

# Primitive Survival Skills

KNOW THESE HARDCORE TECHNIQUES  
AND YOU CAN MAKE IT THROUGH  
YOUR WORST OUTDOOR NIGHTMARE  
**BY KEITH McCAFFERTY**

● LAST NOVEMBER, MY SON, TOM, AND I weathered a snowstorm in Montana's Crazy Mountains while hunting elk. At the height of the storm, when whiteout conditions made it difficult to see where we were going, I found a sheltered spot and gathered some downfall to build a wickiup, a primitive half-tepee. I sparked a fire by glancing the back of a knife blade against a piece of flint and lighting some bark tinder. With shelter and warmth, we rode out the storm, eating sandwiches and talking elk.

At the same time, a 49-year-old hunter was lost and in serious trouble in the Absaroka Range a few dozen miles to the south. Rescuers with search dogs unraveled a 6-mile scent trail the man had left before finding him collapsed on a logging road, hypothermic and barely breathing. Despite their attempts to warm him, he died six hours later. Apparently he had been unprepared for the storm, but it was not a terribly cold day, and had he been able to build a fire or construct almost any kind of primitive shelter before sweating through his clothing, this tragedy might have been avoided.

Primitive is the key here. Our ancestors depended on three basic skills to survive: They knew how to shelter themselves from harsh climates; they were able to spark fire to heat those structures; and they could trap and gather food. Sadly, many of their skills have been forgotten.

Most sportsmen rarely find themselves in life-or-death situations. But it can happen, and not just when you're hunting or fishing. What if your car broke down in the middle of nowhere, or your plane had to make an emergency landing in the wilderness? What if all you had was a knife and your wits? Could you survive the way your ancestors did? Read this, and you just might make it.

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# Shelter

PRIMITIVE STRUCTURES FALL INTO THREE CATEGORIES: BODY-HEATED SHELTERS; OPEN STRUCTURES; AND ENCLOSED ONES HEATED BY INSIDE FIRE. EACH HAS ITS ADVANTAGES

## Body-Heat Shelters

In its simplest form, a shelter is nothing more than a shell that traps a pocket of dead air warmed solely by body heat. In tree belts, such shelters are constructed of decomposing leaf litter and other organic debris; in barren, polar regions, they are made of snow.

### [SKILL 1] DEBRIS HUT

Heap up a big mound of duff and detritus from the forest floor, then excavate a pocket that is large enough to crawl into. After getting inside, partially block the doorway to minimize air circulation. If it isn't cramped and dirty, you've made the air space

too big for your body to heat it sufficiently.

### [SKILL 2] QUINTZE

Properly constructed, this poor man's igloo can be body-heated to above freezing on a 20-below day, higher if you light a candle.

**STEP ONE** Build up snow to a depth of at least 8 inches and pack it down to make a floor.

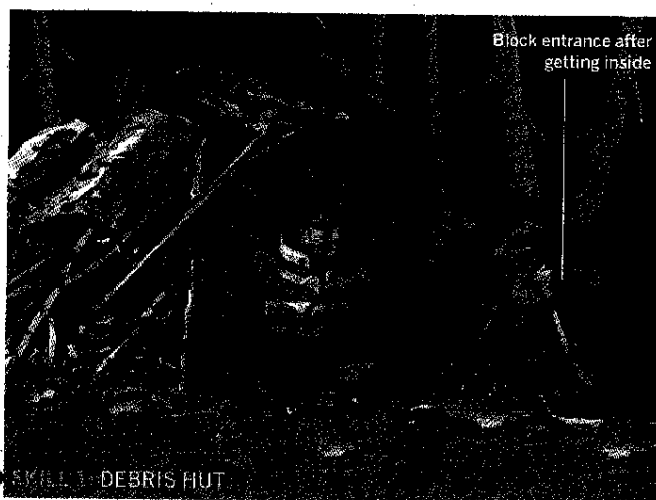
**STEP TWO** Heap loose snow onto the floor. Piling the snow over a backpack or mound of branches will let you create a hollow, which hastens the excavation process, but it isn't necessary. Let the snow consolidate for an hour or more, until it is set up hard enough to

**SNOW JOB:** DIG OUT AN OPENING THAT'S LARGE ENOUGH TO SIT AND LIE DOWN IN, SMALL ENOUGH TO RETAIN YOUR BODY HEAT.

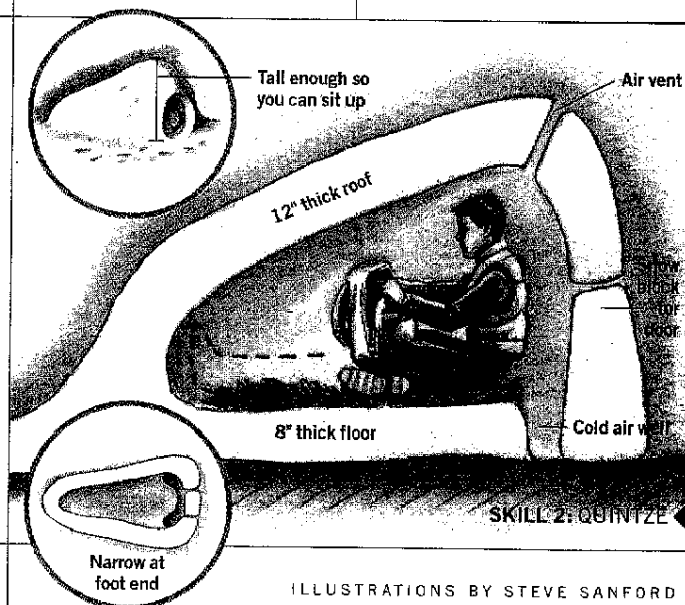
form snowballs.

**STEP THREE** Tunnel through the mound at opposite ends to dig out the center efficiently, fill in the unused en-

trance, and crawl inside to shape the interior. Ideally, the quintze should be narrow at the foot end, with a bed long enough to lie down



