

Route 1  
Kimberly, Idaho

April 2, 1966

Dr. Leonard Carmichael,  
Vice-president for Research and Exploration  
National Geographic Society  
Washington, D.C.

Dear Dr. Carmichael:

At the request of Dr. L.S.B. Leakey and Dr. Ruth Dee Simpson, I submit the following report on my visits and observations at the Mannix site near Yermo, Calif.

I have made three visits to the site to research flaking techniques and to view the material. All visits were by invitation, but I was not there in the capacity of an advisor. I am not qualified to interpret the archaeology or geology of this region and my report must be considered as the opinion of one who is attempting to interpret stone flaking technology. I am only qualified to report on the mechanics and behavior patterns of flintlike material and my conclusions may not, necessarily, agree with the qualified archaeologists.

I feel very honored to have been asked by a friend of Dr. Simpsons calibre to express my opinion on stoneworking technology and wish to clarify the basis of my conclusions of the Mannix material. Because of the magnitude of the Mannix site, the quality of work being done there by Dr. Simpson and the reluctance on my part to dampen the contagious enthusiasm of the workers, I withheld my disappointment of not finding more positive evidence of mans toolmaking. I did, however, make considerable effort to point out the need of flake assemblages or actual tools.

I first became aware of this site in 1964 when I learned from Dr. Simpson of Dr. Leakey's interest and intention to excavate in the area. I visited the unexcavated site and was impressed by the surface material found there because of the type of lithic material, the peculiar groupings of the tools and the distinctive techniques represented and, also, because I had noted similar or duplicate material at Temple Bar. The surface artifacts appeared to be a type of bifacial tool, but revealed embryonic stages of fabrication development and they demonstrated rudimentary techniques of percussion work. They were excessively thick, with the base of the tool left unworked and "hammerlike" and they lacked design for further thinning. Surface grouping was peculiar for I noted that the discarded flakes and debitage was represented by widely separated rings of debris, apparently representing the spot where each artifact was made and indicating that the worker moved from one to another desirable piece of material rather than collecting and depositing the usable material at one spot and making his tools in the usual workshop manner.

In February, 1965 I visited the San Bernardino Museum where I first saw some excavated material which I was told was taken from the upper level of the pit. This collection included a bifacial artifact of definite human manufacture. The balance of the material was interesting, but questionable. I then visited the actual site to view additional material. The laboratory material at the site gave little indication of any planned retouch on the edges and showed no order of flake removal. Generally, the assemblage of silex materials was a collection of pieces with natural planes of breakage, known as starch fractures. These pieces of silex were worn on the thin

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edges resulting in small, short, random overlapping flakes and were without design or regularity. The angles of force that remove these short, overlapping flakes must be considered with each individual specimen. But, generally, if the specimen was of a piece of silex that was tabular or flat, the flake scars were made by the application of force (pressure or percussion) at right angles to the flat surface of the piece of silex. Because of the veneer of bentonite clay and water deposits left on the surface of these tabular pieces, it was difficult to orient the exact lines and directions of force. Therefore, it was difficult to determine whether these flake scars were man-made or just natural breaks. Flake scars which result from function were missing on these specimens. The angles on the leading edges had little or no uniformity which eliminates the possibility of their being used for a functional purpose. There is a lack of large flakes and masses of silex that bear the scars caused by either percussion or pressure.

When Ancient man made his tools there resulted certain characteristics pertinent to both flakes and flake scars that are generally missing in the material from this site, i.e. - they are: the platforms, the bulbs of force, force lines on the dorsal and ventral surfaces and the diagnostic character of the proximal and distal ends of the flakes which are distinguishing marks of the flintworking techniques. Before an appraisal can be made and definite conclusions reached, one must have an assemblage of either the tools with the flake scars or the debitage and flakes removed from the tool.

My last visit to the site was in the month of March of this year to further view the material and to give a flintknapping demonstration to the crew. At that time, Dr. Simpson showed me further excavated material and I picked out four flakes and a "scraper-like" object that could have been man-made. This series of four small flakes were close to being duplicates. They were short, with a negative flake scar on the dorsal side and what appeared to be a wide flat platform and they showed a diffused bulb of force. These flakes are relatively thick at the proximal end and terminate at the distal end without margin. However, it is possible that such flakes could be produced by natural causes. Another example from the site is a large primary flake (the scraper-like object) with a well-defined bulb of force and an expanding distal end. The margins on the perimeter of the flake show multiple small, short flake scars. The flakes on one edge were removed by force applied from the dorsal side. On the opposite edge force was applied from the ventral face. The distal end of this scraper-like object showed force was applied from the dorsal side - in reverse to the normal scraper. This object, if found in an occupation zone in association with bone or charcoal, would be accepted without question as being man-made.

Since there was only one possible tool and a few flakes that I could accept, which could also be duplicated by natural movements and pressures in the alluvial fan, it is impossible for me to draw a definite and final conclusion until a quantity of tools or flakes can be assembled that have the definite planned, controlled flake scar character of the toolmaking industry.

Sincerely,

Don E. Crabtree  
Research Associate in  
Prehistoric Technology

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