLUSH WITH THE BEAM (OR YOUR KNUCKLES WILL SUFFER).
BEAMS WHICH ARE TO TRAVEL MUCH MAY BE HOLLOWED ON THE BELLY TO SAVE ON WEIGHT AND SPACE.
ROUND BEAMS ARE OKAY, BUT ARE HEAVY AND MORE LIABLE TO CHECK.
IF THE WOOD IS OF STRAIGHT GRAIN, IT SHOULD BE EASY ENOUGH TO SPLIT IN HALF.
SPLITTING BEAMS
SPIRAL GRAIN (DON'T BOTHER)
STRAIGHT GRAIN ☑
THE BARK OF THE TREE, IF EXAMINED CLOSELY, WILL USUALLY REVEAL THE NATURE OF THE GRAIN.
HARDWOOD WEDGES
STRAIGHT TAPER
TOO MUCH BELLY
BEVEL THE TOPS OF STAKES.

-*As* an *upright beam,* stood upright and leaned against a tree, building, or what have you.

photo courtesy of Arizona State Museum, The University of Arizona

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Western Apache woman using an upright beam to scrape a hide near Bylas, sometime in the 1920's.
In this photo, the tanner is shifting the skin on the beam in order to facilitate the scraping. Note the scraping tool, a drawknife, is dull enough to grasp by the blade (so should yours be).

We have used the waist beam almost exclusively and like it better than the upright beam because the weight of the body can be thrown into the work at hand. The upright beam requires more of the work to be done with the upper body.

Our current favorite waist beam is a half log of Big-Leafed Maple, 8" wide and 6' 3" long. If a shorter beam is used, the angle will be steeper, requiring that the worker lean over more at the waist. We greatly prefer the shallow angle that a longer beam offers, but did once, for about a years worth of tanning, use a very short, narrow beam of ash that was much too hard. We're not sure why we did it, probably just inertia. Once we switched back to a longer, wider, softer beam, we felt really lame for having used a miniature for so long. Still, it did work! So, don't get discouraged if you think that you can't find a perfect beam. Just try one out. You can always switch later.

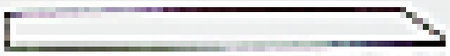
The working surface of a hide beam should be dressed periodically to keep it very smooth. The best tool for dressing beams is a spokeshave. In lieu of a spokeshave, a drawknife or knife, very sharp and carefully used, will suffice.

A tarp laid under the beam will help in keeping the skin clean and make for easier clean up.

SCRAPING TOOL: This tool will be used for fleshing, graining (scraping the hair side of the skin), and membraning (re-scraping the flesh side). Many objects can serve this purpose, but a good tool will make your work much more efficient and enjoyable. Bone scraping tools are covered in Chapter 25, Field Methods.

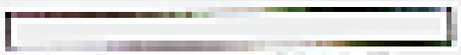
The length of the tool, including handles, can fall within a pretty wide range: say, from fourteen to twenty six inches. Tool length is really a matter of personal preference more than any-

BEVELS FOR SCRAPING TOOL EDGES

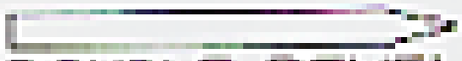


SMALL SECONDARY BEVEL
-OUR FAVORITE FOR PLANER BLADE TOOLS-

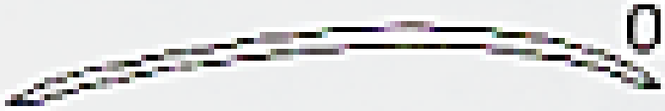
NO SECONDARY BEVEL
-GOOD, BUT HARDER TO SHARPEN THAN ABOVE.



