Unusual Milling Stone From Battle Mountain, Nevada

By Don E. Crabtree

An unusual milling stone was found on the surface near Battle Mountain, Nevada, by Mr. Ray Sims of that city. The milling stone has a distinctive form unlike the common mano used aboriginally to reduce seeds and other vegetable material. When I expressed a desire to analyze the design and study the functional wear pattern, Mr. Sims gave me the artifact to be donated to the Idaho State University Museum. Unfortunately, when I washed the soil from the artifact, I used a stiff nylon brush and only then did I notice that particles of turquoise were being removed with the dirt. However, when th eartifact was dry, I noted it still retained numerous flecks of turquoise and minute pieces of red cinnabar firmly imbedded in the vesticules. Mercury mines are now being worked some twenty miles north of where the milling stone was found, and turquoise mines are in the vicinity. However, neither turquoise nor red cinnabar (a mercury mineral compound) is found in this vicinity in basalt.

The milling stone is 22 cm. in length, 9 cm. wide, and 4 cm. thick. The dorsal side is not worn like the ventral side and shows a natural filling of vesicules with what appear to be olivine, calcite, and other crystalline minerals. The igneous rock appears to be considerably denser than the common extrusive basalt.

The milling stone has been carefully shaped by an unknown technique. There is no evidence of a pecked surface. The sides are convex and the top is slightly rounded. The ends on the ventral side are curved toward the dorsal side and have rounded corners. The ventral side is quite flat. A dull functional polish is present on the ventral side, and the polish is even more pronounced on each convex end. The dorsal face and sides have acquired a sheen, probably the result of constant contact of the worker's hands.

When I examined the stone with a 15X triple hand lens, I noted forty or fifty flecks of turquoise still imbedded in the vesicules. One turquoise flake shows a high polish, probably the result of contact with the rubbing stone or board. The innermost deposits within the vesicules were cinnabar, indicating that the milling stone was first used to grind red pigment, then turquoise. The metate or rubbing board used with this stone was probably of special design to conform with the hand milling stone, but we do not have this for verification.

The finding of two colorful mineral pigments in the working surface of the milling stone definitely designates this specially-designed implement as one used by a maker of paints or powders. There is little doubt that colors like the sky blue of turquoise and the beautiful red of cinnabar would be held in great value by artists of the past and present. Recently, Professor Francois Bordes and I discussed my conclusions about this artifact being used as a milling stone for grinding minerals for making paint and he agreed that this was a logical deduction. He told of his father-in-law, a well-known European artist, always grinding his own pigments from mineral compounds and then blending them to his own liking. Colors compounded from different mineral salts do not fade and are more enduring. Paints derived from ground minerals remain bright through the years, while those painted from organic materials generally fade and lose color distinction. It is common knowledge that many of the old art masterpieces now in collections and museums were created with paints derived from colorful mineral compounds.

We can only postulate the functional employment of such paints made by prehistoric man made from turquoise and cinnabar, but we do have some ethnographic accounts of crushing minerals for paints. We do have evidence which indicates that he used hematite for cosmetic purposes—such as adorning himself for battle and ceremonials; and the practical use of this mineral to protect his body from sunburn. This subject is covered quite extensively by Sydney H. Ball, *B.A.E. Bulletin* 128, Antropological Paper No. 13 (1941). Crushed and powdered minerals were also used for means of divination, votive offerings to the Gods, medicinal use, and for abrasives (Ball 1941:4-6). Ball (1941:4) states:

> Pigments.—Mematite, malachite, and azurite were not onily widely used as pendants and in other ways in the mass but, when crushed, as pigments. The latter two furnished the Pueblo people their favorite colors—green and blue. Among the Navaho crushed turquoise was used to paint certain ceremonial objects (Pogue, 1915, p. 103). The green used to dye the wool of Chilkat blankets was derived from copper ores. The British Columbia Indians also used malachite as a pigment. The Pawnees and Mandans heated selenite and from the powder made a whitening used in tanning buckskin. The Navaho medicine men used gypsum as chalk in drawing and the Pueblos merely powdered, or burnt and mixed it with water as whitewash. Calcined gypsum powder was used by the Omahas to clean, whiten, and dry the sinews binding feathers to their arrows. The Aztecs used chimaltzatl (selenite) to whiten their paintings (Clavigero, 1807, pp. 16-17). The California Indians procured body paint from a "vermillion cave," the outcrop of the New Almaden

mercury mine. Cinnabar was also used by the Aztecs, the Mayas, and the Peruvian Indians. The beautiful pale green brochantite of the Corocoro copper deposit, Bolivia, was used by the local Indians as a source of green pigment before the Spanish arrived (Berton, 1936). The Indians used the brilliant red hewettite (a hydrous calcium vanadate) to make pictographs on the sandstone cliffs of Emery County, Utah. Within one-half mile are commercial vanadium deposits. Black pigments were produced from lignite (Pueblos, from manganese dioxide (Pueblos and Californians), from coal (Haidas), from graphite (New York, New England, and Alaska Indians and Eskimo), from sphalerite ore (Pueblos), from micaceous hematite (Yukon Indians), or from galena (Apache-Yumas). The latter also used calcite and magnesite as white pigments. The Oubeways, on the other hand, used iron sulphate derived from decomposing pyrite as a black dye. The Seri, inhabiting Tiburon Island, Sonora, used dumortierite as a blue face paint (Kroeber, 1931, p. 27). The Pueblos used jarosite in addition to yellow ochre for yellows and browns (Cosgrove, 1932).