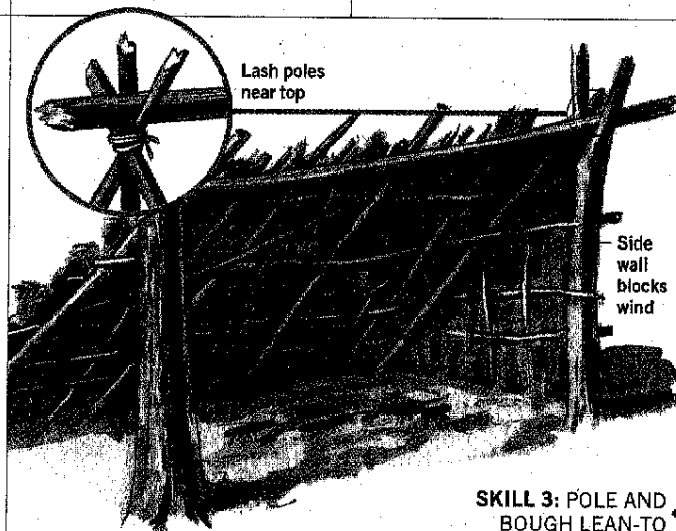
SKILL 1: DEBRIS HUT



SKILL 2: QUINTZE

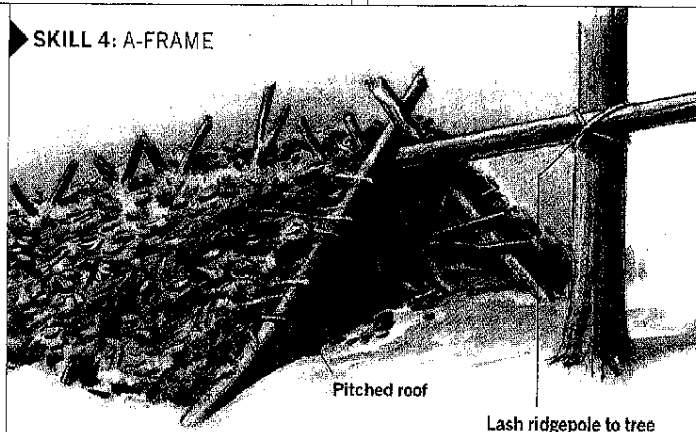


on, and just tall enough at the head end for you to sit up. The walls and roof need to be at least a foot thick (check this with a stick).



**SKILL 3: POLE AND BOUGH LEAN-TO**

#### SKILL 4: A-FRAME



**STEP FOUR** Poke out an air vent overhead and dig a well at the entrance for the cold air to settle into. Cut a snow block for a door. Glaze interior walls with a candle to prevent dripping.

### Open Shelters

Bough structures that reflect a fire's warmth are the most important shelters to know how to build. They can be erected without tools in an hour provided you are in an area with downed timber—less if you find a makeshift ridgepole such as a leaning or partly fallen tree to support the boughs.

#### [SKILL 3] POLE AND BOUGH LEAN-TO

One of the most ancient shelters, the single wall of a

lean-to serves triple duty as windbreak, fire reflector, and overhead shelter.

**STEP ONE** Wedge a ridgepole into the crotches of closely growing trees (one end can rest on the ground if necessary), or support each end of the ridgepole with a tripod of upright poles lashed together near the top.

**STEP TWO** Tilt poles against the ridgepole to make a framework. To strengthen this, lace limber boughs through the poles at right angles.

**STEP THREE** Thatch the lean-to with slabs of bark or leafy or pine-needle branches, weaving them into the framework. Chink with sod, moss, or snow to further insulate.

#### [SKILL 4] A-FRAME

The pitched roof of the A-frame bough shelter offers more protection against the wind than a lean-to and can still be heated by fire at the entrance. One drawback is that the occupant can't lie down parallel to the fire for even warmth.

**STEP ONE** Lift one end of a log and either lash it or wedge it into the crotch of a tree. Tilt poles on either side to form an A-frame roof.

**STEP TWO** Strengthen and thatch the roof as you would a bough lean-to. »

#### FIELD GUIDE

### NATURAL CORDAGE

Many plant materials, including grasses that resist breaking when bent and the inner barks of shrubs and willows, can make strong enough cordage to lash thatching onto shelters. Thin willow wands, flexible capillary tree roots, rawhide cut from animal skins, and sinew strands that encase animal muscle make stronger cord, suitable for snare traps, bowstrings, and bindings.



#### How to Make a Two-Strand Cord

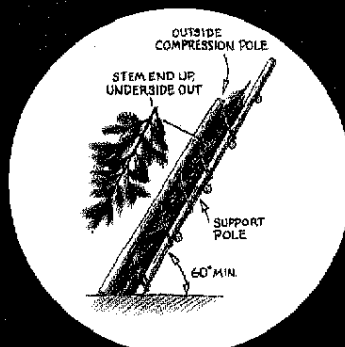
Holding the cordage material between your thumbs and first fingers, twist it to form a kink in the middle. Now twist each half separately in a clockwise direction, then pass them around each other in a counterclockwise direction as shown. (A strand can be composed of one or more fibers, depending upon the diameter of the cordage material available.) Weave in more strands for greater length.

## RAW MATERIALS

## Shingle and Thatch Weatherproofing

### Bough Thatching

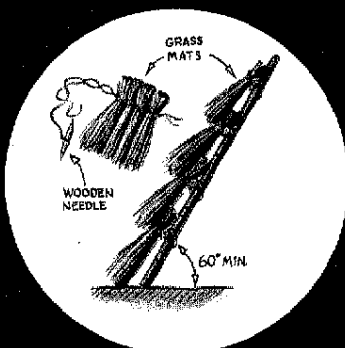
Overlay the framework with a mat of evergreen boughs oriented tips down, with the undersides of the needles facing out. For the best protection, compress the thatching with poles and pack over with snow. Pine and spruce boughs offer meager water resistance and are better reserved for the steeper walls of lean-tos and wickiups.



BOUGH THATCHING

### Grass Thatching

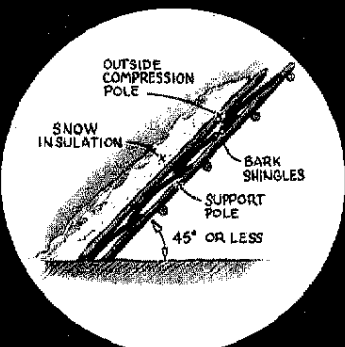
Suitable for dome-shaped shelters, water-resistant grass mats can be formed by sewing together bunches of similar size. (Longer grasses can be cross-hatched and woven; overlap the ends irregularly to make a continuous warp and weft.) Lash thatching to support poles with rope or natural cordage.



GRASS THATCHING

### Bark Shingles

Birch bark is one of the best natural materials for shingle making. Use it if it's available. When you're building a bark wall, make sure the bottom of each shingle layer overlaps the top of the row below it. Keep rows in place with poles and insulate over the top with moss or snow. The walls can be pitched at less than a 45-degree angle.



BARK SHINGLES

Weatherproof materials should be stacked onto the framework, then bound with cordage or held in position by more poles. Wall angle depends upon the thatching; the more porous the materials, the steeper the walls.

## Enclosed Shelters

These take more time to build than open shelters (at least three hours), but your efforts will be doubly rewarded. Not only can the shelter be warmed by a small fire, reducing the need to collect a huge pile of wood, but the firelight reflects off the walls, providing cheery illumination for sitting out a long winter night.