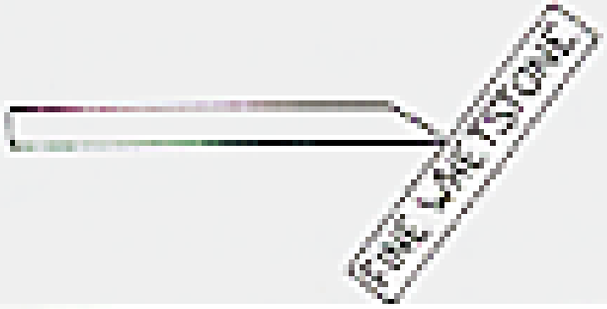
SQUARE EDGE-OK, BUT DIFFICULT TO SHARPEN.



DOUBLE BEVEL-COULD WORK BUT NOT PREFERRED.



OLD WORLD TANNING KNIFE
-WORKS WELL FOR US.



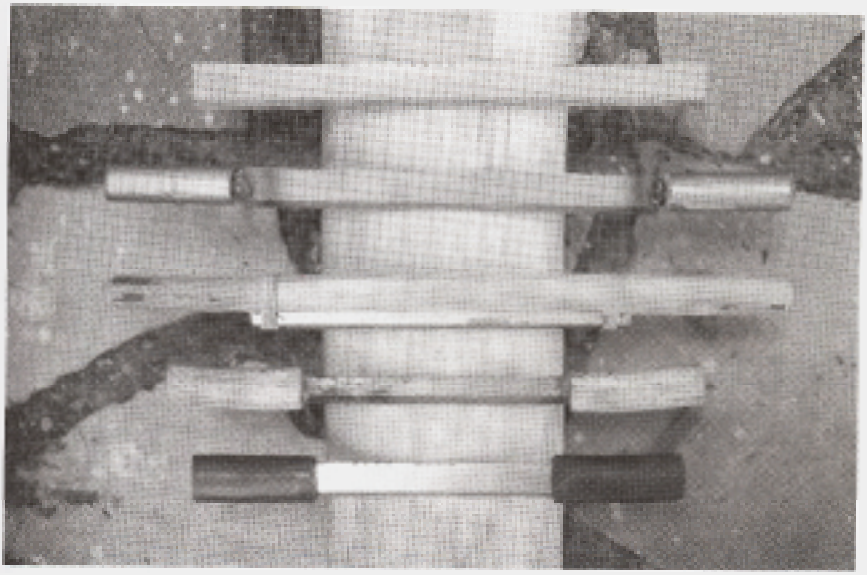
DULL TOOLS THIS WAY UNTIL THEY WILL BARELY SHAVE THE THUMBNAIL WITH PRESSURE.

thing else. A tool of twenty inches should be very usable for almost anyone. The working edge of the tool should be no less than seven inches long, and can be up to around fourteen inches. We prefer tools about seventeen to twenty-two inches in overall length, with working edges of ten to twelve inches.

The tool should be single-beveled, the bevel being uppermost when the tool is in use. An edge squared off at forty-five degrees can work very well, but we've come to prefer a beveled edge.

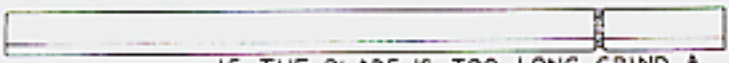
Discarded *planer blades* can make very good scraping tools. Industrially, they are used in machines for sizing and finishing lumber at saw mills, cabinet shops, and other such places. Once they've been sharpened too many times, they are disposed of as scrap metal. Planer blades are made of very hard alloy steel that rarely requires sharpening.

Planer blades can sometimes be acquired from the lumber mills that use them, machine shops which sharpen them, or from metal scrap yards. If you can get one from such sources, it's usually cheap or free. Look in the phone book under saws, machine shops, cabinets, metal, recycling, and lumber mills. The blades can also be purchased new but are very expensive.



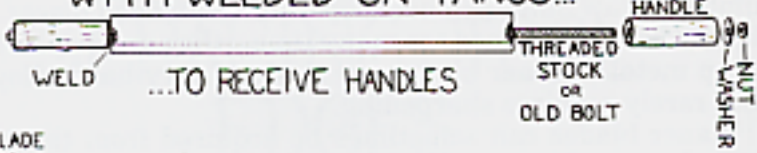
Wet-scraping tools made from discarded planer blades.

