SHEARING, A BASIC STEP IN FLINTWORKING

Example F:VIIA/25 a to i

The term shearing is a term to depict a method of repidly removing excess stone. The term shearing as applied to stone knapping is to shear off portions of stone from artifacts and flakes and provide platforms for further pressure flaking.

The Process of shearing is brought about by placing the flake in the palm of the left hand, setting the tine of an antler which is held in the right hand and eighth of an inch, more or less(depending on the thickness) from the edge of the flake to be removed and pressing downward and away from you. This will remove the leading edge of the flake. A few well-guided PRESSURE strokes with the antler tool can quickly produce a projectile point preform from a flake.

(See Figure 1)
Making a projectile point is only one of the uses of shearing. This process of flaking can be used for dulling the edge so the flake will not cut the worker's hand. The same applies to the flake being used as a flake knife, dulling all but the portion of the flake to be used as a cutting edge. I use this shearing process for straightening a flake and to balance the flake prior to pressure flaking. (See Figure 2)

Figure 1.

Shearing may be done by holding the flake, or artifact to be, against a flat stone or using a pebble as a pressure tool. B.Robert Butler observed this process used by the Indians and called it "turning the edges". Shearing can also be used for quick preparation of the many different types of flake scrapers, gravers, perforators and pointing. To use the shearing process for putting a point on an artifact, I press from the point to be, toward the base and downward. This is done on both sides and then the point is turned over and this process is repeated.

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A help in recognizing shearing as one of the simple phases of flintworking, is to notice the lack of uniformity of the microflake scars, the crushed leading edge, the direction in which pressure was applied and the steep angle of the edge.

With this type of edge, it is difficult to tell the differnce between shearing and an acquired type of edge from actual function. An edge resembing shearing but caused by function may develop is the flake was used in one direction and held at the same angle. It might be of similar character, but it would probably not be as flat or in as straight a line and also, from use, irregularities may develop.

There also may be a certain amount of abrading on the edge from use, while the shearing process would not show this. (See Specimans)

RIGHT ANGLE EDGE FLAKING

F VII A/ 31

The method of manufacture is to place the tip of the antler-flaking tool in from the leading edge with inward and downward pressure. The downward pressure exceeds the inward pressure. The inward pressure must be sufficient to prevent the tool from slipping. The flake will feather out and will not hinge or step-fracture.

The purpose of this technique is to remove large amounts of stone by pressure. Also preliminary flaking to make preforms more regular before final retouching. Another use is for heavy notching for the purpose of hafting.

Edge Preparation and Sharpening.

F VIIA - # 33

This particular sawn blank is to illustrate edge preparation and sharpening cutting tools.

The method of manufacture is to place the point of the antler-flaking tool on the left hand corner of the blank for the first flake(the right hand corner, if one is left handed). The angle at which the blank is held is flat in the palm of the left hand which will control the angle in which the flakes will be removed. The width of the flakes will be governed by the spacing of the tool, usually on top of the next ridge to guide the next flake. If the point of antler is placed on top of the ridge sufficient stone is removed to leave an uncrushed edge. When one edge of the tool has been flaked in this manner, it can be used for a cutting tool, scraper and similar artifact. Also this type of an edge is adaptable for a platform to retouch the other side. It does away with the right angle edge.

F VIIA/31 Illustrates the mechanics of flaking on a right angle flake.

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ALTERNATING FLAKES

F VIIA / 34

This sawn blank is representative of a style of flaking made by removing a flake from one side and then the other by applying pressure from an antler-flaking tool. The pressure used is mainly downward. The scalloped edges are reminiscent of the edging done on antique mirrors, and the flakes removed are very similar except that the flakes on the blank are removed alternately. The flaking done in this way makes an ideal platform for collateral flaking similar to that used on the Hellgap Projectile Points. It provides a means of regular spacing as well as permits one to, at the same time, remove the right angle on the edge of the flint. However, this type of flaking does not have to be done on a square edge. It is adaptable to any edge. It was even used on the handles of the Danish Flint Daggers. (FVIIA/28) It was used on some Folsom Point edges and is not an uncommon style of flake removal.

The alternate flaking, when spaced right, provides an ideal saw. The fine spacing of this style of flake removal makes excellant serration on piercing or cutting tools. For examples see FVIIA 30 and FVIIA28

Cc. 30.11.1.5

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ALTERNATING FLAKE USAGE
ONE EXAMPLE

FVIIA/30

The methods described in FVIIA/34 are adaptable to this particular speciman. Notice platform preparation of this particular preform - The feathering of the edges, depths of bulbs of pressure and the centering of the edge.

USE OF ALTERNATING FLAKE PLATFORMS

FVIIA/28

When the projections as shown on speciman F:VIIA/34 are used a platforms and downward and outward pressure is used, the wide collateral flakes result if the pressure is applied at right angles and in line with the artifact. I do not know the geographical area or range of this type of flaking, but it is characteristic of Hell Gap points. The smaller alternating flakes illustrate the smaller type used on the handles of the Danish Daggers.

On this particular speciman, notice the hinge fractures. When pressure is applied by the fingernail or a pencil point on the portion of the flake still attached, you will be able to observe the bending of the flake by watching the spectrum.

USE OF ALTERNATING FLAKE PLATFORMS

F:VIIA/36

This is another example of F:VIIA/28

On this speciman, the point of the pressure tool was placed closer to the center of the edge.

USE OF ALTERNATING FLAKE PLATFORMS

F:VIIA/26

This speciman is similar to F:VIIA/28 and FVIIA/36 only more downward pressure was used, producing a longer flake.

