Soft Hammer Reduction

Chip Away, Thats what I Wanna Do-oo ...

Soft Hammering is the most dynamic stage in the reduction process. It is also the most difficult. For this reason, it is the most satisfying to master. Soft hammering thins and shapes the flakes removed during hard hammering. A billet made of antler, hard wood, or copper is used to strike large flakes off of the objective piece. This (hopefully) removes irregularities, thins the piece, and gives the piece its general form, in preparation for pressure flaking. Depending on how coarse the raw material being worked is, the intended purpose of the tool, and the skill of the flintknapper, soft hammering may be the final stage in the process.

Soft Hammer percussion earns its name because the hammer or 'billet' is softer than the stone being worked. They are also softer than the hammerstones used in the earlier stages of knapping. Billets in prehistory were usually antler, although hard woods could also have been used. Many modern flintknappers opt for copper billets when they soft hammer.

When selecting antler for billets, you want to use a thick portion of the antler. The base or crown, where the antler attaches to the skull works well. After the antler has been cut off, look at the cross-section. Most antlers will have a ring of dense material surrounding a porous interior. The less porous the interior the better for the purposes of knapping. Moose antler is highly prized for being quite dense. It is, however, quite large and heavy and not practical for a lot of knapping.

"How the heck can you use a hammer softer than the rock" you may well ask. And well you may. The trick here is that you are not just going to bash away at the rock. Soft Hammer relies on finesse and technique, rather than force. This is true of most other knapping techniques, but is especially so with soft hammer. The flakes removed with a soft hammer have a *bending initiation*. When the hammer strikes the edge of the piece you are working, the edge bends a bit and a small part of it breaks off and stays on the flake which is removed. A flake removed from an arrowhead with a soft hammer will have a slight lip on its underside. This lip is only formed by bending initiations and is one of the clues archaeologists can use to determine what sort of tools were being made at a site and how they were made - just from the flakes left behind!

There are different methods for soft hammering, this is just the way that works best for me. While sitting comfortably, hold the objective piece (the arrowhead you are making) in your left hand and the billet in your right hand (reverse if you are left handed). You are resting the objective piece on your pointer, middle, and ring fingers, with your thumb on top. Hold it so you don't drop it, but we aren't trying to squeeze water out of it. Hold the piece more-or-less horizontal; you can rest the back of your left hand on the inside top of your left thigh if you want. You want the striking motion of the billet to be an arc, from about 12 o'clock to 6 o'clock. If 9 o'clock is the midpoint of your arc, you want to contact the piece somewhere between 9 o'clock and 10 o'clock. Does that make sense? Unlike hard hammer and pressure flaking, which direct forces through a point, with soft hammering, you want a broad contact area. That said, you want your strike to be quick and firm, but not terribly far in. Its good to take a couple practice swings and slowly inch your way closer to the piece. If you are successful, you should snap a large flat flake off of the piece and it will be sitting balanced on your middle finger. If you are not successful, stop and think about *why* it didn't work before you try again.

Those are the basics. Here are some other things to keep in mind.

- Try to make your flakes follow the ridges left from earlier flake removals. This will make them travel farther and will give you greater control.