PLANER BLADE SCRAPING TOOLS

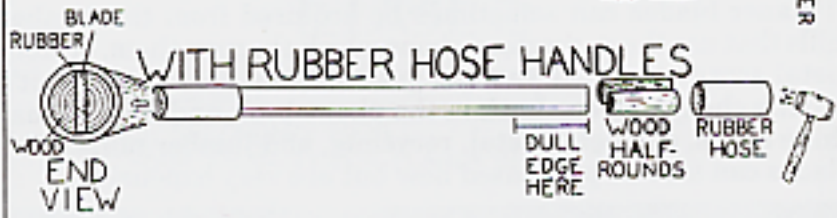


IF THE BLADE IS TOO LONG, GRIND A DEEP GROOVE ON BOTH SIDES UNTIL IT WILL SNAP EASILY ON BENDING.

WITH WELDED ON TANGS...



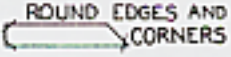
WITH RUBBER HOSE HANDLES



BLADE SET INTO SLOT...

ELK ANTLER HANDLES

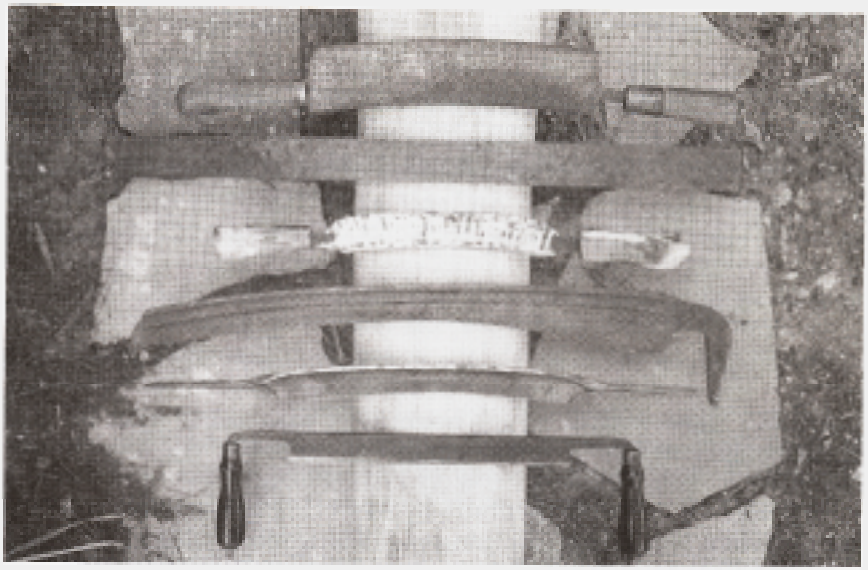
PITH SHOULD BE THE SAME DIAMETER AS WIDTH OF BLADE



-ANTLER HAS A SPONGY CORE OR "PITH" INTO WHICH A METAL BLADE CAN BE SET MORE OR LESS PERMANENTLY. ELK ANTLER IS USUALLY THE MOST SUITABLE FOR THIS PURPOSE.
-BOIL THE SHAPED HANDLES FOR 15 OR 20 MINUTES AND POUND ONTO THE BLADE ENDS. WORK QUICKLY IN ORDER TO BE FINISHED BEFORE THE ANTLER COOLS. THE PITH CONTAINS GLUE WHICH WILL SET THE BLADE SOLIDLY AS IT COOLS AND DRIES.
-ALLOW TO DRY FOR A FEW DAYS BEFORE USING THE TOOL.

If you get a planer blade that is too long, measure off the desired length, and, using a power grinder, grind a groove on either face of the blade until it is thin enough to snap easily. (We really mean “thin enough to snap easily”, or it may end up in several pieces.) Next, put the end to be removed in a vice, turn your head, and pull.