Further, analysis of the blacks and reds of some of man's earliest paintings in Southern Europe also shows that they were derived from the oxides of manganese and iron. Even today, special techniques are used in paint manufacture to finely grind and mix mineral pigments and oils to produce paints similar to those used by prehistoric men.

The design of the aboriginal milling tool shows that it was used in a rocking motion to crush large particles and then a dragging motion back and forth to further powder the pigment mineral. Both ends of the underside of the stone have assumed a use polish from the gentle dragging of the material to the center of the milling board or stone, which, unfortunately, was not found. Hopefully, one day such an object will be located which matches the Battle Mountain hand stone.

One can form several significant conclusions from the specialized Battle Mountain milling stone. Archaeologically, hand stones, whether they be percussors used for flintworking, pestles, manos, rubbing stones, and others of questionable implied function, have been noted and then cast aside as being non-diagnostic. It would be advisable to examine each one carefully with a microscope, for it is possible that they could contribute considerable information regarding extinct cultures. The Battle Mountain milling stone has certainly made me aware of future evaluation of the materials imbedded in the cavities, cracks, and fissures for a more accurate typology of these hand stones. Microscopic examination of these substances imbedded in the milling stones can be of great value to determine the actual use of such objects.

Acknowledgements

I wish to acknowledge the assistance of Earl H. Swanson, William Statham, and Karen Thomas in the preparation of this paper; and Lloyd Furniss for the photograph. For those interested in further studies of function see Andrews et al. 1973.

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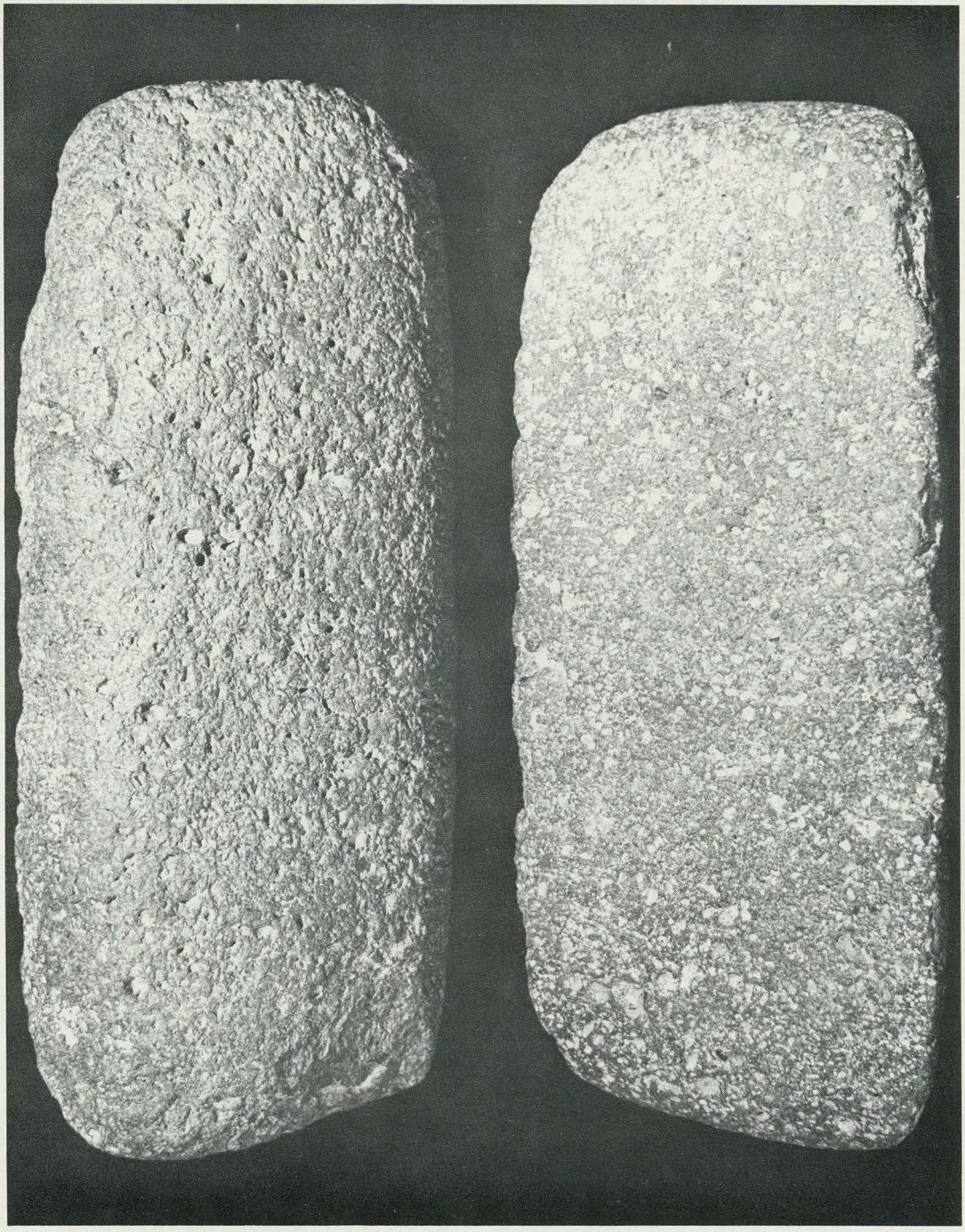