F:VIIA/17

An example of flaking that resembles alternating flaking. The first row of flakes were removed from the right angle edge to provide platforms for second row of flakes, with the large bulbs of pressure leaving a hollowing effect on the under side. This type of flaking provides an excellant edge for a scraper.

F:VIIA/24

This speciamn was made first by shearing the edge as in speciman F:VIIA/25 then reflaked over the same surface. The stone was held flat in the palm of the left hand supported on the left knee. The pressure tool was held in the right hand, the tool held so the pressure applied by the hand comes from between the knuckles and third joint of the first finger.

First, the point of the tool is firmly set against the edge and, as pressure is applied downward and inward, ones muscular reaction must follow the flake. At the same time, the left hand is allowed to roll with the pressure so that the flake, as it bends, will curve over the surface of the blank. The method described is common to many of the artifacts having a convex cross section.

F:VIIA/35

This speciman is very much the same as F:VIIA/24. The pressure has been directed with more of a cross angle in relation to length of the blank, reducing the size of the ridges. The flaking was done from left to right causing a tearing of the left sides of each of the ridges.

F: VIIA/27

The flaking on F:VIIA/35 is much the same. The hinge fractures indicate that the amount of stone being pressed did not have enough strength to carry the flake on across the slab.

F:VIIA/19

This slab is to demonstrate the elimination of the ridges. The same method was used on F:VIIA/25

F:VIIA/23

The underside of this slab is to show a type of flake scar produced when a kind of serration is desired. The flat surface allows the flakes to spread, making a typical concoidal fracture.

F:VIIA/37

This type of flaking is common on artifacts larger than arrowpoints. Note how a flaw in the stone will distort the flake. Shearing was used for platform preparation.

F:VIIA/22

The above numbered blank is to illustrate a type of parallel flaking. It is made by first shearing the edge and after the first flake was removed, the point of the flaking tool was set over each pre-established ridge to help guide the next flake. A downward, inward, follow-thru pressure was used. The left hand, holding the speciman, is rolled s lightly as the flake is removed.

The character is quite common for lancelot points.

F:VIIA/ 29

This speciman is closely related to F:VIIA/22, other than a deeper placement of the point of the flaking tool was made and the downward force was fast in relation to the inward pressure. There is a sharp snap as the flake is detached. This method causes the flakes to feather at the distal ends. However, there are slight step fractures because the diamond saw has scored and weakened the material.

F:VIIA/20

An example of parallel diagonal flaking. This is a poor example, but it will illustrate the bending of the flakes. There are some very fine examples of this Ancient Man style of flaking the Western United States. In order to do this particular type, one must have a touch to feel the flakes bend - then follow them across the surface of the artifact.

F:VIIA/21

This example of diagonal parallel flaking is done by a different method of holding than FVIIA/20, and the flaking tool is pointing directly toward the edge. The blank is held at right angles to the left knee in the palm of the left hand, the edge in line with the tibia of the left leg. The knee of the right leg helps apply pressure to the right hand which holds the flaking tool against the edge of the material to be worked. Photographs will help in explaining the difference in position for the different results in producing the different styles of flaking. Compare with F:VIIA/20 For this s tyle flaking, the angle is very critical, the flakes are almost vertical and to get them to meet exactly is like trying to touch the points of two needles when one is blindfolded.

An example of hand-held parallel pressure flaking. Individual platform preparation. An attempt was made to keep all of the flakes parallel, but the bulb of force enlarged because the platform was not sufficiently freed at the pressure point. One can see how the ridge of the flake guides the next flake. If I had tried to remove another flake, it would have resulted in a hinge fracture because of the curve in the last ridge. Notice the last flake is 5/8 of an inch across and almost 2 inches long. This method of flaking is suitable for large thin bifaces.

When making this example, I used a crutch held against the right shoulder with the distal end of the flaking tool held in the right hand. The slab was held by wooden wedges. This permits greater pressure to be applied. Individual platforms, on which to set the tool, were made for each flake. The platform must be properly prepared so it will have enough strength at the point of pressure to prevent crushing when the flake is being detached. This type of flake removal is much more difficult than making a Mayan Knife for the cylindricalcore of the knife manufacture allows one to remove a thicker flake which is much easier to control. The flat surface on this example forces one to remove a very thin flake, which is subject to collapse. Please observe the flaking on the opposite side of the Museum number. Note the well-defined left ridge on Falke No. 1. This flake is thicker because it had the thick right leading edge to guide it. The No. 1 flake terminates in a step fracture because the angle of the downward pressure was not constant.

When No. 2 flake was removed, the step fracture of No. 1 flake caused No. 2 flake to collapse. The mass of stone was too great for the strength of No. 2 flake. When it collapsed, it distorted the ridge to guide No. 3 flake and this distortion is indicated through No. 3, 4, 5, 6 and 7 flakes. This example is to show the physical properties of the flint-like materials.

On No. 1 flake, notice the hairlike lines radiating from the point of force and toward the distal end of the flake. This feature is common on most flint-like materials and does show the direction that pressure or percussion was applied.

F:VIIA/16 22

The enclosed speciamn was preformed from a cobble of ignumbrite first by precussion, using a hammerstone, to remove the cortex on the bruised outside of the watertumbled gravel. Then a billet of deer antler was used to shape and thin the point.

It was first retouched by pressure with a hand-held tool to even the surface of the irregularities(see F:VIIA/37) left by the precussion work. Then the edges were sheared by pressure(see FVIIA/25) to make them more regular for the final pressure retouch. F:VIIA/29

Notice percussion flaking for preforming on one side and the pressure retouch on the other side. The pressure retouch was done from one edge only. The curving of the flakes go from one edge and off the other side. See FVIIA/20