

Route 1, Box 39
Kimberly, Idaho
83341

Sept. 25, 1969

Dr. Clarence H. Webb
The Childrens Clinic
1560 Line Avenue
Shreveport, La. 71101

Dear Dr. Webb:

Thank you for your letter of August 30th regarding the artifacts found in Louisiana and congratulations on your interest in the thermal alteration of siliceous material. Marie Wormington has told me something about your artifact some time ago.

The color change may be due to the presence of yellow oxide of iron in the material which would change to red by oxidation. The color may not alter throughout the entire surface but only on the part which is near the surface of the sand during the treatment. Alteration requires covering the flakes with sand (or other material) to evenly distribute the heat. The color change is only incidental, however, for it was a texture change the aboriginal was after. I do not feel that this change could be the result of function, i.e. carving bone - as the temperature required must be in excess of 450° F.

Thermal treatment is a process used to alter the material to a more vitreous and glassy texture thereby making it more responsive to force and certainly producing a sharper cutting edge. The change usually occurs around 500° F. You may like to make a few experiments which can be easily done by burying the flakes in sand in an electric skillet - or deep fryer - and raising and lowering the temperature at fifty degree intervals every thirty minutes. During this process, do not lift the lid if the fry pan and when maximum temperature has been attained, allow the pan to cool undisturbed (overnight) before checking. Then remove a small flake to determine the texture change.

If you would like to send some material, I will be glad to give you my opinion and the results of tests. I would prefer the natural material if it is available.

Thank you again for your interest.

Yours very truly,

Don E. Crabtree

Cell 11.6.12