

DEPARTMENT OF SOCIOLOGY
AND ANTHROPOLOGY



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Dear Don,

Thanks very much for the fine detailed report on the Wilson Butte artifacts. It will go well in the "Facts and Comments" section of American Antiquity. I've done a little editing and added an abstract, and here is a working copy. On page 5, you must see to the references to Swanson, Martin, and Longacre. Even if there is no specific reference to the use of the burin technique in print, you should refer to any published reports on the sites. If nothing about the sites has been published at all, you may simply say "personal communication". For Tixier's book, the year and place of publication is needed.

Thanks also for the comments on the artifacts Rob took down. They are from a site on Calling Lake, in the boreal forest zone about 140 miles due north of Edmonton. The site is shallow, just under the surface; and unfortunately has been disturbed by plowing. The points show a range from large stemmed old-looking forms to a little side-notched thing. So I am very uncertain about the age of the material. I'm guessing maybe between 2000 B.C. - A.D. I probably won't get a decent C14 date, since most of the wood found seems to be intrusive. I'd like to compare the material with what MacNeish got out of the Kluane Lake area in the Yukon, but the collection is in Ottawa.

We are all well here. The last cold spell has broken and it even threatens to thaw today. Clyde grows and grows. His linguistic ability has improved considerably. Soon there will be a small celebration when he is completely toilet trained.

Will we see you at the Northwest Anthropological Conference in Seattle next month?

Regards,

Ruth

A TECHNOLOGICAL DESCRIPTION OF ARTIFACTS IN
ASSEMBLAGE I, WILSON BUTTE CAVE, IDAHO

by Donald Crabtree

Abstract

A detailed technological analysis of four artifacts of Assemblage I of Wilson Butte Cave is presented. The artifacts described are a small biface, a true blade, a flake showing evidence of a burin technique, and a modified fragment of bone. The assemblage is in association with a radiocarbon date of 12,550 B.C. \pm 500 years.

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Assemblage I, from the basal levels of Stratum C in Wilson Butte Cave (Gruhn 1961), has recently been radiocarbon dated 12,550 B.C. \pm 500 years (Gruhn 1965). Because of the importance of these finds under controlled excavation conditions in a stratified site, detailed description will be given as well as an analysis of their technological aspects.

Biface (Fig. 1, A)

A bifacial artifact of fine-grained, dark-colored basalt. Source of material is unknown. This basalt is not abundant in southern Idaho; but, on occasion, some is found. ^{The} Point is broken, but the break occurred accidentally and not during the knapping process. Because it is broken, the complete form of the artifact is difficult to determine; and possibly the worker formed it in a manner which would permit him to alter either end into a tip or base. It is bi-convex in section; and was, possibly, ellipsoidal in shape. Workmanship is typical of the preforming technique which is usually done at the material source to lessen the weight of the artifact and eliminate transporting surplus material to the cave. Roughing out was done on a large primary flake (blank) by direct

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free-hand percussion using the core technique. The edge is slightly sinuous, indicating that the primary flake had a right angle edge which was removed by alternately striking one side and then the other. This technique provides a platform surface for each subsequent blow, and, therefore, eliminates the work of preparing a platform for each flake removal. The bulbar scars on the lateral margins are somewhat diffused, not salient, showing the percussion implement made wide contact on the edge of the artifact. A soft hammerstone, or an antler billet, was used with excellent control for the preforming; but no attempt was made to thin the artifact. The flakes terminate sharply, indicating the blow was delivered with considerable velocity. One side and one edge show consistent rhythm and control in detaching the flakes. Removal of flakes on this side has also left a well-defined ridge down the median line of the artifact. When completed and the final pressure retouch applied, such a tool would be fairly thick. However, it would withstand the strains of violent and vigorous use.

Even though it was broken, this tool appears to have served a functional purpose. Abrasion of the broken or truncated end may be the result of striking with a material other than stone. It could possibly have been used as a punch or wedge for splitting wood, for the opposite end (pointed, unbroken) is not bruised; but the small flakes thereon were definitely removed by force originating at the tip and directed toward the base, or the broken end.

Blade (Fig. 1, B)

A blade knife or dual-edged cutting implement of a mottled grey semi-translucent variety of chalcedony commonly occurring in pre-Tertiary vesicular volcanic rocks weathering out in the form of nodules or geodes. Such volcanic formations occur forty miles north of Wilson Butte Cave. The material is of a vitreous lustrous nature which may indicate artificial alteration by the thermal treatment. However, no final conclusions may be reached because all the original

surface which would allow a comparison of texture change has been removed.

The proximal end which contains the bulbar portion and platform has been removed; and, therefore, we have no clue to either the technique or core type. A few flakes have been removed at the proximal and distal ends to straighten the blade. Possibly, the worker was preparing to fabricate an artifact and then either abandoned or lost the piece. It is unlikely that it was abandoned, for the material is of excellent quality and of adequate size to be still workable.

The dorsal side of the blade does, however, bear the scars left by the previous removal of two blades. This blade was removed by striking a well-aimed blow directly in line with the longitudinal ridge (crest) left from the removal of the two previous blades. This blade, with its two scars on the dorsal side, readily demonstrates that the blade technique was repeated three times in sequence. This specimen illustrates a cultural trait pertinent to the early inhabitants of the Wilson Butte Cave. The blade is triangular in section with one ridge, rather than trapezoidal with two ridges. This is an example of a single ridge blade, which is one of the common styles of specialized parallel-sided flakes.

