

The Essentialist

January 28, 2010

Bigfork's Essential Stuff Newsletter -- Bringing People Together
A Publication of the Essential Stuff Project, Bigfork, Montana

TRADITIONAL BRAIN TANNING

by Fran Wade



photo by Edd Blacker

Intro:

Fran lived off-grid for 18 years -- no electricity, no phone, no indoor plumbing. She and her husband lived very simply, making most everything by hand, with materials available.

There are many ways to tan hides; using the animal's brains works well. Every animal has sufficient brains to tan it hide, so the necessary material is on hand when you butcher-out your animal.

Discussion: *It is the lecithin in the brains that soften the hide. If you don't have the animal's brains, any animal's brains will do. You can purchase these from meat processing businesses such as Lower Valley Meats, if you arrange ahead of time.*

Precaution: do not use the brains of an animal with Chronic Wasting Disease, as the disease agent is found in the central nervous system tissue. Caution should be used with any animal that exhibits strange behavior, is ill or found dead from no obvious cause, as some diseases can be contracted from handling diseased tissue. Any dead animal found, not showing an obvious cause of death, should be buried.

Tools and Equipment

Fleshing knife	Frame	Scraper	3/16" steel cable/paddle
Fleshing beam	Cord	Awl	2 wire rope clamps, 3/16"
	Smoker	Nails (Optional)	

Steps in Tanning Procedure

Fran used a previously tanned deer hide, with the hair left on, to demonstrate several steps of this process. For example, Salting: still-shot from *Flip Video*, by Sally Janover:

<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861028>

And still shot from *Sally's Flip Video*, of Fran's tools:

<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861162>

Fleshing

Once you skin out the animal, you need to remove the fat and meat still adhering to the hide. You will need:

- Fleshing beam, such as a peeled log, about 12" in diameter, braced against a stump at about a 45 degree angle, and about waist high. Or planed lumber (see sketch).
- Fleshing knife: should be a dull knife so it won't cut the hide, but just peels off the tissue.



Fran's Dull-Blade
Fleshing Tool

Lay hide out on the fleshing beam, hair side down, and using your fleshing knife, push meat and fat away from you on the hide. Protect your clothes with a leather or plastic apron as you will be leaning against the hide at the top of the beam to hold it in place while you work.

Hold the blade pointing away from you and push down toward the bottom of the beam. You continue to work the hide until all the meat and fat are removed. (I always kept a couple of small rocks at hand to kill any ticks that were attached to the hides.)

Once you have cleared it all off, you are ready either to begin the tanning process or to salt the hide down for storage. If it is particularly bloody or caked with dirt, wash it off first.

Salting

If you cannot tan the hide within a day or so, it is best to salt it down, to remove excess moisture. Use a fine grained salt without iodine. During this process, be sure you put your hides where animals cannot get to them.

Discussion: *Water-softener salt is not a fine-enough grain, so would have to be broken up into a fine grain before it could be used.*

1. Lay the hide out on a flat surface (hair side down), and pour a good amount of salt onto the center of the hide (the flesh side). Plan on about a pound of salt per pound of hide. Rub the salt onto the hide, being sure to cover every area of exposed skin.
2. When fully salted, fold the hide, flesh to flesh, roll it up and lay on a slanting board to drain overnight. The salt will draw excess moisture from the hide.
3. Next morning, shake off the wet salt, lay out the hide again, and re-apply a fresh layer of salt to the hide.
4. When it is finished draining, lay the hide out on a flat surface to dry in a dry area. This can take a couple of days, depending on the weather. Do not dry in direct sunlight or where temperatures are very high.
5. Dried hides can be stacked in a dry place until you are ready to tan them.

When ready to begin tanning, soak the hides to desalt & return them to a pliable state. If tanning a hide with the hair on, try to remove the salt with the least amount of water soaking the hair.

Fran's note: *I have no personal experience with salting down a fur before tanning.*

Removing the hair

If you are making leather, from say a deer or elk hide, you will need to remove the hair.