UNUSUAL MILLING STONE FROM BATTLE MOUNTAIN, NEVADA

Fig. 1 Top (left) and bottom (right) views of Battle Mountain hand stone used for grinding cinnabar and turquoise. Length 22 cm. (ISUM Cat. No. 210256)

A CLOVIS FLUTED POINT FROM THE NEZ PERCE COUNTRY

By Stephen R. Potter and David D. Aageson

Through an agreement of exchange initiated in 1868 between the Smithsonian Institution and the Army Medical Museum, crania from the Smithsonian collections of human and comparative anatomy were donated to the Army Medical Museum in return for ethnological items collected by surgeons serving at field hospitals throughout the West. One such surgeon-collector was Edward H. Storrer, a civilian contracted by the United States Army. Storer was stationed at Fort Lapwai, Idaho Territory, from 23 November 1866 to 26 July 1869. The fort was located within the Nez Perce Reservation and Storrer's duties provided him ample opportunity to associate with the Indians. As a result, Storrer made a collection of twenty-two ethnological items and sent it to the Army Medical Museum where it was forwarded to the Smithsonian and accessioned as part of their collections on 14 November 1869.

Among the artifacts in Storrer's collection is NMNH specimen No. 9023, originally identified on its history card as a "Spear Head of flint" (Fig. 1). The specimen is a lanceolate shaped biface, 13.2 cm. long, 3.6 cm. wide, and 0.86 cm. thick. The lateral edges have been ground from the base for 2.5 cm. and 2.9 cm., respectively, and the basal concavity measures 0.56 cm. Two flakes have been removed from the base of each face to produce flutes 3.4 and 3.1 cm. long. The artifact was manufactured from a high grade, light tan cryptocrystalline silica, with marginal retouch averaging two to three flakes per cm. Upon examination with a Spencer, sterobinocular microscope using powers from 20 to 80X the surface of the specimen was observed to have an overall, relatively smooth and even pattern of wear which has dulled flake scars along their ridges and breaks. Striations were few and in no particular pattern.

Typologically, the artifact shows affinities to the Clovis Fluted points from the Simon, Idaho, (Butler 1963: Fig. 3) and Dent, Colorado, sites (Wormington 1957: Fig. 12). The specimen is rather thin relative to its length, well made, and exhibits considerable marginal retouch for a Clovis type. The latter feature is characteristic of the Simon Site points, whereas on the Dent Site specimens marginal retouch is not as well developed. In contrast to the points from the Simon Site, this specimen is not quite as large and has a more deeply indented base. Both the primary bifacial and secondary marginal retouching of the preform, from which the Clovis point was made, appear to have been produced by pressure techniques.

Although the exact circumstances surrounding Edward Storrer's acquisition of this specimen are unknown, it has been assumed that the Clovis point was found in the Nez Perce country, and perhaps kept by its finder to become part of the contents of a medicine bundle or bag. George Metcalf (1973) has suggested that it might have been found east of the Rockies while the Nez Perce were "raiding" out onto the Plains or hunting with the Crows. However, this specimen is so similar to the Simon Site points that it is more probable for its having been found in the Nez Perce country of present-day Idaho.

Swanson stated in an article published in 1961 that the Clovis point had not as yet been identified in Idaho archaeology. Since that writing, Butler (1965) has reported the surface finds of several Clovis points and the discovery of the Simon Site (Butler 1963; Butler and Fitzwater 1965). Therefore, it is hoped that the descriptive data offered here will prove a useful addition to the paucity of information concerning Clovis artifacts in Idaho, as well as to put on record what is probably the earliest documented case of an ethnologically collected Clovis point in North America.

Acknowledgements

During the course of the research for this article, the junior author, David Aageson, was killed in an automobile accident. This article is dedicated to his memory and to the contributions which he made to anthropology.

Also, the senior author wishes to express his thanks to Dr. Dennis Stanford, Paleo-Indian Specialist, Smithsonian Institution, for his advice and editorial comments.

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