**Uses of Fiber and Wood by Native Americans (and others)**

**Bows, Arrows and Atlatls**

Atlatl vs. bow and arrow

Historical perspective--atlatl early supplanted by bow and arrow

Projectile Points

- •usually atlatl darts larger, and heavier
- •could manufacture smaller points from easily obtainable materials

Arrow shafts easier to manufacture and carry

- •easier to find short straight shaft material than long straight material
- •difficult to carry many long atlatl darts
- •easy to carry multiple foreshafts for atlatl and arrow shafts for bow

Bow had longer range

User could become more proficient with the bow more quickly

Velocity of arrow greater, requiring less "lead" during launch

Penetration--about the same for both, as the point had to penetrate between the ribs

Launching position

- •bow could be fired in any position; atlatl had to be launched with the whole body

Two basic types of bows

- •long bow--most prevalent
- •recurve bow--rare in the west

Bow characteristics

In the western United States several materials used for making bows

- •Elk antler
- •Mountain sheep horn
- •Juniper (J. osteosperma and J. virginiana)
- •Chokecherry (*Prunus* spp.)
- •Serviceberry (*Amelanchier*)
- •Skunkbrush (*Rhus trilobata*)

Many bows were made of composite materials

- •Juniper backed with sinew
- •Mountain sheep horn backed with sinew
- •Elk antler backed with sinew

•Because sinew and native-made animal glues soften when exposed to moisture, the bows were often carried in a slipcase of animal skin to protect the string and backing

Juniper Bows

Trees that produced the necessary quality of wood had to be located

•usually large trees, growing in protected areas
•straight trunk, no twisting

Wood was usually cured in place for a year or more
•select a section 3-6 ft. long
•cut notches deep enough to kill the vascular cambium
•after curing, would pry off from the top in one piece

Bow stave included mostly sapwood, occasionally some heartwood at the belly

Some trees used repeatedly over estimated 500 year span

**Arrows**

Several types of arrows used for different purposes

1. Unfletched (feathers a premium, glue difficult to make and keep)
•usually made of light woods (*Salix* spp.) and reeds (*Phragmites communis*)
•used in a lightweight bow
•often with a separate foreshaft (6-8 in.) of harder wood to hold point
•easily made
•lasted only one or two shots
•used primarily for flock shooting and small game

2. Fletched
•usually made of harder wood--chokecherry (Prunus sp.), serviceberry (*Amelanchier*), rose (*Rosa*), currant (*Ribes*) and willow (*Salix*)
•usually best suited for sturdy hunting arrows
•harder, longer process to make
•could last many shots

Production of arrows
•arrow shafts are cut from young shoots found growing in shaded areas (i.e. tall and straight to reach the light)
•dried for one day in the sun
•bark is peeled, tied in bundles of 5-6 and left to dry slowly (they can be dried more quickly, but this increases the chance of splitting)
•slight curvature can be eliminated with heat and an arrow wrench
•when they are completely dry and straight, they are scraped smooth
•groups of arrows made at one time saves time and increases reproducibility

Cordage for bowstring and other uses
1. often was made of sinew for heavier weight bows
2. cordage fibers for lighter weight bows

•*Boehmeria cylindrica* (related to *B nivea* ,Urticaceae, from which Ramie is
produced was used as a source of twine for bowstrings and to attach spear, atlatl and arrowheads to shafts
•other members of the Urticaceae (i.e. *Urtica* or stinging nettle)
•Milkweed (*Asclepias*)--the stalks contain a fine silky fiber
•Dogbane (*Apocynum cannabinum*)
•Hawthorn (Crataegus)--the inner bark can be stripped and twisted into string and rope. It is a little stiff when dry

**Tools**

Fire technology

1. starting
   •fire starter stick
   •bow drill

2. carrying and maintaining
   •fire bundle (composed of finely shredded bark, shredded bark and bark strips
   •would hold glowing ember for 6-12 hrs.

**Clubs and other weapons**

•Clubs were made of practically any hardwood for warclubs, in sheep traps, etc.

•bolos were made from flexible, strong cordage

**Traps, Snares and Nets**

A net of *Apocynum* fibers complete with drawstring, from Danger Cave, Utah, has been dated about 5000 B.C. These are bast fibers from the stem which not only had to be carefully separated, but skillfully knotted to create the net.

A net of juniper barb fibers suitable for capturing animals the size of deer or mountain sheep has been found in the Absaroka Mts. in northern Wyoming.

Juniper, cottonwood, sagebrush used to make "fence-posts" for bison, antelope and Bighorn sheep traps

**Matting and Shelter**

Yucca and Typha mats almost 12,000 years old have been found in a Nevada cave, in a region where certainly the early Indian tribes wove baskets

Bark and woven mat coverings were very common summer shelter

**Canoes**

Birch bark was used to fabricate light but strong canoes

Dugout canoes were common in most places with an abundance of large trees

**Utilitarian**

Agave sisalana has sharp spines on the ends of its leaves that have been used by native peoples as needles.  Providing both the fiber and a sewing utensil gave rise to the common name "needle and thread plant".