- Wet method: Soak hide in water, changing it every few days, until the bacteria builds up on the hide, causing the hair to “slip” or fall off. When it is pulling out easily, put hide back on the fleshing beam and scrape off the hair. Then stretch it on a frame and allow it to dry. This can be messy, and there is always the danger of possible infection if you have any open cuts on your hands and you come in contact with the wet hides, unless you wear rubber gloves.
- Dry method: This is easier, and usually quicker. After fleshing (if doing the tanning on a fresh hide), or after soaking and de-salting of a preserved hide, stretch hide in a frame to dry. When dry, use your scraper to remove the hair, scraping in the direction the hair grows. As the scraper is sharper than the fleshing knife, care must be taken to avoid cutting the hide; pay attention to what you are doing, take care in the angle of scraping, and TAKE YOUR TIME. As with any task, practice improves the product, and speed is not a virtue.
- See Flip video still shot by Sally Janover, for photo of hides on frames (Fran’s husband in foreground):
<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861214>



Discussion: *It takes 4 - 5 hours to remove all the hair, as you must scrape carefully.*

Discussion: *Fran's scraper, shown above, is made from pipe and scrap metal. The blade is quite sharp.*

Removing the hair exposes the thin membrane of the epidermis. Generally the hide will be a light brown, smooth surface. Use your scraper to remove the epidermis. This gives you a soft, suede finish to both sides of the hide. (Commercially tanned hides usually leave this on, for a grain side and a suede side). Again care is needed to remove this without cutting the hide. When you have removed this smooth brown film, the hide will be white and lightly fuzzy. Remove hide from frame and moisten so it is again pliable. You can also use sandpaper to improve the fuzzy texture.

Demonstration: *Fran brought sample of brain-tanned leather with suede surface on both sides (epidermis removed), and of commercially tanned leather with a suede side and a grain side (epidermis not removed). The grain side has a soft sheen.*

This flip-video still shot, shows a buckskin jacket made by Shadowhawke, with the outside as the grain side, and the inside is the suede side:

<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861009>

and another Flip Video shot of a commercially-tanned sample: [Commercially-tanned leather sample](#) (Flip Videos, by Sally Janover)

Tanning:

NOTE: If will tan the hide right after butchering, keep the raw brains in your refrigerator (or ice box) until it's time to cook them. If not going to tan right away, freeze the raw brains.

1. When ready to tan, prepare the brains: Cover brains with water and cook in a small pot, just until they turn white. Then puree to a paste:
 - With a blender, put cooked brains in blender and whirl them into a paste. Use enough of the cooking water to make a smooth paste, but not runny.
 - Without a blender, you will need a piece of nylon screening. Wearing rubber gloves, squish cooked brains through the screen to produce the smooth paste.
2. Work brain paste into hides: Lay drained hide on flat surface; rub brain paste into entire hide:
 - both sides if you are making leather;
 - only the flesh side if doing a hide with the hair on. Try to avoid getting the brain paste into the hair.
3. When finished, fold hide flesh side to flesh side, roll up, and put into a bucket or container in a cool place for about 3 days.
4. Remove from container, wash hide clean of brains, ring out and hang over a line, fence, or board until it dries out a little. With a fur, try to wash off the brains without drenching the hair. For deer and elk hides, an old hand wringer works very well to help remove the bulk of the water. The thinner the hide, the more quickly it dries so keep watch on it so it does not dry too much.
5. When hide is still moist and pliable, begin the Breaking Down process.

Repair Tears/Holes in Hide

Before you can begin the breaking down process, inspect hide for small holes or tears. Sew them up, using real or artificial sinew to prevent hides from being ripped further, during the softening (breaking-down) process.

Discussion: *Artificial sinew is made of waxed nylon, and is much stronger than regular thread. Real sinew is a "royal pain to work with," according to Fran.*

Sinew is made from broken-down animal tendons or ligaments, the tissue that connects muscle to bone, or bone to bone. See References section for more on the making of real sinew thread.

Then work and stretch the hide while it dries, to keep its fibers from returning to the natural alignment, and hardening back into raw hide.

Discussion: *This process takes 5 - 6 hours of nonstop labor. If you stop for a break, it will harden back, and you will need to repeat the tanning and breaking-down process.*

Breaking Down (Softening the Hide)

During the tanning process, the lecithin in the brains dissolves the glue holding the hide's fibers together. If you keep the hide stretched while it dries, the leather remains soft and pliable after it has dried. When the hide is fully dry, and soft, you have leather.

