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bow one should never place the lower tip on the ground and push the upper tip down, nor bend the bow with the knee. Always watch strangers and do not let them handle your bow, unless you are certain that they know want they are about. A new bow and old ones that have not been used for some time, should be strung with care and broken in gently by drawing and relaxing the string for progressively longer and longer draws until the full draw has been reached. Do not loose any bow from the full draw position without an arrow on the string. Bows should never be left near steam pipes, radiators or other sources of artificial heat and they should always be unstrung when you put them away.

Now that Mr. Hoffman is rested I'll ask him to discuss arrows

for us.

Hoffman

Arrows are the most exacting of the archer's aquipment. Arrows are of two types; "self" made of a single stick of wood, and "footed" which have a hardwood "footing" or foreshaft glued to the front of a shaft of a lighter wood. A chested arrow is heavy at the neck, then tapers gradually toward the "pile" or point. A bob-tailed arrow is the reverse of the chested arrow. A barreled arrow is smaller at both ends and slightly larger in the middle. Cylindrical arrows are the type generally used. For the beginner birch arrows are good becuase they will stand a lot of abuse, but they tend to warp easily; The woods most widely used are Port Orford Cedar, Norway Pine and Sitka Spruce. Norway Pine is considered the king of arrow woods, but it is difficult to obtain the true species. Port Orford Cedar is an ideal wood and is generally used. There are other excellent woods for arrow making. Footings may be made of Beefwood, Purpleheart, Lemonwood, or stained Hickory. Fine arrows are matched for weight, straightness, spine (or stiffness) and for grouping on the target. An arrow that is too stiff will have a tendency to shoot to the left.

In regard to the feathers, the arrow may be fletched straight, or spirally so that the arrow spins like a rifle bullet in flight. Spirally fletched arrows will have a smoother flight than the straight feathered arrows, but on the other hand, they will hide a bad loose, while a straight feathered arrow will expose it so that it may be corrected.

The feathers used (usually the pointer feathers from the turkey) may be either cut or stripped. The cut feathers are prepared by paring off the quill to leave a stiff foundation, while the stripped feathers are merely peeled from the quill. Cut vanes are more durable and stand out perpendicular to the shaft while stripped feathers lean over at a slight angle. It is important that all the feathers be aligned in the same direction or the arrow will webble and stagger like a drunken sailor.

The arrow nock is the notch into which the bow string is placed and it is well to have some sort of reenforcement here, else the arrow will split easily. This nock reenforcement may be merely a thin fiber insert, a wedge of horn, fiber, or hard-wood, or it may be a tubular shaped piece of fiber or netal glued on the arrow shaft.

Cheap arrows are frequently made with bullet jackets for points but these are objectionable in that there is a tendency to kick the shaft to the left if the full length of the arrow is drawn in aiming.