THE LEARNING CIRCLE: NOTES, THOUGHTS & PROJECTS

I. Tracking Elk

In October 2010 we spent a weekend tracking Tule elk at Wind Wolves Preserve, 95,000 acres on the southern edge of the San Joaquin Valley sloping up from grassland to piñon-oak forest. Because elk once numbered in the many thousands here, it was exciting to see a reintroduced population. Following are some facts, ideas and projects for those of you who missed this class.

Elk social behavior. In this habitat, breeding occurs in July and August; after the rut, elk travel in groups of either females, calves and yearlings, or bulls of different ages, though social grouping can be in flux for a while. The photo here shows us looking at a group of 51 cows, calves and yearlings. A bit later we watched a group of 17 males, two of them very large bulls and the rest younger apparent from their smaller antler size.

In this open grassland, we could not approach the elk very closely without their moving quickly over the next hill, but we could study tracks to identify different gaits that we saw them using: walks, trots and lopes.

We could see corridors of movement through groups of tracks across dirt roads, and we could trail individual animals to see their choice of routes (and to get valuable practice picking out one individual's tracks from others' by age and size of tracks). In some areas cattle grazing occurs in elk habitat, and indeed domestic calf tracks (second from left) are the only ungulate tracks you might confuse with elk (left). A domestic calf's tracks will show a shorter stride and a more irregular pattern than an elk's; also notice with whom the animal is traveling, other animals with the same size tracks as an elk herd, or animals with huge round tracks as with cattle. My *Tracker's Field Guide* shows comparison photos. At the International Society of Professional Trackers meeting last month, I learned from Cristina Eisenberg, elk researcher in the Rockies, that male elk scats differ from female. Above is a photo of male scats.

What you can do. Californians can observe and track elk at Wind Wolves. There is a public campground in the lowlands, where elk spend time in winter and spring grazing on new vegetation sprouting from the rains; later the herds move up to higher country that is less accessible. Go to http://www.wildlandsconservancy.org/preserve_windwolves.html for details about Wind Wolves. Other places in CA to track elk are Pt. Reyes (see http://www.nps.gov/pore/planyourvisit/wildlife_viewing_tuleelk.htm) and the Carrizo Plain. The Pt. Reyes website links to a 10-minute video about elk reintroductions. In CA and other states, also search the state fish & game office for elk locations. Here is very good reading about elk especially for trackers:

Cristina Eisenberg, *The Wolf's Tooth. Keystone Predators, Trophic Cascades, and Biodiversity*. Washington: Island Press, 2010
Altman, Margaret, "Social behavior of elk in the Jackson Hole area of Wyoming," *Behaviour*, 4:116-143 (1952)
Harper, James A., Joseph H. Harn, Wallace W. Bentley and Charles F. Yocum, "The status and ecology of the Roosevelt elk in California," *Wildlife Monographs*, 16:1-143 (1967)
McCullough, Dale R., *The Tule Elk. Its History, Behavior, and Ecology*. Berkeley: University of California Press, 1971

II. Straightening arrow shafts

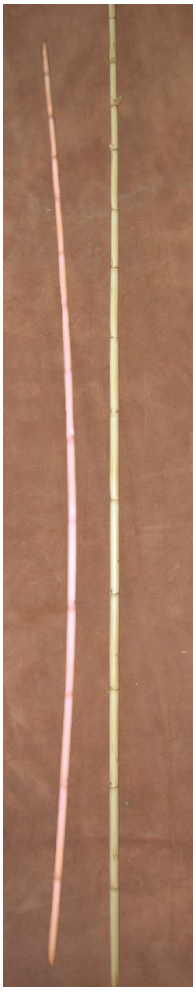
Every time Gary Baugh teaches an arrow-making class for Earth Skills, as he did a month ago, I appreciate once more the importance of detail when it comes to "primitive" technology. Archery and the construction or replication of hunting weapons is not only a "kick," as Gary would say (whether you're a hunter or not), but it teaches a lot about doing things right.

You can make arrows by yourself using some excellent references. My personal favorite is Jim Hamm's *Bows & Arrows of the Native Americans* (Bois d'Arc Press, 1989), which includes many photos as well as detailed and straightforward text. Remember that "primitive" arrows were made of natural materials abundant locally. Wherever you live, you can find suitable arrow shaft materials. And, many arrows simply had fire-hardened points so you don't need to attach arrowheads. Hamm would have you collect green shafts and bundle them to dry, but Gary suggests leaving the green shafts loose and, without heat, simply tweaking them once or twice a day until they are reasonably straight. This process may leave the shafts with some final straightening to be done, and in my experience doesn't work with cane arrow shafts. Here's where an arrow straightener becomes useful.

Remarkably, there is little mention of the arrow straightener and how to use it in most of the references on my shelf, so I'll provide some details from my own experience. (Ethnographer J.P Harrington describes the Chumash use of the straightener as follows: "They used the arrow stone, quite hot, on the shaft. No other hardening process. The one who wished to make a first-class arrow would get the wood green and dry it by putting it on the hot arrow stone. FL does not know what they put on the stone, but when the wood was green they put something like oil on the stone and keep turning it until the wood was as smooth as porcelain. Putting the stone to the arrow was like putting starch and an iron to clothes."

a

Arrow straighteners are stones, usually steatite or sedementary rock, with a groove in them that is abraded by a harder stone or a metal file. The left photo shows one of my soapstone straighteners at left, and an artifact of unknown age given to me by a friend from Arizona in at right. The stone is placed in a bed of coals to heat, for ten or fifteen minutes. (Many times I have also heated the stone directly over a Coleman or kitchen stove burner.) Once the stone is heated, prepare the shaft to be straightened by rubbing grease on it. I've used raccoon or other animal fat scraped from a hide, but you can also use bacon grease, lard or simply oil. The grease helps to carry heat into the shaft's fibers and also prevents scorching.



Next, put a short section of the shaft that needs straightening into the groove, move it back and forth a couple of inches and also rotate it in the groove so that section is heated. Then, with the arrow still in the groove, push down against the curve, hold for a moment and then release. You can often feel the shaft's fibers stretch. (In the right photo above, note that I have bent the shaft temporarily in the opposite direction of the curve.) Remove the shaft, examine it for straightness and then keep heating and straightening, section by section. The stone will remain hot enough for at least fifteen minutes before it needs to be reheated.

Hollow cane shafts may start off being crooked both at the nodes and in between them, and the arrow straightener will take care of both problems. For the nodes, make sure you rub grease into the junction between sections, then rotate the node area in the hot groove. Then, with the node in the center of the groove, press the shaft downward firmly but gently from both sides until you feel the node has "given way." For the in-between sections, I find that moving the section back and forth in the groove while applying downward pressure will do the trick. And as the passage from Harrington above says, a cane shaft that begins as a bit weak and flexible becomes hard, slick and durable just from the straightening process. Using the stone takes some finesse and experimentation, but the arrow straightener certainly works well! The cane shaft at right was straightened in seven minutes.