### [SKILL 5] WICKIUP

This forerunner of the teepee remains the quintessential primitive shelter—sturdy enough to blunt prevailing winds, weatherproof, quickly built for nomadic hunters, but comfortable enough to serve as a long-term home. It can be partially enclosed (my son and I made a half-open wickiup to sit out the snowstorm, with a fire built in front of the shelter), or fully enclosed and vented to permit an inside fire.

**STEP ONE** Tilt three poles together in tripod form and bind them together near the top. If you can find one or

## PRIMITIVE TOOLS

### Snow Paddle

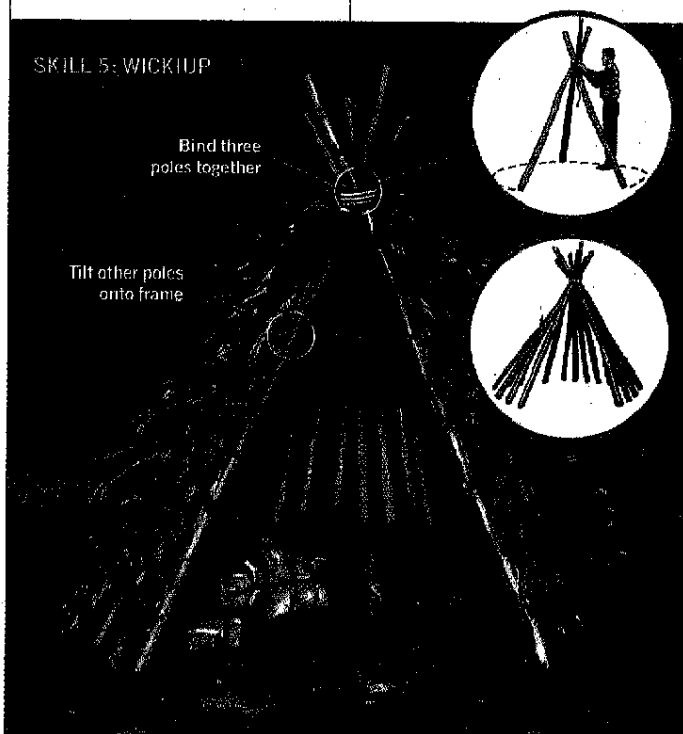
You can use snowshoes, branches, or your hands to dig snow for shelters, but a paddle is more efficient and you'll stay much drier during the process, which lessens the risk of hypothermia. To make one, carve a slab of softwood that's at least 3 feet long in the approximate shape of a curved canoe paddle.

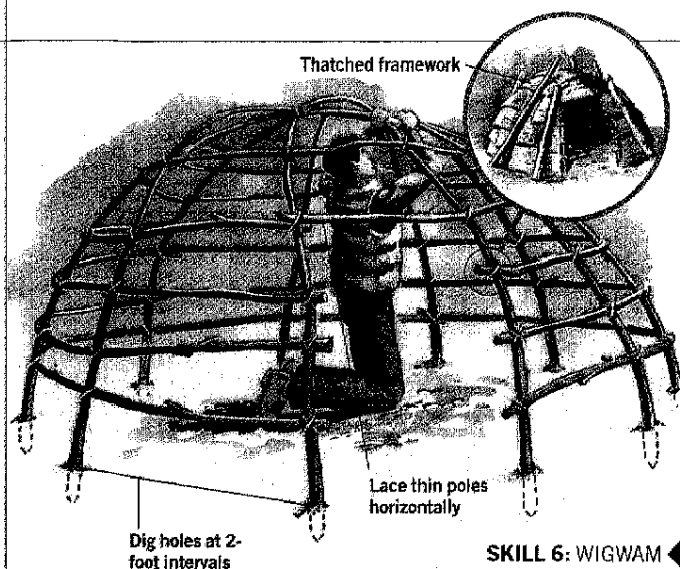


more poles with a Y at one end, tilt the others against the crotch, eliminating the need for cordage.

**STEP TWO** Tilt other poles against the wedges formed by the tripod in a circular form and thatch, leaving a

### SKILL 5: WICKIUP





front opening and a vent at the top for smoke.

#### [SKILL 6] WIGWAM

A complex version of the wickiup, this is built with long, limber poles bent into a dome-shaped framework to maximize interior space.

**STEP ONE** Inscribe a circle and dig holes at 2-foot intervals to accommodate the framing poles.

**STEP TWO** Drive the butt ends of the poles into the holes and bend the smaller ends over the top. Lash or weave the tops together, forming a dome-shaped framework.

**STEP THREE** Lace thin green poles horizontally around the framework for rigidity.

**STEP FOUR** Thatch the framework, leaving entrance and vent holes.

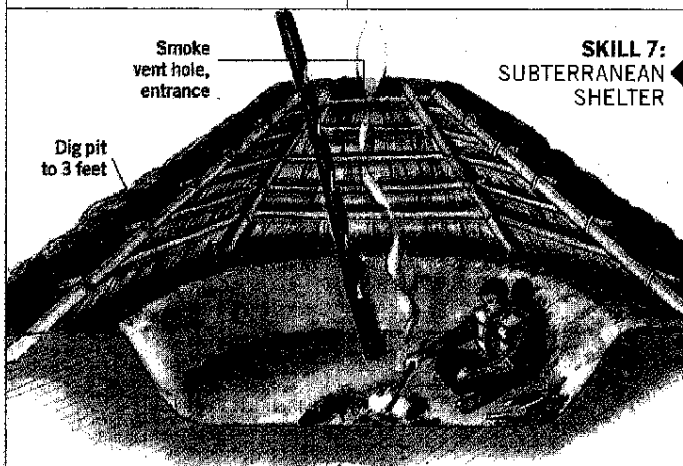
#### [SKILL 7] SALISH SUBTERRANEAN SHELTER

Used by Pacific tribes from Alaska to present-day California, pit shelters are impractical unless you have a digging implement, but they offer better protection from extreme heat and cold than aboveground shelters.

**STEP ONE** Dig a pit the circumference of the intended shelter to a depth of 3 feet.

**STEP TWO** Build a supporting tripod of poles, strengthening the framework with horizontally laced limbs.

**STEP THREE** Thatch the shelter, leaving a hole at the center to serve as both a ladder entrance and a smoke vent. Use earth removed from the pit to sod and insulate the shelter walls.



# Fire

STARTING ONE WITHOUT MATCHES TAKES WORK, BUT IT'S A SKILL ALL OUTDOORSMEN SHOULD KNOW. FRICTION AND SPARKS ARE THE KEYS, BUT PROPER TECHNIQUE AND CHOOSING THE RIGHT WOOD ARE EQUALLY IMPORTANT

## Friction-Based Fire Making

Rubbing two sticks together is likely the oldest of all fire-starting techniques, and also the most difficult. Besides proper technique, you have to choose the right wood for the fireboard and spindle. Sets made from dry softwoods, including aspen, willow, cottonwood, and juniper, are preferred, although a spindle made from a slightly

harder wood, combined with a softer fireboard, can also work. The friction of the spindle against an indentation in the fireboard grinds particles from both surfaces, which must heat to 800 degrees F before a glowing coal forms. This must then be transferred to tinder and gently blown to life.

