Tape #2

Earl: Now, we left ~~the~~ a discussion talking about cones No. 6 a tabular piece of opaque glass with pressure flaking scars which have been used to establish a platform, I believe, for detaching a flake across a broad face.

Don: This is Replicating the ~~fa~~ flaking technique. ~~Are these no. 6?~~ That's No. 6 right?

Earl: ~~Right~~, ~~Ok~~ ~~of course~~ okay on No. 7 we had better start over on.

Don: This one was where the edge wasn't turned on the top side and very small flakes were removed on the thin edge in order to seat the tool ~~xxxxx~~ so that a flake may be taken off from the long face of the tabular ~~xxxx~~ piece.

Earl: Right, just small pressure flakes would take it from the narrow edge of this tabular piece and what that gets you is not only a roughened surface for purchase, but it reduces the angle between the narrow and the broad face to less than 90 degrees. So that you can detach your flakes across here and the pressure flakes across this face are all of about the same length but they vary considerably in width so that the width must be a function of the amount of strength applied to the platform.

Don: Here no ridges ~~are~~ were used to guide those so that they spread out. They were allowed to spread because of the flat surface. These were also interesting to note that by pressure flaking also produces errailluare flakes but still are adhereing to the core or to the artifact.

Earl: They adhere to the flake ~~it~~ which comes off.

Don: No they still adhere to the core.

Earl: They adhere to the core itself.

Don: They are on the flake scar on the truncated part.

Earl: Right, they are on the negative scar of the cone. They remain on ~~the~~ that surface of the negative scar.

Don: The proximal end.

Earl: Right, near the apex of the flake scar where it was detached near the striking platform. Whereas on the percussion ones the erraillure flake ~~as~~ if it is pulled out of the cone on the flake drops free of the core. It doesn't remain there.

Ce. 31.15.12 (12)

#2

Don: Right.

Earl: O. K. This is No. 7 and it is a tabular piece of milky glass.

Don: That shows turning of the edges and this is bifacially flaked.

Earl: Yes, now this is not the same type of trapazoidal cross section as the other.

Don: No, this has been relieved and a second series of flakes have been taken to leave a sharper edge in order to make it's tool ovate. The next series will be considerably longer and can carry past the mid line or the median line of the tool to be.

Earl: Right, now that's on this face. What we've got is a flat tabular piece of milky glass here which has two narrow edges along the length and two flat faces and flaking has been done along the narrow edges which creates a slope and then across the face of the tabular item. Now we're talking about this one edge over here which has a greater angle to it, that is, it has more of a slope where this one isn't nearly vertical over here.

Don: Well the opposite side is just showing the stages has notbeen removed in order to leave these flakes on here, these are all step fractures and these will be met from the opposite edge ultimately if it was carried on. But this is to show just one of the stages, the opposite side shows that they have been met on this edge from both sides.

Earl: Right, now is this pressure flaking?

Don: This is all pressure flaking.

Earl: Right, on this one here where did your flake scar originate, right here?

Don: It has been retouched the second time which has erased the original pressure.

Earl: The original platforms. And those platforms are created by flaking in advance.

Don: Yes.

Earl: That's no. 8.

Don: This is just another stage of tool developement showing one face with the original expanding flake scars on this one surface, all done from one side from one edge. In order to make them more uniform, then narrow flakes have been taken

#2

entirely across ~~ffa~~ from one face to the other.

Earl: And this is pressure flaking too?

Don: ~~B~~ Yes, bending the flakes over the surface and now it is becoming more double convex in shape, but if the other series have been done on the opposite side then the artifact would have been uniform ~~xxxxxxxx~~ in section.

Earl: Right it would be lenticular in cross section. So what we've got is this one face with a broad expanding flakes which represent the step before these narrow parallel flake scars which run across the face, and the finishing step would be to put the parallel flake scars which run clear across this here on this face, so we have one face finished with narrow parallel flake scars all across it and one face which has not yet been taken in a final step ~~in~~ finishing. ~~T~~

Don: This is also to illustrate there may have been two or three retouch phases or series of retouch flakes in order to get your final artifact. Of course, those always go with the flakes all of these ~~xxxxxxxxxxxxxxxxxxxxxxxx~~ series as only by a study of the flake themselves are you going to be able to determine which stage in the production of the artifact the flakes are related to.

Earl: Right.

Don: The flakes are related to certain phases in manufacture of the artifact.

Earl: This is no. 9 and this is a ~~xxxg~~ slightly concave base large lanceolate point at about 6 to 7 inches long of milky glass.