Planer blade steel is really too hard to easily drill holes in; so, the handles can be made of cloth, wrapped on the ends and duct-taped; rubber hose, pounded onto the ends; wood, epoxied on; or elk antler. Also, tangs of mild steel can be welded onto planer blades to receive handles of wood or antler.



Some other wet-scraping tools and materials used to make them. (top to bottom): traditional European style w/concave blade, a section of leaf spring, a hand forged tool made from a leaf spring and hafted with antler handles, scythe blade, scythe blade forged on ends to form tangs to take handles, and draw knife (used only with an upright beam).

SHARPENING AND DULLING OF SCRAPING TOOLS

Any wet-scraping tool must be sharpened and then brought to an appropriate dullness. The edge should be beveled only on one side; the other side should be left perfectly flat. If there are any nicks or rust pits in the steel, remove them completely. Avoid using an electric grinder if possible. A tile can be effective on milder (i.e. softer) steels but will not work on planer blades. For planer blades, use a sanding belt (you probably don't have one), a diamond sharpener (this is not a tool for sharpening diamonds), or a very coarse sharpening stone (takes a long time).

Bring the tool to enough of an edge to easily shave material from your thumbnail. There is no need to get it sharper than this, but you should be sure that it is sharp up and down its entire length and that there are no nicks or pits on the edge. If you feel that sharpening is beyond your capabilities, refer to the knife sharpening section at the end of this chapter.

Now, the tool is too sharp and must be dulled. Use a medium to fine whetstone. Hold the stone perpendicular to the edge, and run it up and down the full length. Dull the tool a little, then test the edge on your thumbnail as before. We dull our tools until they will not shave the thumbnail, or, if so, then barely.

People who are lacking in strength or have serious problems with tendonitis, carpal tunnel syndrome, back pain, and the like might do well to use a sharper tool. Keep in mind, though, that if the tool is too sharp, the scraping will not be done as thoroughly for fear of cutting the skin, and the quality of the finished buckskin will be compromised.

Beginning tanners often make the mistake of using a scraping tool which is either too sharp or too dull.

CABLE: The cable is our most used accessory to the softening process. The skin is pulled and rubbed against the cable to soften and fluff it. Several things can be used for this purpose. Native Americans on the Great Plains used a cable of twisted buffalo sinew or rawhide.

A ***rope*** can be used, but we don't think ropes work well. The rope twists and untwists a lot during the buffing; thereby, wasting much of your work energy spinning a rope. Also, be warned that we've melted through smaller plastic or nylon rope when buffing vigorously.

Baling wire (as in wire used for baling hay) is another possibility, and we would choose it over a rope. The one problem we have with baling wire is that it is smooth and, thus, has little texture to break up the crust on the flesh side of the skin. The thinness of the wire does make up for this shortcoming to some degree.

Bicycle or ***snare cable*** works well but does not last very long before fraying and breaking.

Our definite favorite, so far, is one eighth to one-quarter inch ***galvanized wire rope,*** which is available in hardware stores Stainless steel cable has proven too brittle. Buy a piece at least five feet long, along with the clamps to make a loop on each end (called wire rope clamps), and the "thimbles", which are small teardrop shaped loops of metal. The cable can be attached to a tree or strong post, from floor to ceiling, or whatever you can make work. It should be stretched tightly; since, the looser it is, the harder it will be to use. Wire rope is heavily galvanized and can sit out in the weather without rusting (although it may form a bit of zinc oxide residue which should be rubbed off with a cloth before working skins on the cable). It is also a good idea to crimp some small copper tubing over the frayed cut ends which are otherwise quite sharp.

