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Sept. 28, 1971

Dr. G.F. Will
Felsenhofstr 7
CH-8134 Adliswil, Switzerland

Dear Dr. Will:

Thank you for your letter of Sept. 21st and it is good to know of your interest in lithic technology. I do hope that I can help by describing the making of Perigordian and Magdalenian burins. Unfortunately, I have had little chance to examine the actual artifacts, but have discussed these with my friends, Jacques Tixier and Francois Bordes and have studied their publications illustrating and describing them. It is unfortunate that most illustrations of burins show only the direction of detachment of the blade and its resulting flake scar and not the direction in which force was applied to detach the blade.

One must apply the force - pressure, percussion or indirect percussion - at an angle tangential to the direction of the proposed flake scar. The worker takes advantage of the fracture angle of the cone of percussion and directs the force to correspond with this angle. I could show you in a few minutes a number of modes of manufacture and different burin styles but it is difficult to put into words and the manual manipulations of controlling fracture are hard to describe. Please excuse the art work but am enclosing a few drawings which may help where words fail.

One can make a wire gauge which will represent the cone of force, the direction of force, and the fracture angle of the cone. The wire gauge can then be placed on the edge of the flake or blade and the twisted part of the wire will show the striking angle for blade detachment. If the force is too great, the blade will be severed.

The percussor should be of material softer than the material being flaked. It can be of soft stone, hardwood, antler or bone. There are several ways of detachment: (1) The margin may be struck. (2) The flake or blade may be struck against a stationary percussor or anvil. (3) The flake or blade may be held firmly against an anvil and the blade struck off by a rodlike percussor (billet). Usually, the harder the percussor the more closely the compression rings are spaced. (4) When pressure is used, the burin core is held either in the hand or in a clamp. The compressor is placed on a platform and first downward and then outward pressing force is applied. The length of the burin blade is proportional to the ratio of downward and outward force and the design of the core. Usually when the blade is detached by pressure, there are no radiating compression rings. There are many technological differences in the preparation of the platform to detach the first burin blade. The second blade platform is often the blade scar of the first blade removed.

There is such a wide array of burin styles and types and modes of manufacture that it is difficult to describe the techniques of all except the simplest. I would suggest that if it is possible you get a copy of "Typologie De L'Epipaleolithique Du Maghreb", 1963 by Jacques Tixier, Paris, France. I think that you would find this book extremely valuable

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as he illustrates the making of a micro-burin and has excellent drawings of the different burin types.

I do hope that you have much success with your experiments.

Very sincerely yours,

Don E. Crabtree

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