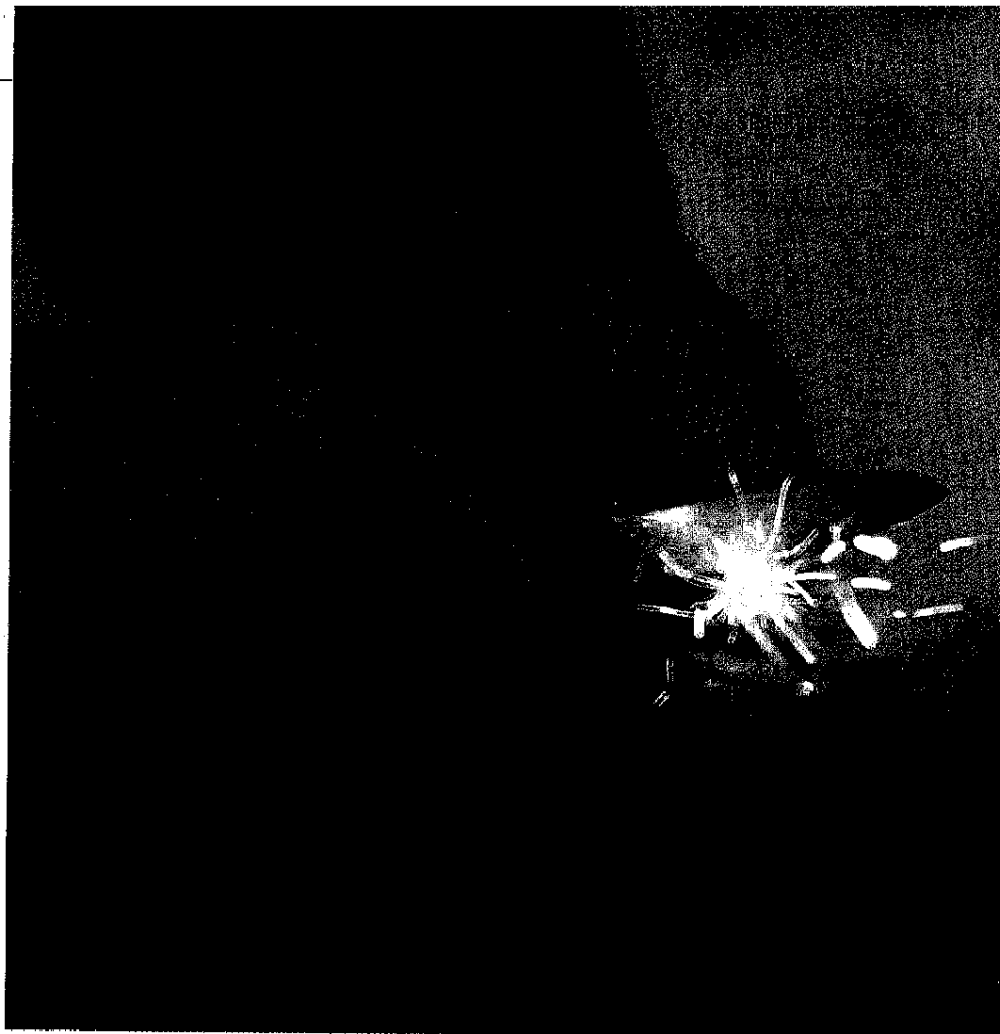
#### [SKILL 8] HAND DRILL

Using a hand drill is one of the simplest friction methods, but high speed can be difficult to maintain be-

#### SKILL 8: HAND DRILL







cause only the hands are used to rotate the spindle. It works best in dry climates.

**STEP ONE** Cut a V-shaped notch in the fireboard, then start a small depression adjacent to it with a rock or knife tip. Set a piece of bark underneath the notch to catch the ember.

**STEP TWO** Place the spindle, which should be 2 feet long, in the depression and, maintaining pressure, roll it between the palms of your

hands, running them quickly down the spindle in a burst of speed. Repeat until the spindle tip glows red and an ember is formed.

**STEP THREE** Tap the fireboard to deposit the ember onto the bark, then transfer it to a tinder bundle (see "Tinder Bundle" on page 56) and blow it to flame.

#### [SKILL 9] TWO-MAN FRICTION DRILL

Two people can do a better

job of maintaining the speed and pressure needed to create an ember using this string variation of a friction drill.

**STEP ONE** Have one person apply downward pressure to the drill while the other uses a thong or shoelace to rapidly rotate the spindle.

#### [SKILL 10] FIRE PLOUGH

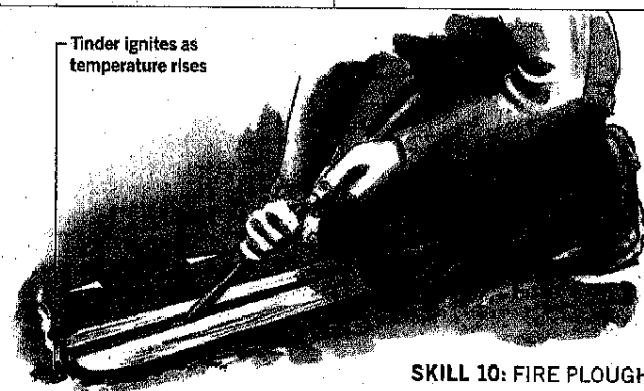
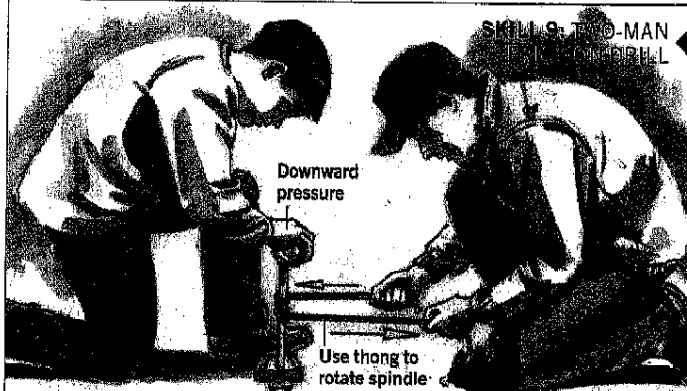
This produces its own tinder by pushing out particles of wood ahead of the friction.