PUMICE: The pumice is used to "sand" the skin during softening. It is not absolutely necessary to have, but we think it is a great boon to the tanner and is easy enough to acquire. Do yourself a favor, get some. It can be gathered in the field or purchased from a hardware store. Pumice is like obsidian (volcanic glass) which cooled in a foamy state; the size of the air bubbles determines how coarse or fine the pumice is. If it is too soft and fine, it will not work well or not work at all. If too hard and coarse, the sharp edges will slice the skin and mar the surface permanently. Finer pumices can be used on the flesh side of the skin, while some of the coarser grades can only be used on the hair side. We suggest buying your first piece of pumice, unless you have easy access to a natural source. Most of the

ones we've purchased have been of a good consistency for use on the hair side of the skin. If the one you end up with cuts fine lines in the surface of the hide, don't use it, but at least next time you'll have an idea of what to look for. We have noticed that dark streaks in the pumice indicate hard lines of glass which can cut the skin but can't say whether this is always true.

The dust from pumice is basically fine glass dust. It isn't healthy to breath and could, like the breathing of any glass dust, lead to health problems; so, use pumice in a ventilated area.

BUCKETS OR TUBS: These are used for soaking hides and washing them between steps. The common, usually white, food service plastic bucket will accommodate most deer hides or even several, depending on their size. For larger skins and braining in batches, a bigger container is needed. We use eighteen gallon plastic tubs. Avoid metal buckets or barrels, unless they are either enameled or of stainless steel.

WRINGING STICKS: These are used at various stages to wring the hides out, ridding them of excess moisture. They should be around two and a half to three and a half feet long and about an inch or two in diameter. Make them of some tough, stiff wood that can take a lot of stress, as you will be applying considerable force to them. Old axe and shovel handles work well. If "wild" staves are used, be sure to remove the bark completely. Some barks will stain the skin permanently.

Skins can be wrung with two of these sticks, or with one. If one wringing stick is used, the other end of the skin is wrapped around a horizontal or vertical pole. See Chapter 18, Braining, for how-to on wringing.

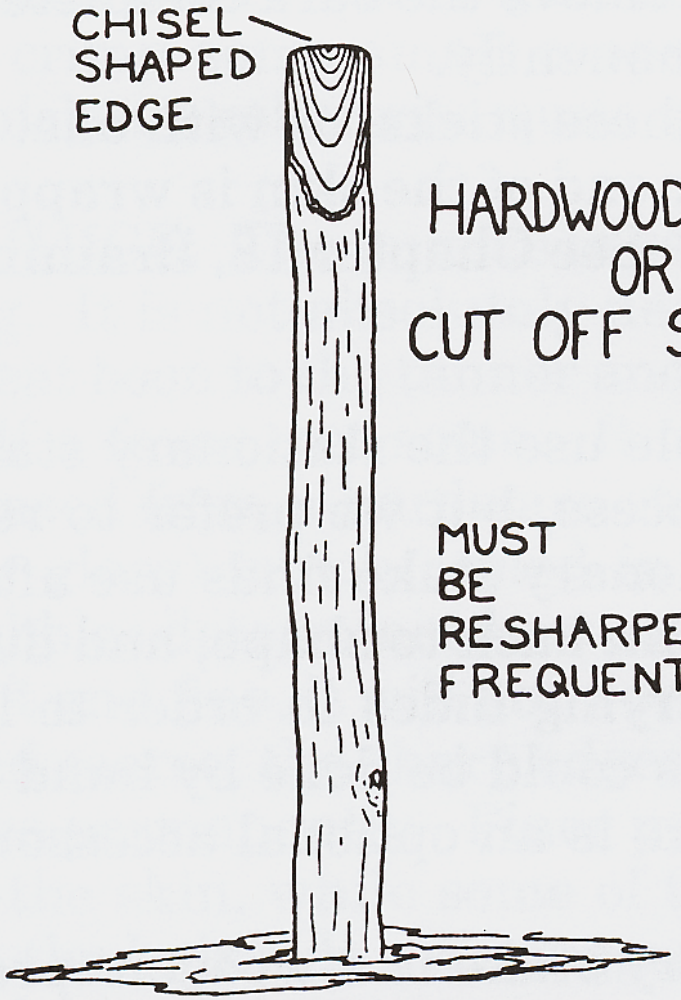
STATIONARY STAKE: Some people use the stationary stake quite a lot during the softening process, but we prefer to rely more on the cable. For us, the stationary stake finds use after wringing, to open and stretch the skin back to shape; and during braining, to open the fiber of drying hides in order to increase brain penetration. All of this could be done by hand or on the cable; so, the stationary stake is an optional accessory. Still, we highly recommend it.