Don: Well, Earl we'll go back to our cones and show as to how the cones have been used. But now this shows the behavior of the cone where cobbles are rolling it will get these force lines that are set up from bruising from the outside and this ~~sow w~~ shows one of the cones being projected in the block of material then it has been relieved by a series of flakes taken from the perimeter ~~taken~~ all the way around showing the a cone in the center. ~~Now~~

Earl: Now these are percussion flakes, free to leave the base of the cone.

Don: These are percussion flakes, and one can also notice that there is only one of the erraillure ~~sa~~ scars remains that they've all gone with the exception of this one right here.

#2

There's a little erraillure scar that still remains.

Earl: Oh, yes. Otherwise the flakes from the erraillure scar have fallen free.

Don: Right, and this shows the cone in the center one flakes intersects the cone accidentally, it was intention to free the fracture produced from a direct vertical blow on the piece of obsidian.

Earl: This blow you produced yourself?

Don: Right, and so I knew this was here so I relieved all the flakes around the perimeter to show the scar that was existing here, but wasn't obvious till the rest of these flakes? and been freed.

Earl: Here again it's a truncated cone in terms of the apex so that presumably a hard hammer was used.

Don: Right, a hard hammer was used.

Earl: O. K. This would be no. 10.

Don: This one also shows a cond right in the center this block radiating out in this direction clear to the edge, but only freed on the point by another flake.

Earl: Oh, I see it's only been freed on the one edge here by this flake, but you can actually see the base of the cone and that is the flake scar runs beneath the base of the cone and freed that edge. And the other side of the cone runs out here to the edge of the block, but this again is an example of a complete cone produced by a vertical blow with a hard hammer. And this is No. 11. Is this obsidian?

Don: Right. Here is another block showing much of the same but it shows the force lines being radiated out in the rippling from the compression from by a hard hammer.

Earl: Right , fissures and ripple marks show on this with a large, now this is the negative here?

Don: This is the negative, this is the flakes? from the opposite piece.

Earl: Right, and on the positive piece here you can see most of the cone here left in the block of material.

Don: There has been a slight shattering of the cone at the truncated portion and distorting it slightly.

Earl: Yes, at the tip there's been a little collapse of the platform. It looks like, is that what that one is?

Don: Right.

Earl: In fact, it's a rather interesting kind of concavity in the center of the apex there. It looks like it just collapsed out this way toward the base. And it would be easy enough here to take and remove some of this great mass and free the cone and then come up with a cone itself.

Don: The balance of the cone still remains inside of the block of obsidian.

Earl: Right, it's a very large cone, it must have been hit with considerable force.

Don: It was hit pretty hard on there. I was wanting to make one of these lemon squeezers and let the top piece fly off and drive the cone entirely through and then you can take the other piece and seat it right on top and it makes an interesting example of the behavior of these materials.

Earl: So we have two pieces of obsidian here, the cone and it's cover with a negative cone scar and a large block of obsidian, so there are two pieces and this is No. 12, I believe.

Don: This one is a repeat showing the same thing happens each time under the same conditions, but your mechanical forces and behavior of the material is constant.

Earl: Except that here the platform and the apex of the cone did not collapse, but otherwise it's the same thing and another very large cone and a large negative so that we have two pieces again of obsidian with a large cobble of obsidian here. Where is this obsidian from ?

Don: Glass Butte, Oregon.

Earl: This is Glass Butte obsidian, o.k. Is that true of all this obsidian here that we have been looking at here from ?

Don: yes.

Earl: O.K.

Don: One may note on this.

Earl: Was that no. 13 there?

Don: Yes.

Earl: No. 13 o.k.

Don: On No. 13 if one examines the surface of these ~~xxxxxx~~ cobbles from rolling they will find ~~x~~ multiple cones all over the surface and these have penetrated sometimes as much as a half inch or even more depending on their being pounded together with other cobbles. And all of this outer surface must be removed before one can have material that you can depend on the inside without these stresses and strains that are not visible to eye until one starts to work. This one has received two blows. The purpose was to cleave the nodule in half to produce a core type. It was struck ~~first~~ first without relieving it, the next blow was further down. This shows the crushed part of the truncation of the cone but it wasn't relieved entirely, it still remains inside .

Earl: Oh, I see, what we have here is cortex and then ~~there~~ here was a blow struck here first to create a platform, which took off the rind of the ~~obsidaan~~ obsidian and then in the base of the concavity produced by that flake a second blow was struck which drove off this block over here. Now.

Don: And this was struck at an angle to get a right angle intersection or a 90 degree intersection.

Earl: Now, here we have the whole cone again over here. This material and so the platform of the core the concavity of the flake ~~white~~ which serves as the platform remains with the negative scar of the cone in it. Over here we have that big cone and what it shows of course is well in a way of shearing the block of material this way. And what you get by shearing this way is then a very good striking platform with which to finish work on the shell material.