#### FIELD GUIDE

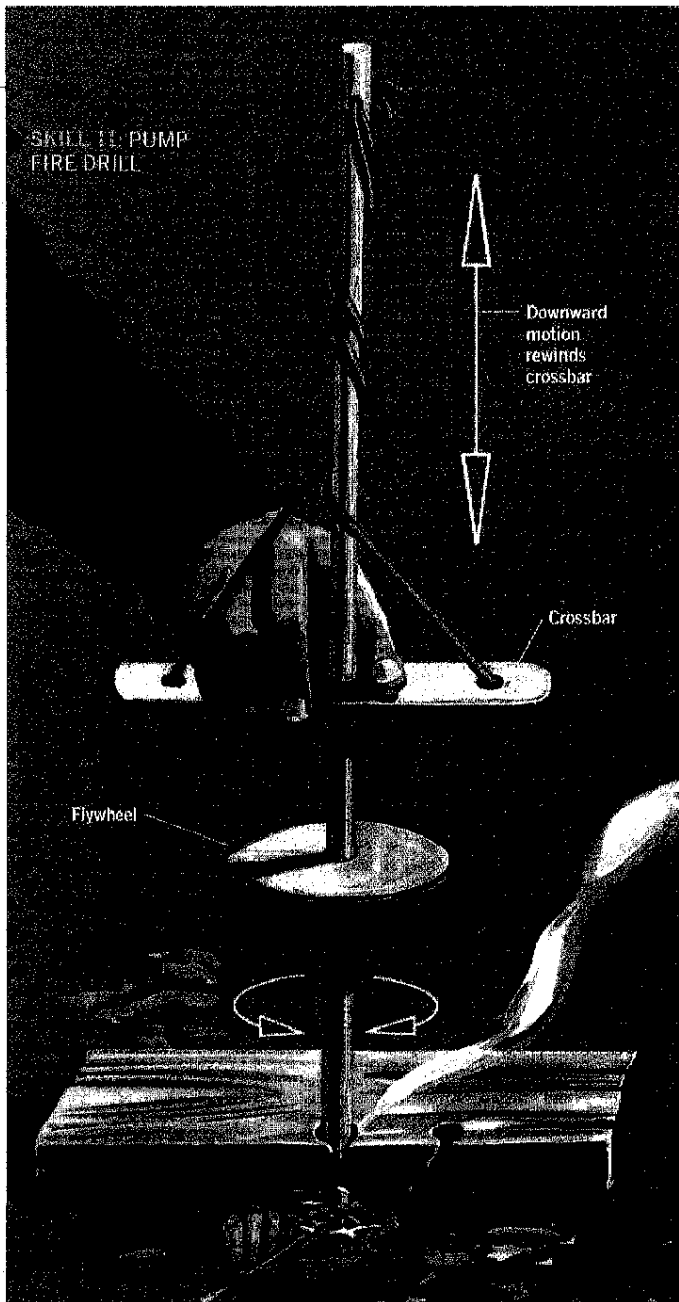
### CHAR CLOTH

The only naturally occurring material that readily glows from a spark is tinder fungus, a corky brown deposit found under scars on birch trees. Don't stake your life on finding any in a survival situation, though. Carrying char cloth in an emergency kit is a safer bet. To make it, cut strips from any 100 percent pure cotton material and set them on fire. After the strips have blackened but not yet turned to ash, stuff them into a lidded jar to smother the fire. Test your new char cloth by striking sparks onto it. A spot on the cloth should begin to glow, the glow holding and slowly spreading. If it doesn't do this, make another batch.

**STEP ONE** Cut a groove in the softwood fireboard, then plough or rub the tip of a slightly harder shaft up and down the groove. The friction will push out dusty par-



SKILL 10: FIRE PLOUGH

**SKILL 11: PUMP  
FIRE DRILL**

ticles of the fireboard, which will ignite as the temperature increases.

**[SKILL 11] PUMP  
FIRE DRILL**

The Iroquois invented this ingenious pump drill, which uses a flywheel to generate friction. The crossbar and flywheel are made of hardwood; the spindle and fireboard are made from softwoods (as in the hand drill).

**STEP ONE** Bore a hole in the center of a rounded piece of hardwood and force the spindle in so that it fits tightly. Select wood for the

crossbar and bore a larger hole that will slide freely on the spindle.

**STEP TWO** Attach the crossbar to the top of the spindle with a leather thong or

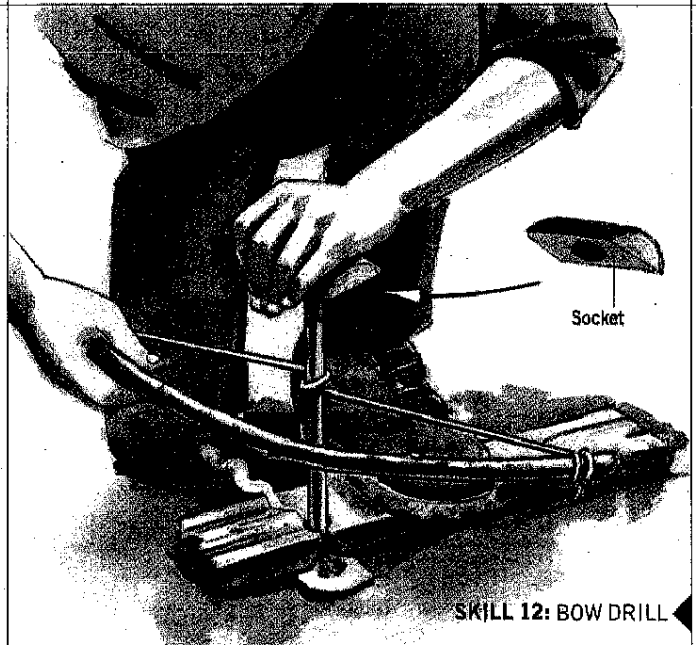
**PRIMITIVE TOOLS****Rock Striker**

An ideal tool for starting a spark-based fire, the striker should be made of flint for best results. If you can't find flint, look for quartzite, which is much more common and is hard enough to strike sparks from steel.

**STEP ONE** Identify quartzite by the many crescent-shaped fractures on the surface.

**STEP TWO** Choose a quartzite boulder that is flat or discus-shaped and drop it against a larger rock to chip off an edge. Round or oval rocks are more difficult to break.

**STEP THREE** A flake broken from the quartzite boulder is usually sharp enough to use as a striker or knife. If you can't find one to your liking, break the boulder again.

**SKILL 12: BOW DRILL**

sturdy shoelace.

**STEP THREE** Wind up the flywheel so that the thong twists around the spindle, then press down. The momentum will rewind the crossbar in the opposite direction. Repeat until friction creates a glowing ember.

