

REEL 2

~~fills in all the cracks and lets the heat soak in evenly all the way around.~~

Phil Smith:  
*Epstein*

Don, does it look as though the Indians were accustomed to heat treating the blades or preforms or something of that sort, or do they do the whole nodule?

Crabtree:

Well, in some cases you find evidence of treated cores. Of course, the Hopwellians heated the whole core and it had a much sharper edge. The finer they could make the material by altering, the finer the texture, the sharper the edge. Like this flint here ~~which~~ <sup>where</sup> it is not shiny, it is not nearly as sharp on the leading edge. You'll see little striations I mean little saw tooth marks - but obsidian or a glassier material produces a sharper edge, because the fracture breaks out to infinity. If you have little granules in the material, the flake is not going to be nearly as sharp and smooth as if it were a very fine-textured material. Most evidence that I have seen has been in preforms that have been heated. Or, they will take a whole series of flakes and thermal treat them and then rework the flakes. Then, again, you'll find fairly sizeable treated flakes, I mean, this long and this wide, that had to come off a core - <sup>How-</sup> ever, I have not found the core. I'm not an archaeologist and I'm not out looking. I would rather stay at home and chip the stuff than to go out and look. When I was a boy, I would go out hunting <sup>if</sup> there was a blowout in the blow sand I would gather, of course, what I saw on the surface. I was after chips and flakes as much as artifacts. This is <sup>a</sup> ~~one~~ that Dr. Bordes was working on. This is quite good evidence of alteration. We have removed a great deal of the surface, but on this side you can see the contrast between heated and untreated material. This is the untreated material as it occurs in its natural state. It's very tough material, <sup>and</sup> it has been treated. I'm sorry, I meant to bring an untreated piece to show the difference in character. But we'll pass this one around and there should also be an artifact someplace here of this material. This hasn't been heated enough but this is pressure worked. You can see that this treatment changed the material and produced a better stone than this original piece. But in its natural form it is extremely tough. You can hardly take a flake from it, but this had a better alteration. This is evidence of over-treatment. I mean it got too hot on that edge, probably was too close to the element and this piece popped out.

*treated piece*

*How-  
ever, I have not found the core. I'm not an archaeologist and I'm not out looking. I would rather stay at home and chip the stuff than to go out and look.*

*Epstein*  
Daugherty:

Do you feel that the temperature was too high or it cooled too quickly?

Crabtree:

He must have had great control to have altered as large a piece as he did. And he understood almost exactly how much heat was necessary because there is a wide variety of the water content in stone and the degree of temperature will vary with each material. Now, for instance, one type of chalcedony which has a replacement of silica jell, will not stand very much heat. However, if properly controlled, it will alter beautifully and be very waxy and lustreous and almost jewel-like. While the agate nodules formed in the vesicules of the ancient lava rocks apparently have micro crystals forming from the outside toward the center, leaving these patterns. These are called fortification agate. These will stand much more heat than those formed by a silica jell deposit.

*6-25-1, B*