Don: The negative portion which has been severed in this manner is the part and is more usable as a core because you have a slight concavity.

Earl: Right, it's concavity along the lip here and this will give you then a place to set your tool.

Don: When you remove these lips on either side and will proceed by removing the blades from the edge. While the other since it is rounded on the surface or it is higher than your leading edges it has ruined the platform on this. Another flake is taken to remove the cone then it can be used as a core.

Earl: Well, that's such a large cone that it would really be hard to get much out of that except by coming in some way along the base of the cone.

Don: Along the edges, ya, you could take your blades off in this direction all the way around the perimeter.

Earl: Right, but you couldn't go through this mess here.

Don: No, that would have to be relieved or removed.

Earl: Right and that would take quite a bit of flaking across what is now the most likely platform which would mean you would lose a fair amount of material unless you relieve that cone. O. K. that's two pieces again of obsidian from Glass Butte's cobble and this is No. 14.— Very sharp edges.

Don: This is a most interesting specimen. It shows the blow being struck on the flat surface. This area here has received the blow.

Earl: Here again you took a flake and detached across the end of this cobble, this projection of the cobble in order to get a platform.

Don: Then to relieve the cone and to show the cone inside a blow was struck on this edge.

Earl: It went across this way. Across the platform.

Don: Right, and then can remove this part showing this big nice deep negative scar with the bulb or the cone fits? right? sides. Like the lemon squeezers.

Earl: Right, in fact this is so large a negative over the top of the cone that what we have is a clean area at the top in the platform, that is, it's simply went right on through here. Part of it collapsed, part of the platform collapsed. That must have been a rather considerable blow.

Don: The edge of this one was slightly supported in the sand and so it produced a reversed force from the base and caused a shearing and this is the splitting of a cone.

Earl: Right, now what we're seeing here with this, well it's actually shaped like a clam shell. This is not now the negative of the cone this is the shearing of the cone.

Don: Right, and the balance of the cone still remains. This is the natural edge and this is the shearing edge.

Earl: Right, and the sheared edge is quite noticeably peeled off here. and flat, particularly at the base.

Don: By a blow of high velocity and a support of the opposite edge a nodule may be cleaved by cleaving the cone and then one has it the positive and the negative cone scar.

Earl: This flake which has come off and which most people would take to be a core because of the indentation here. It would be very suitable for certain types of bifacial ovate kinds of implements, has enough mass and already has the oval shape. So there are three pieces.

Don: One a half of a cone, the other the negative cone.

Earl: It's kind of peeled that cone probably like an onion. It's probably not fully half the cone it is a portion of it, that's come off.

Don: This end here Earl shows the dissipation of the forces before they stopped on this far side here, a very interesting break.

Earl: Ya, it has just lipped here when this peeling of the cone and this second flake took place it caused this broad lip across here.

Don: This hackling on the surface is quite an interesting thing and very that you can actually feel the hackness down here, Earl. These are these little peculiar ridges between planes of moving material,

Earl: Right, well they would look like ripple marks except that they slope on one side and they are vertical on the other like step fractures going the opposite direction.

Don: But they are entirely rounded, and sometimes there is a little lip holding together much like water breaking, as the tide comes in, of the tide and these will relieve certain forces.

Earl: Just before you get white? water.

Don: Ya.

Earl: The lipping over. - Ok. This is No. 15.

Don: Now, there are three examples , I want to have these together here. This is possibly the best example this one right here is cone shearing it can be done repeatedly.And it's apex or hinge of the bivalve or the mollusc, Earl, there are still these little fine lines showing this scar and there is a fracture here and one here the same angle of our cone but it shows exact shearing in the center. But right at the apex you can see the angle of the cone it's still remaining in there. Now this hasn't been freed if these top edges are removed then the cone would stand up ? .

Earl: What you've done here with this one is to shear the cone exactly in half, just gone right through the middle of it which again gives you two very substantial masses of material, the edges of which would serve for striking platforms for making blades or detaching other kinds of flakes.

Don: It's an ideal core and let you go all the way around the perimeter of the face.

Earl: Actually, eventually what you do by doing that, to free that half cone. In fact you would be forced to leave probably that segment here and you would be working down as you came around the edge you'd be working up the tool.

Don: What one would do would be to strike right in the center of the cone but from the top vertically, and take off that whole damaged portion of the cone and then you would have a nice piece of material you could go all the way around.

Earl: Now, would you take it down against the rind.

Don: Right, From the top down.

Earl: O.K. I see. Now we have two pieces here and these together which illustrate the dividing of a cone in half, the shearing are No. 16.