**[SKILL 12] BOW DRILL**

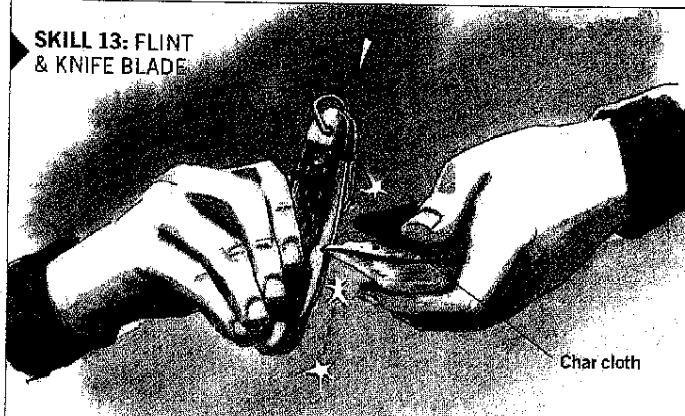
Of all the friction fire-starting methods, the bow drill is the most efficient at maintaining the speed and pressure needed to produce a coal, and the easiest to master. The combination of the right fireboard and spindle is the key to success, so experiment with different dry softwoods until you find a set that produces. Remember that the drill must be as hard or slightly harder

than the fireboard.

**STEP ONE** Cut a notch at the edge of a round impression bored into the fireboard, as you would for a hand drill. Loosely affix the string to a stick bow, which can be any stout wood.

**STEP TWO** Place the end of a wood drill the diameter of your thumb into the round impression, bear down on it with a socket (a wood block or stone with a hollow ground into it), catch the drill in a loop of the bowstring, then vigorously saw back and forth until the friction of the spinning drill produces a coal.

**STEP THREE** Drop the glowing coal into a bird's nest of fine tinder, lift the nest in your cupped hands, and lightly blow until it catches fire. »

**SKILL 13: FLINT & KNIFE BLADE**

Char cloth

## Spark-Based Fire Making

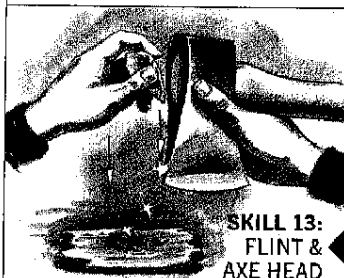
Human beings have been starting fires from sparks since the days of the cave dwellers of the Paleolithic era. It is still a vital survival skill for modern hunters and fishermen to learn. If conditions are wet or windy and matches are extremely difficult to light, a glowing spark in tinder uses wind to its advantage to burst into flame.

**[SKILL 13] FLINT AND STEEL**

Striking the softer steel against the harder flint will produce sparks to flame your fire. The curved steel striker provided with flint and steel kits is easiest to use, although with some practice you can produce sparks by using the back of a carbon-steel knife blade. (Stainless-steel knives are usually much too hard to shave sparks from.) An old bastard file or an axe head will also work.

**STEP ONE** Grasp a shard of hard rock, such as flint or quartzite, between your thumb and forefinger with a sharp edge protruding an inch or two.

**STEP TWO** Tightly clamp a piece of your homemade char cloth or a lump of birch tinder fungus under the thumb holding the piece of flint. Grasping the

**SKILL 13:**  
FLINT  
& FILE**SKILL 13:**  
FLINT &  
AXE HEAD

back of the striker, knife blade, or file in your other hand, strike a glancing blow against the edge of flint, using a quick wrist motion. If you're using an axe, hold the head still and sharply strike the flint near the blade, where the steel is harder. Molten sparks from the steel will fly off and eventually be caught by an edge of the char cloth, causing it to glow.

**STEP THREE** Carefully fold the cloth into a tinder nest and gently blow on it until it catches flame.

Another option is to use a magnesium-and-steel tool, which is an updated version of an ancient method that creates a strong shower of sparks. The advantage of this method is that the

magnesium shavings flame briefly at an extremely high temperature, eliminating the need for char cloth or tinder fungus.

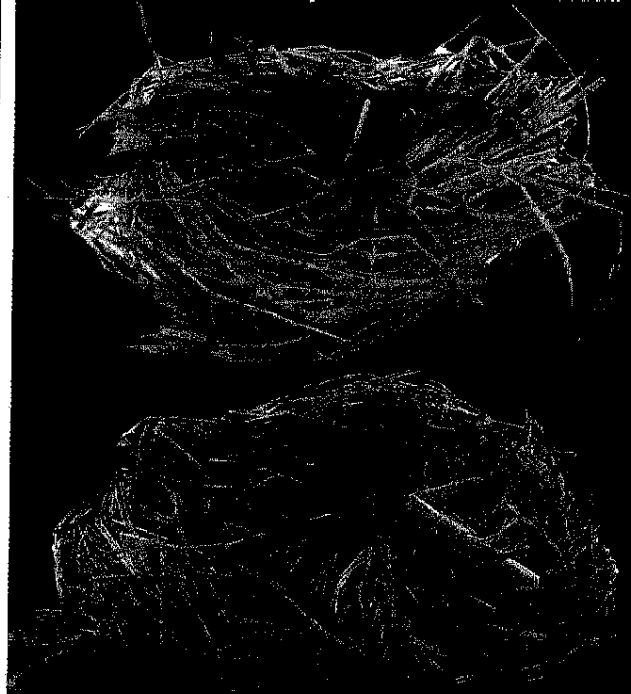
**STEP ONE** Using a knife blade or striker, shave a pile of magnesium flecks into a nest of tinder.

**STEP TWO** Strike the steel edge of the tool with the back of a knife blade or the scraper provided to direct sparks onto the tinder.

**STEP THREE** When the tinder starts to smolder, gently blow on it until it bursts into flames.

## Tinder Bundle

Fire making does not end with the birth of a red-hot coal, nor does a glowing char cloth ensure that you're going to get a flame. The coal or char cloth must be transferred to a bundle of fine tinder before being blown into flame. Good sources include dried grasses, lichens (including old man's beard), shavings from the inner bark of aspen, poplar, and cottonwood trees (which burn even when wet), and wind-blown seed or fluff. The tinder bundle should be roughly the size of a softball and loosely formed to allow air circulation.



DRIED GRASSES BUNDLES WITH COTTONWOOD BARK

To blow the bundle into flame, make a small pocket in the center. Tuck the glowing coal or char cloth into the pocket, then loosely fold the edges around it. Next, pick up the bundle and gently blow on it. Once it has burst into flame, place it under a tepee formation of small twigs and add larger pieces until a strong fire has been established.



