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Dear Tom:

Thank you for sending the recent issue of the U.C. Contributions series containing your superb papers. To my knowledge, this is the first attempt to relate aboriginal obsidian cores to technological attributes. Mrs. Jones has already sent you a copy of "Flaking Stone With Wooden Implements" and am enclosing a paper on Corbiac Blades describing the punch technique of blademaking.

A core with parallel or sub-parallel sides and a platform area of ninety degrees to the long axis is not the result of detaching blades by the punch technique. When the punch is held vertical to the platform and struck, a conical core results. But, if the worker tried to use this same method to make a polyhedral core, the punch would slip and he would not get a polyhedral core. However, a parallel-sided polyhedral core can be made with the punch if both ends of the core are used as platforms and the platforms are less than a forty-five degree angle and the angles of the platforms are opposite each other. But, of course the core will be a bi-directional core and not, in a true sense, the uni-directional core. The nearest approach to a punch-made polyhedral core is one that has platform indentations made around the perimeter of the platform area. But after each series of flakes, a rejuvenation tablet must be removed and the core would not have the characteristics of those from Meso-America. Also, this type of punch core will have sub-parallel sides nearly approaching conical and the blade scars will not resemble those made by pressure. It will have deep bulbs of force and accentuated force rings typical of percussion. The largest core that Bob Heizer has from Papahuapa is more characteristic of the punch technique. However, with much skill and a soft hammerstone it could have been made by direct percussion. I only wish that we could review the actual artifacts together and come to more definite conclusions.

The collection of South Chilean artifacts sounds exciting and particularly the thinned bifaces. I hope that the collection will contain some of the stemmed fluted points and the flakes. Junius Bird sent me three fluted points from Patagonia and they were far more sophisticated than the stemmed fluted points from Fells Cave and El Inga. The fluting approached that of the Lindenmeier Folsoms. This is interesting because the surface flakes collected by Judge Coffin at Lindenmeier - before Roberts - were the manufacturing debris resulting from making very large thin bifaces, and not from the fluted folsoms. All of the Coffin flakes had ground platforms and were detached with great skill, possibly with a soft hammerstone. Later, Ed Wilmsen and I found a portion of one of the large bifaces in the H.H. Roberts collection at the Smithsonian.

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The geographical separation of the Chilean and Lindenmeier sites could only be coincidental but it is interesting. To my knowledge, there are no large antlered or horned mammals in South Chile and too bone would not be good for a billet. Hardwood billets require a great deal of velocity to remove large flakes and they also project the artifact with the blow. Will be interested to learn more of your material.

I, too, am interested in the Egyptian skills in flaking stone and particularly the beautiful flaking of the knives. It would be a real challenge to interpret and duplicate the skill of these people. Dr. Clark let Bordes and me examine one of these artifacts several years ago. We could not decide if they had been ground before the flaking or after. We tried grinding both sides and found that we were able to get more controlled flaking this way, but reached no definite conclusions. I do hope that in the future the corresponding flakes will be found for more diagnostic information can be derived from the bulb of force than from the scars. Even the denticulate edges pose a problem. It would appear that the percussor would be of a yielding material because the flake scars have a minimum of undulations that are characteristic to those produced by a tool that has a long interval of contact. Flakes detached by a hard hammer have closely spaced compression rings. Would really appreciate a copy of the paper on the Egyptian tech.

I am enclosing some unique obsidian samples from near Guadalajara, Mexico that you may find of interest. These need to be examined in sunlight.

Thank you again for the fine papers.

Sincerely yours,

Don E. Crabtree