In its simplest form, the stationary stake is a wooden (preferably hard-wooden) stave or post set into the ground, the up-

per end being waist-high and sharpened to a chisel edge. It can also be made as a portable, freestanding unit with some kind of base. In either case, a dull metal blade set in the top is somewhat better than plain wood, since the wood rounds off quickly and must be resharpened to remain effective. Some people use an old hatchet or axe head clamped into a vise. The "blade", as we call it, should be very dull and should have no sharp corners. You should be able to pull the skin across it, hard in any direction, with no fear of a cut occurring. That, at least, is how we keep ours.

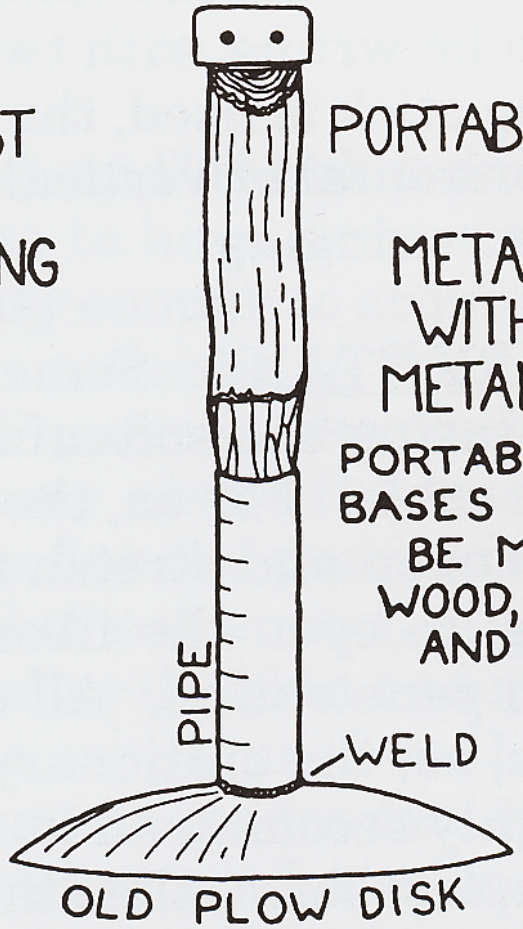
(Actually, this is a classic example of where you shouldn't necessarily listen to what we tell you. We think we know what we're talking about most of the time but haven't tried everything and can't qualify everything just so. Our stake works fine for us very dull, but we have never used a significantly sharper one. If it's in your nature to tinker with things, then try something different. It may work better.)

STATIONARY STAKES



HARDWOOD POST
OR
CUT OFF SAPLING

MUST
BE
RESHARPENED
FREQUENTLY



PORTABLE STAKE
IN
METAL BASE
WITH DULL
METAL BLADE

PORTABLE STAKE
BASES CAN ALSO
BE MADE OF
WOOD, CEMENT,
AND SO ON.

APRON: A plastic apron will help to keep you and your clothes clean while working at the beam. A plastic garbage bag tied around the waist is a passable substitute, depending on how fastidious you are.

SOAP AND WATER: As mentioned in Chapter 6, Health Concerns, this is an important tool to the tanner. If you skipped over that part, go back and read it.

STAKES: These are simple wooden stakes. We use them to stake hides out above the ground while they are drying and to fix beams in place to keep them from shifting around during use. It is not really necessary to stake skins out to dry, but a skin which has been dried this way is flat, easier to deal with, and takes up less space. We would suggest forgoing it at first for most people. If you plan to use a waist beam, you should make a dozen or so stakes anyhow, since they are used to hold the beam in place. We also use these same stakes for setting up our wall tent, drying sheets of rawhide, and making parfleche (painted rawhide containers).