# Food

A DEER CAUGHT IN A SNARE CAN FEED YOU FOR WEEKS, BUT YOUR ODDS OF CATCHING SMALL GAME, BIRDS, AND FISH AND OF GATHERING WILD FOODS ARE MUCH HIGHER. ULTIMATELY, TAKE WHAT IS EASIEST

## Snares

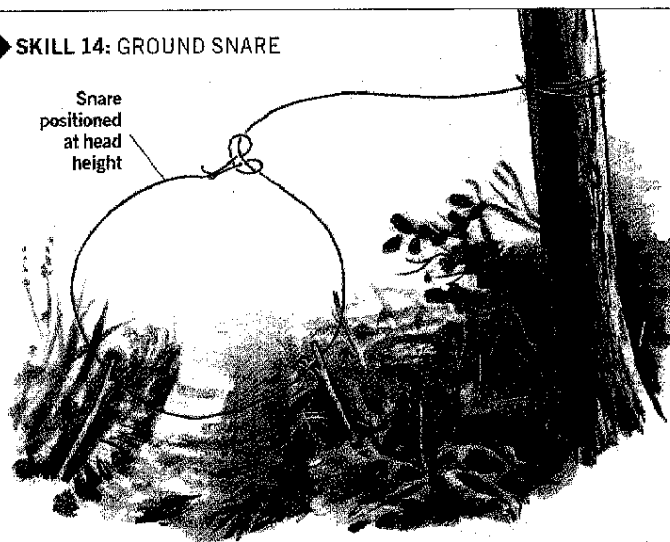
Small-game snares can be made from the interior strands of parachute cord, braided strands of sinew, or fishing line. Snares stout enough to secure game as

large as deer need to be made of rawhide or parachute cord.

### [SKILL 14] GROUND SNARE

Position the snare at head height and tie off the end to

### SKILL 14: GROUND SNARE



a tree, a stake in the ground, or a log that the animal can only drag a short distance as the noose tightens. Make snares from cord, fishing line, or wire if available.

### [SKILL 15] SPRING SNARE

This set (see page 58) employs a trigger that snatches game into the air as it strains against the noose. It's good for rabbits and game as large as deer. »



## PRIMITIVE TOOLS

### Discoidal Stone Knife

To make a useful knife, all you need to do is bring two rocks together.

#### STEP ONE

Choose a smooth, oval-shaped rock with fine pores, such as quartzite or the basalt cobbles found along riverbeds. Whack the edge of the stone against a larger rock, shutting your eyes at the moment of impact.

**STEP TWO** Recover the broken-off piece of stone, which should be disc-shaped and sharp along the sheared edge. Use pieces 2 to 3 inches across as knives; larger sheared stones can be bound with a handle to make an axe.

## FIELD GUIDE

STONE  
POINTS

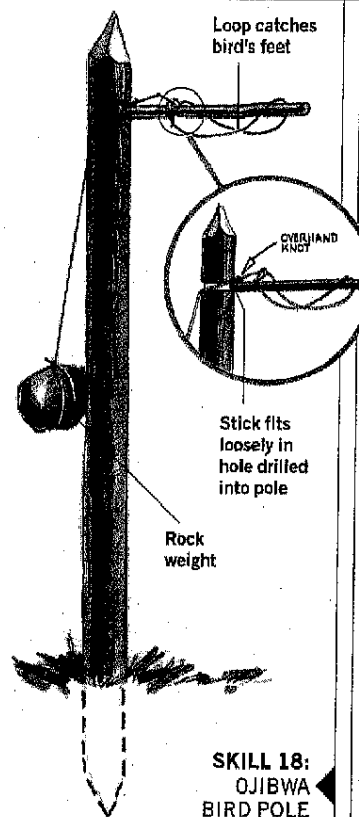
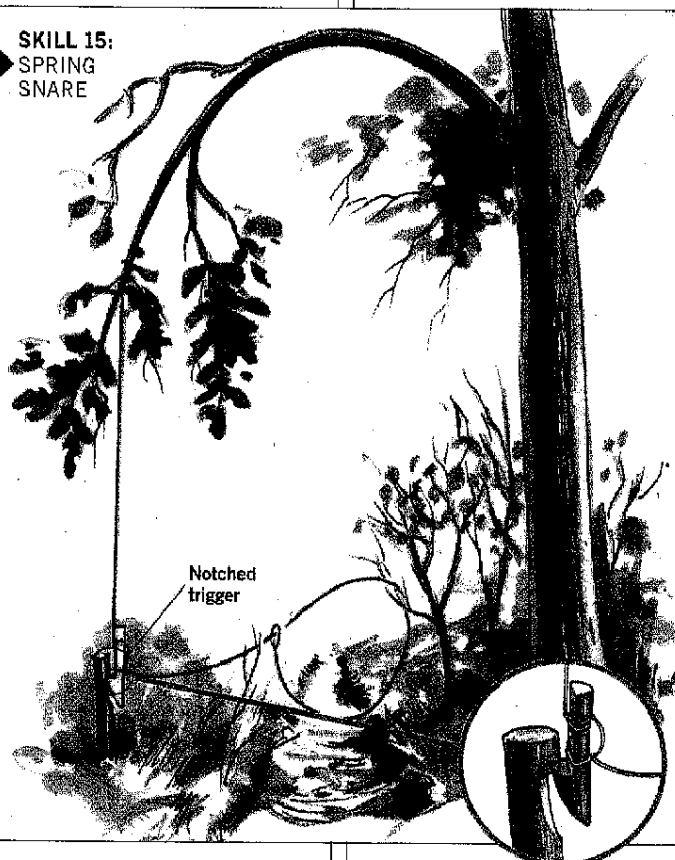
Points and blades chipped from crypto-crystalline rocks such as chert, flint, and obsidian make the sharpest knives, arrowheads, and spear tips, although efficiently using the latter two requires lots of practice.



**STEP ONE** Strike flakes from a tool stone by hitting it with a hard rock. This is called "percussion flaking." Some flakes will be suitable as is for knives; others will require more flaking.



**STEP TWO** Place the tip of an antler tine or bone point against the flake and apply a twisting push toward the edge of the stone. Continue flaking off small cones near the edge until the point of the stone is evenly chipped and razor sharp.

SKILL 15:  
SPRING  
SNARESKILL 18:  
OJIBWA  
BIRD POLEDeadfall  
Traps

Deadfalls that use logs or rocks to squash prey are typically baited, but they also work along trails or outside burrows when a passing animal or bird brushes against the trigger.

[SKILL 16] SPRING  
DEADFALL

One of the easiest traps to make and set, the spring deadfall (see page 59) depends upon the game worrying the bait, so it's best used for carnivorous animals and rodents such as pack rats.

Tension  
Traps

Employing fire-hardened spear points under tension, these can be deadly to predator and prey alike. Always set and approach an impaling trap cautiously from behind and use only in an emergency in remote areas, where another human or do-

mestic animals are not going to blunder past.