Don: Showing ? pieced again is another example but the cone has been relieved in this case to show one half being relieved, showing the scars on this edge, there is a little lip of the cone right there, But this is another shearing along this side which has been relieved by flakes removed from the other edge to relieve this scar showing the cone was inside all the time.

Earl: So this here again is Glass Buttes obsidian cobble. The platform was created first then the cone was created and you sheared it Did you set up the cone first or did

shear as you created the cone.

Don: The cone was created first. For instance, we knew the cone was remaining inside then on one block it was relieved by removing some flakes from the outside, to show the cone scar, when in the block.

Earl: When this flake was detached this way, now how did we get this to shear here, in other words did you create the cone by a blow first and then shear this off.

Don: I sheared the block just like we were showing on the previous one. And we sheared this and broken the tip, but to show this half cone inside these flakes were taken off so that they intersected the previous cone fracture.

Earl: Now the first step was to take off of this flake here to create a platform.

Don: No it was perfectly flat on the surface right here, I mean this face here is perfectly flat here. And the blow was delivered vertically down on the block of stone. I cleaved this with stone then I took this half away and showed the cone remaining inside on one half only.

Earl: Well now why did it cleave the cone in half instead of coming off and leaving an intact cone, in other words did it cleave the cone because it was a vertical blow nearer to one edge is that what is happening there then?

Don: It was placed in the sand so there was no reflex. There was bi-directional forces that caused the cleaving.

Earl: Good, o.k. It's the support of the core which sends the force back. This is No. 17

Don: This is a small example here showing the collapse of the cone and the shearing. This is the sheared part of the cone, the opposite edge over here is the rounded part.

Earl: I see.

Don: And this is showing where the velocity is too great here getting a shattering and it ruins the material when this happens.

Earl: Right, instead of carrying on through it curves out and hinges out.

Don: See these little scars at the top right at the apex of the cone.

Earl: Oh, yes it shattered the cone on this side. Now has this been freed?

Don: It's been freed by striking into the other scar.

EarL: But in this case here, it ruined the block of material by shattering the cone sending the flake off which hinged. So it would be pretty hard to do much with that block of material.

Don: It would be nearly ~~impossible~~ impossible.

Earl: This is No. 18.

Don: I'll discard these this is not a good example here. I have to show the bruising of what happens Earl, rocks bruising from the outside causing these fractures that must all be eliminated before you can get into useable material.

Earl: Now this cone here is from natural bruising?

Don: No, this is one I produced, naturally.

Earl: And so you freed the cone to show it.

Don: But all rolled cobbles particularly of obsidian and of course other materials you must remove all these little cones that you can't see but it is indicated by these little moon like surfaces the cratering on the surface. that you know these moons are within the material so they must be relieved and removed before you can get into the solid material.

Earl: Right, those little moons those little concavities are actually the surface of the truncated cone, the platform from the blow. The way to free I suppose is to simply go far enough to be able to take the whole surface off.

Don: Right, it must be peeled like an onion, a cobble must until you can get into the middle portion of a cobble to get a good usable material.

Earl: That's No. 19.

Don: And No. 20 is our natural fracture either by frost it's internal pressures of expoliation or what happened, but this is the lid of a potlid.

Earl: Right, this is lid to the pot. What it gives you a cone which could not possibly have been struck since the apex of the cone was down in the pot itself and what it indicates since it's nearly symetrical almost perfectly circular cone is that it's popping or detachment came from a pressure either by ice or temperature change of heat or cold, either way, it produced a cone that popped that lid right off.

Don: Right off the deep edge you will find some little irregularity like it collected moisture occasionally. Now here is a little chunk of crypto-lite

possibly in here that absorbed moisture and then sometimes crystals will build up such as if it xxxxxx will absorb salt water, it will get this potlidding where no heat is connected with it and the crystal will grow creating forces inside that will cause these to pop out.

Earl: Right, when they pop as a lid they always pop symetrical which indicates that it's a cone which is created by pressure, and in this case, the lid is so large in this obsidian that you can see the cone which caused the detachment of the lid. But it's entirely a natural product.

Don: There is no force scars there is no radiation and rippling in one such as this so that one can tell this type of a cone type from those done by force by pressure or_____?_____.

Earl: No this has no fissures no ripple marks in it at all. And nothing that looks like a platform. This would be No. 20 this big one, this potlid.

Don: We speak of mooning Earl here is a little one that fits right around the truncated part of the cone.

Earl: Now that is caused by, what this simply xxxthat the radiating force around that cone detaches the ring xx as it goes down the cone.

Don: Occasionally xxxxx in aboriginal sites you'll find these portions, portions of those little semi circular half moon parts of flakes that one will know what they are .

Earl: Right. That's it on cones then.

Don: Right.