Our stakes are made from wild-crafted staves. We prefer hard woods because they last longer, but we'll use almost any wood if it's convenient and straight enough. An ideal size is probably about twelve inches long and one inch down to three quarters of an inch in diameter, but we're not that picky. One end is sharpened, and the other, the top part that's pounded on, is trimmed and beveled with a knife to remove the edge. Beveled stakes last much longer than un-beveled ones. Use a wooden mallet, since a pounder of metal or stone will destroy wooden stakes very quickly.

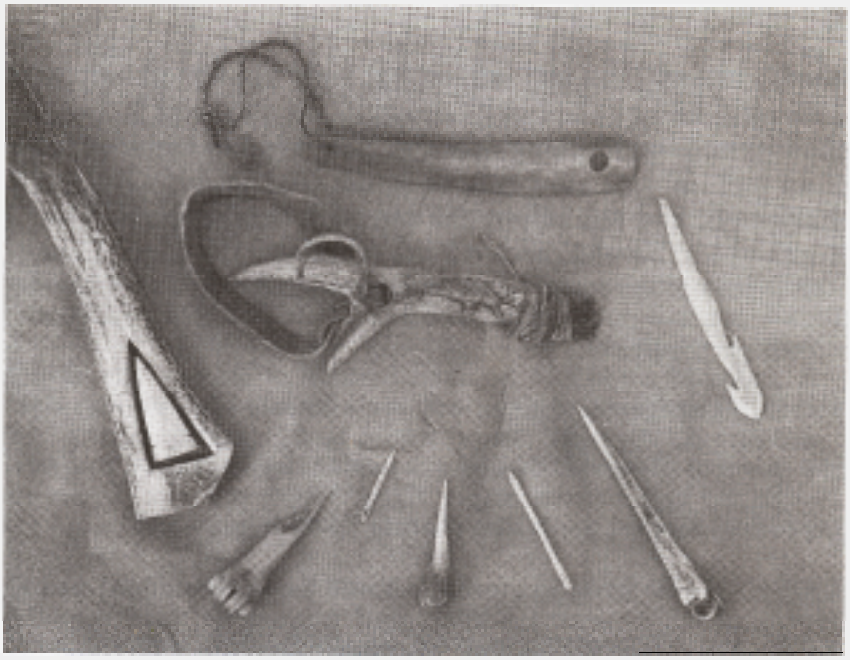
A frame of wood can be used instead of stakes (the skin is tied into the frame to dry), but it's a hassle and we just don't like doing it. Another option would be to simply nail the hide to a piece of plywood. Nailing is easier than staking, but even though we use bizarre, super hard, space age steel to scrape our hides, we just don't like nailing them to plywood.

KNIFE: Aside from skinning, a knife finds occasional use for trimming edges, cutting slits, and numerous unforeseeable tasks. There are a plethora of crappy knives on the market, ranging from mediocre to worthless, and they're not all

inexpensive. Many knives are overpriced for their quality or usefulness. The shortcomings of knives include: poor materials (especially steel), poor construction and/or construction design, and stupid blade patterns. Some knives are designed or suited only to a particular use or uses.

If you are not using a knife for some specialized set of tasks, it is in your interest to procure one which is suited to a wide variety of uses. There is no perfect knife which will suit all purposes; any knife that is used for a wide variety of needs will fall a little short of ideal at some tasks. The photo of tools in Chapter 11, Skinning (p.70), shows some durable, inexpensive knives that are suited to a wide variety of purposes.

BRAINS AND SMOKING MATERIAL: Aside from the hide itself, these are the only materials that you will need in brain-tanning. Brains will be discussed in Chapter 18, Braining; smoking materials in Chapter 20, Smoking.



Some bone and antler tools.