Two methods for stretching and drying, to soften the hide:

▶ Pulling on a cable:

Demonstration: *Fran demonstrated this setup and technique with the assistance of MonaRae to hold the "post" upright. See Flip Video still shot (by Sally Janover):*

<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efee9f4/video/9860949>

1. Secure an upright post in the ground. Fasten the 3/16" wire clamps to the post, one near the top, and the other about 4' below the first. Attach the 3/16" steel cable to the two clamps, in a loop with about a foot and a half slack in it.
2. When the hide is damp, but not dry, slide it through the loop in the cable and, using both hands, pull it back and forth in a sawing motion.
3. Continually move it along the length and width of the hide so all areas are equally stretched. This must be continued until the hide is dry, and can take up to 5-6 hours, depending on how warm the area is and how wet the hide is when you begin. If you stop the stretching, for more than a few minutes, parts of the hide can dry hard and you will need to re-dampen the hide and begin again.

▶ Re-stringing in the frame, and using a wooden paddle:

1. When lacing a hide into a frame, take care not to stretch it so tightly, that you pull it out of shape.
2. It will shrink as it dries, so pull it taut but not tight, or it will either tweak out of shape or rip out the holes you have made with the awl. If putting back in a frame, start lacing it in while it is a little more damp than if working on the cable, to give yourself time to get it ready before it begins to dry.
3. Now, take the paddle and press it against the hide, stretching it. Work the entire hide, systematically so that every area gets equal pressure. Remove it from the frame just a little shy of totally dry, and work it on the cable to make it a little softer.

Photo of Fran's stretching-frames (*Flip Video, by Sally Janover*):

<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efee9f4/video/9861214>

Smoking:

The hide is now soft and white, and vulnerable to moisture. An unsmoked hide will return to the rawhide state if it gets wet, so it is necessary to water-proof it with at least a little smoke.

Different woods produce different colors in your smoked hide. Do not use alder bark unless you want a lime green leather. In Fran's experience, the wood of deciduous trees is best.

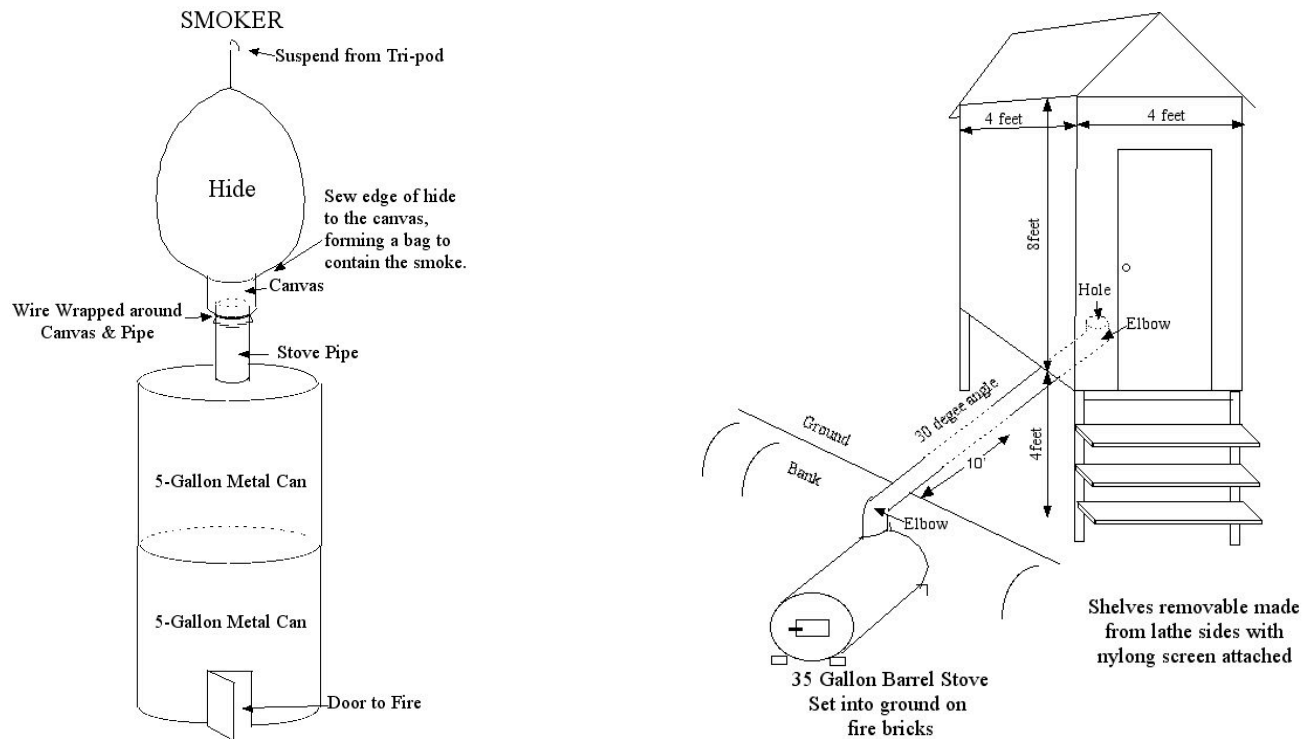
Evergreens, such as pine, are too pitchy. The following are abundant here:

- Cottonwood bark gives a golden color;
- Tamarack (Western Larch) bark gives a light tan.