The parallel sides of the blade show functional scars that are typical of working wooden objects in a manner such as one would use a pocket knife. It was held at an angle and used diagonally in one direction. Then, as the edge became dulled from encountering knots in the wood, it was turned over and the other side used in the same manner. This type of motion causes the used flakes to be detached unifacially. As a result of my personal experience skinning bear with stone knives and blades at the Grasshopper site in Arizona, July, 1966, I conclude that when this type of blade is used for skinning and dismembering animals, the bifacial use flakes on the edge are hardly detectable by eye.

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Flake (Fig. 1, C)

This piece of good quality black ignimbrite was previously described simply as a "utilized flake". It has several interesting features. There is a distinctive platform area which indicates the use of a soft percussion implement, possibly a wooden baton or billet. The edge of the flake penetrated the percussor and was pulled from the core, leaving a distinctive lip and forming a diffused bulb which is characteristic of the wooden baton technique. More definite conclusions could be drawn if a greater population of flakes could be examined rather than just a single flake.

The platform part of the flake still retains a portion of the exterior of the pebble, or cobble, from which the flake was derived. The bruising and abrading of this surface is a characteristic of isotropic materials which are derived from a deposit of alluvium. There are gravel pits on the south side of the Snake River, some distance from the cave, which contain similar ignimbrite material. There may also be other occurrences of which I am not aware.

The platform of the flake is similar to the "Chapeau Gendarme". This type of platform is so called because it very much resembles the policeman's hat of the old French Gendarmarie. This is established and formed by the knapper when removing a flake from the core. He first removes a surplus flake from the core which leaves a bulbar scar on the face of the core. Then he removes another flake at the same place but striking in from the leading edge of the core. This produces a "Chapeau Gendarme" flake.

Apparently this Chapeau Gendarme flake was originally larger before the worker used one lateral edge of the original platform bearing the cortex for seating his tool to sever the flake longitudinally to make a break typical of the manufacture of burins. The burin break is the result of a distinctive technique and should not be confused with a snapped flake, for the burin break has two right angle edges whereas a snapped flake has a curved or rounded edge on one

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side. Also, the apex of the force lines determines the direction of applied force. This break has made a very sharp triangular tip on the distal end of the flake. It was then used until it became dulled and then was repointed. This was accomplished by the worker removing several micro-flakes, leaving a slight spur on the tip. The sharp edge of the flake shows very small use flakes removed bifacially from one surface from the middle of the flake to the attenuated tip. Then the flake was reversed and the other end was used in the same manner, producing the same type of use flakes; but they are removed from the opposite side.

The use of the burin technique for backing a flake or blade knife is not unique in North America. Occurrences have been noted in Idaho by Dr. Earl Swanson at both the Shoupe and Birch Creek sites (Swanson 19 , 19); and also in Arizona by Dr. Paul Martin at the Vernon site (Martin) and by Dr. William Longacre at the Grasshopper site (Longacre 19). When waste flakes are more closely examined, other occurrences will, no doubt, be found. The technique of backing by removal of a burin spall, either by percussion or pressure, results in a single type of burin core; and because it is considerably larger than the spall it is easier to identify. The spall is of functional value for shaping, forming and incising; yet, because of its size, can easily be lost due to the mesh size of most screens. There appear to be six or seven separate techniques of backing flakes and blades to be used as knives (cf. Tixier (19)-- an excellent coverage of burins on blades).

Modified Bone Fragment (Fig. 1, D)

This is a fragment of limb bone previously identified tentatively as a "flaking tool". The type of break on the fragment indicates that it was broken by man and then grooved on one of the broken edges. It was broken from a fresh upper limb bone by splitting lengthwise, causing the edges of the bone to be at right angles to the surface. One of the edges has been grooved by a burin type

implement. My comments on this bone may differ from that of most Archaeologists, for they are based on my experience in working bone by what I hope are aboriginal methods to make stone knapping tools. Splitting and modifying bone into usable pieces is a study and science within itself. When appraising early man sites, the question frequently arises--was it broken by man or carnivorous animals, i.e. dire wolves, hyena-like beasts, etc.? A quick answer to this question may be obtained by breaking some bones yourself and then examining the breaks on bones of those fed to zoo animals. The residue of bones from animal feeding will have breaks that are distinctive and which do have certain parallels with stone fracture. I have examined faunal remains from Pleistocene cave sites which were excavated by the University of California at (Berkeley) near Auburn and also Tracy, California. These sites contained remains of both horse and dire wolf. In these collections was the cannon bone of a horse which had been broken by the jaws of some large carnivore. These breaks were of a bipolar nature, leaving scars which were semi-conchoidal and directly opposite one another. Such breaks are not likely to be duplicated by man. When man places a bone on an anvil and strikes it to crack the bone and remove the marrow, the bone usually has a spiral break. If the bone is to be split, the ends are crushed to remove the spongy bone and then one end is placed on a support and the opposite end is levered apart by the use of a cleaver object. There are, no doubt, many techniques and preferences in forming bone which may indicate traits distinctive to certain groups of people.

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References Cited

Gruhn, Ruth

- 1961 The Archaeology of Wilson Butte Cave, South-central Idaho. Occasional Papers of the Idaho State College Museum No. 6. Pocatello.
- 1965 Two Early Radiocarbon Dates from the Lower Levels of Wilson Butte Cave, South Central Idaho. Tebiwa (Journal of the Idaho State University Museum) 8(2):57. Pocatello.

Longacre, William

19

Martin, Paul S.

19

Swanson, Earl H., Jr.

19

19

Tixier, Jacques

- 19 Typologie de l'Epipaleolithique du Maghreb (publication ? and place)