[SKILL 17] SPRING  
SPEAR TRAP

This trip-wire set is effective for wild pigs, deer, or other game that regularly sticks to defined game trails. Make certain the horizontal thrust of the spear is at a level that will impale the body of the game sought. This is an extremely dangerous trap; use it with caution.

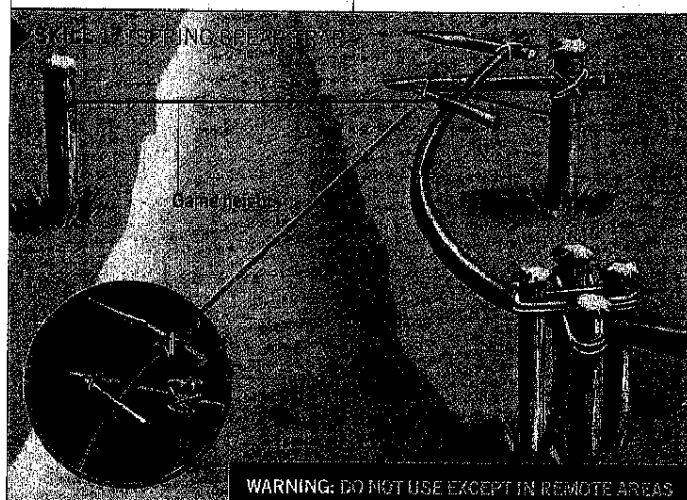
## Bird Traps

Birds can be much easier to trap than mammals and should be among your first targets for a meal.

[SKILL 18] OJIBWA  
BIRD POLE

Set this trap in a large clearing where birds will naturally seek it out as a landing place.

**STEP ONE** Sharpen both ends of a 6-foot pole and drill a small hole near one end.



## RAW MATERIALS

## Edible Plants

THE MOST recognizable plant food sources are nuts and berries, but they can be scarce during fall, winter, and spring. Several of the more common food plants available in colder weather are shown here. Always keep one rule in mind: Never eat a plant you cannot positively identify. Poisonous species such as hemlock have killed those who mistook it for wild carrots or parsnips.

**1) Rock Tripe Lichen** This greenish-black lichen is found growing on rocks throughout the northern tier and was an important emergency food for Indians and explorers. Washington's troops boiled and ate it during their harsh winter at Valley Forge. It is not only highly nutritious but also a stimulant for the immune system.

**2) Arrowleaf** Called the wapato or duck potato, arrowleaf grows in swampy areas. You can eat the golf ball-size root raw or cooked for better flavor. This humble plant food saved Lewis and Clark from starvation when they were unable to find game.

**3) Bark** The inner bark of several trees, including slippery elm, white birch, basswood (buds as well), white pine, and willow is barely palatable but nutritious. Indians resorted to bark when little game was available.

**4) Indian Cucumber** This species, found in dry climates, is characterized by its umbrella-like appearance. The white root is what you're looking for.

**5) Prairie Turnip** Indians highly favored the thick roots of this Midwestern prairie plant.

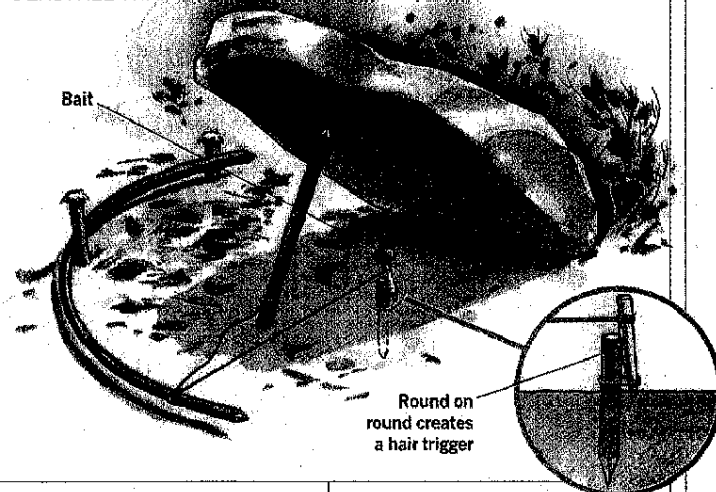
**6) Jack-in-the-Pulpit** The root is edible, but it can make you extremely ill unless it's cooked thoroughly.

**7) Calopogon** Found primarily in marshlands, this wild onion look-alike is milder in flavor.

**8) Cattails** The tuberous root of this common bulrush is starchy but palatable when cooked.



## SKILL 16: SPRING DEADFALL TRAP



Drive the other end into the ground until it is secure.

**STEP TWO** Cut a 6-inch-long stick that will loosely fit into the hole. Tie a rock to a thin cord and pass the cord through the hole in the pole, then make a slip noose that drapes over the perch.

**STEP THREE** Tie an overhand knot in the cord in back of the slip noose and place the stick against the hole. Tension should hold it in position. When a bird flies down and perches, it will displace the stick, the rock will fall, and its feet will be caught as the loop quickly slides through the hole.

## Fish Traps

Fish swim next to banks at night or move from deep holes into shallow water to feed.

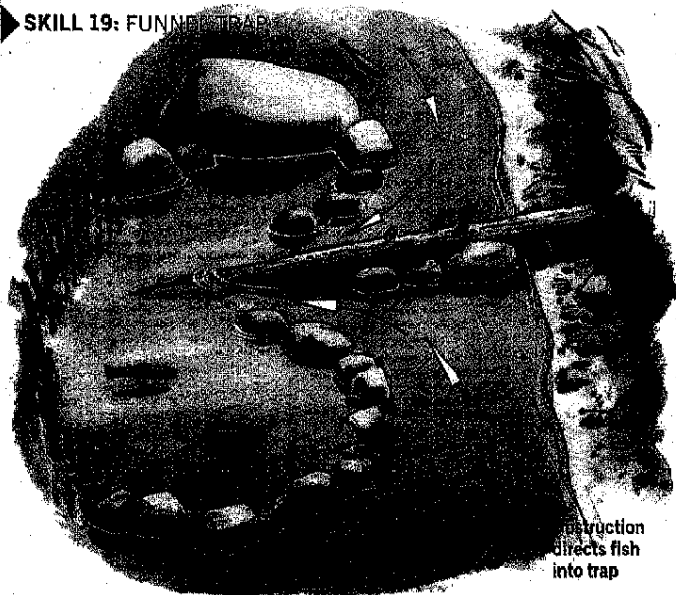
They can often be directed into traps from which they are unlikely to escape.

## [SKILL 19] FUNNEL TRAP

Make the walls of the funnel trap with piled-up stones or tightly spaced sticks driven solidly into the river or lakebed. Close the entrance to the trap, roll the water, then either spear the fish or net them with a seine made by tying a shirt or other cloth between two stout poles.

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## SKILL 19: FUNNEL TRAP



Stick  
directs fish  
into trap