Remember, you do not want to cook the hide, you want a cool smoke. It helps to keep a spray bottle of water at hand to douse the flames and maintain just the coals with the smoldering bark. As with smoking meat, you can soak the bark so it smolders more than it bursts into flames.

- ▶ If you have a smokehouse: Hang hide inside and smoke it to the desired degree of color.
- ▶ Without a smokehouse, rig a simple device with two 5-gallon metal cans, a piece of stove pipe and a length of canvas.

Sketches: Simple Smoker, and Fran's Smokehouse



See also: [Sketches: smoker-smokehouse dig FWade version 2](http://essentialstuff.org/wp-content/uploads/2010/01/smoker-smokehouse_dig_FWade_version_2) (pdf, updated) for larger versions. (http://essentialstuff.org/wp-content/uploads/2010/01/smoker-smokehouse_dig_FWade.pdf)

Sources of Materials

Powder Horn, Kalispell

References

Chronic Wasting Disease web site: www.cwd-info.org

Sinew:

www.sparrowcreek.com/Sinew.htm for a photo discussion of making sinew into thread; or "[Charlie Tadano, bowyer, demonstrates sinew thread technique](http://www.youtube.com/watch?v=EQMAgngpLLM)," a 1 minute video (www.youtube.com/watch?v=EQMAgngpLLM)

Books:

"How to Tan Skins the Indian Way" by Evard H. Gibby, Eagle's View Publishing, Liberty UT
 "Deer skins to Buckskins: How to tan with natural materials" by Matt Richards, Backcountry Publishing, Rexford, MT

NATURAL vs CHEMICAL TANNING, and SAMPLES OF LEATHER GOODS

by Shadowhawke



photo by Edd Blacker

Shadowhawke is the owner of Buckskin & Buffalo, a retail shop in Bigfork, where Hwy 209 meets Hwy 35. She is Native American and a 4th generation leather worker, originally from the northeastern part of our country.

Native Americans try to use all parts of the animal: muscle and organ meats for food, bones for tools (such as scrapers for the tanning process), antler for tools and decoration, sinew for cording, brains for tanning, hair for stuffing pillows and cushions, and hides for many aspects of daily living. Rawhide is used for utensils, bowls, vases, canisters and water containers. Tanned hides are used for making clothing, blankets and other household items.

Discussion: *Parfleche, containers for storage of food, water, and household items, are made from rawhide. They are usually seamless, but if seams are used, they can be sealed with pitch to water-proof them.*

There are many ways to tan hides naturally, including brain, vegetable, and bark tanning. Industrial tanning is quite toxic and not sustainable. While she does use commercially tanned leather for some of her products, she looks for local sources of hides, many of which use natural methods.

She brought many beautiful samples of handmade leather goods, most made by her, and passed them around so the audience could touch and examine them.

- **Mittens:** The top is from beaver fur (very soft), and the palm of elk hide. Sewn together with artificial sinew, but real sinew could also be used
- **Gauntlet:** Sample is 70-years old and still in excellent shape. Made of brain-tanned suede, and handsewn. Very durable. See flip video still shot by Sally Janover: <http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861284>
- **Bags and pouches:** Shadowhawke brought several samples including an impressive bag of buffalo hide, with the hair on the outside. See flip video still shots by Sally Janover: <http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9860983>
<http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861009>
- **Pillow** of tanned buffalo hide and stuffed with buffalo hair. Sewn with artificial sinew and strips of tanned hide; decorated with beads. See flip video still shot by Sally Janover: <http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861055>
- **Moccasin slipper boot:** tanned moose hide, with buttons of deer antler. This hide is very thick, about 3/8".
- **Gaiter (legging)** of buffalo leather, with wet-twisted fringe. Gaiters protect the legs from brush, instead of wearing tall boots. See flip video still shot by Sally Janover: <http://sharing.theflip.com/session/8bfa7cb6baf6dde6a1945a05efeae9f4/video/9861107>