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Man-Made Artifacts From The Red Willow Gravel Pits

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Hell Gap and Frederick Points pumped from gravel pits in Red Willow County to extend the geographic range of these point types. They indicate that western Nebraska was occupied during the late Pre-Boreal and Atlantic I climatic periods.

† † †

INTRODUCTION

The Red Willow gravel pits are located on the flood plain of the Republican River Valley in southwestern Nebraska (Fig. 1). Sand and gravel are pumped from as much as 35 feet below the surface. Frequently, Late Pleistocene or Holocene fossil bones are pumped from the pits (Corner, this volume) along with an occasional man-made artifact. While the provenience of these specimen is unknown, their presence in these gravel pits extends the known geographic distribution of these point types.

EVIDENCE OF MAN

Five, flaked, stone tools from the Red Willow gravel pits are available for study through the courtesy of the pit operators, Frank Gillen, Clarence Gillen, and Lee Davidson. The clear, sharp definition of the flaking patterns indicates that these artifacts had not been carried far from their point of deposition. The artifacts include two lanceolate projectile points and the tip of a third (Table I) along with two knives or blanks. The tip of a fourth projectile point was found embedded in the proximal end of a bison humerus, well within the range of *Bison antiquus* from the Scottsbluff Bison Quarry (Schultz and Eiseley, 1935, 1936). All four of the points and one of the knives were pumped from Rw 101, while the second knife is from Rw 102. The point embedded in the bison bone is in the collections of the University of Nebraska State Museum (U.N.S.M. 48533), while the other artifacts are in private collections. Lee Davidson, the pit operator of Rw 102, reports that other artifacts have come from his pit, but they were not available for study.

Projectile points

The first point is characterized by parallel flaking, a concave base, pronounced basal thinning, and heavy basal grinding (Fig. 2). On one side of the point, oblique flakes

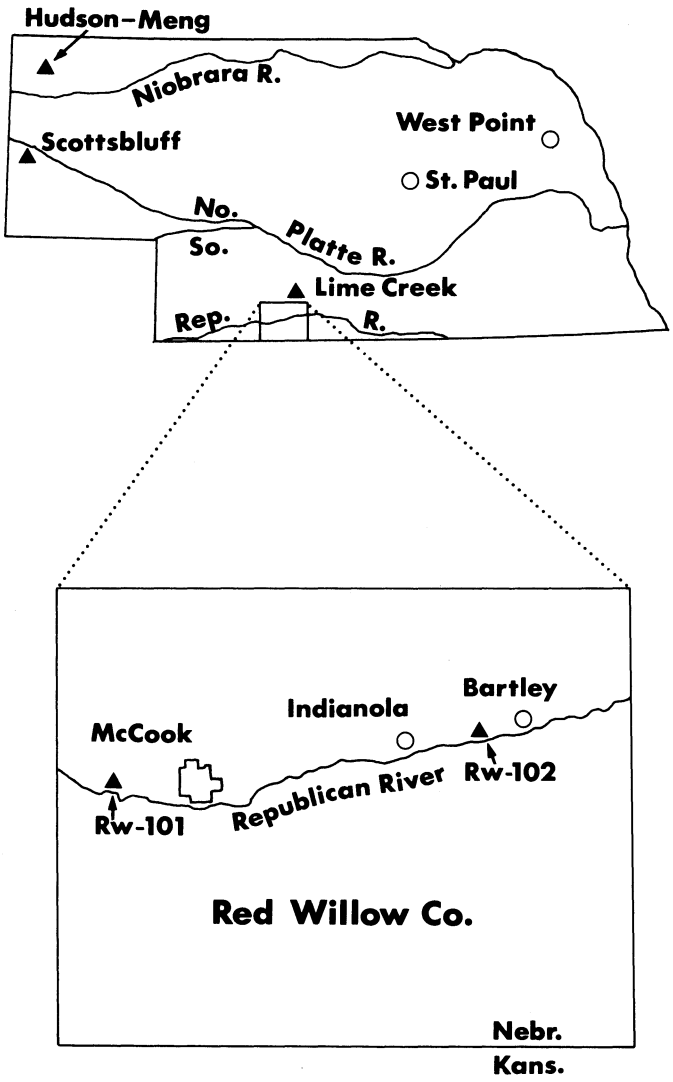

Figure 1. The State of Nebraska showing the location of selected archaeological and paleontological sites.

Table I:

Metric Characteristics of Projectile Points
From the Red Willow Gravel Pits

Attribute	A75.6.1	A75.15.1	A75.15.2
maximum length	(47.5) mm	75.0 mm	85.0 mm
maximum width	25.0	28.0	27.0
maximum thickness	7.0	7.0	8.0
basal width	–	21.0	27.0
concavity depth	–	–	3.5
hafting thickness	–	5.0	6.0
hafting width		21.5	26.0
hafting index		.233	.230

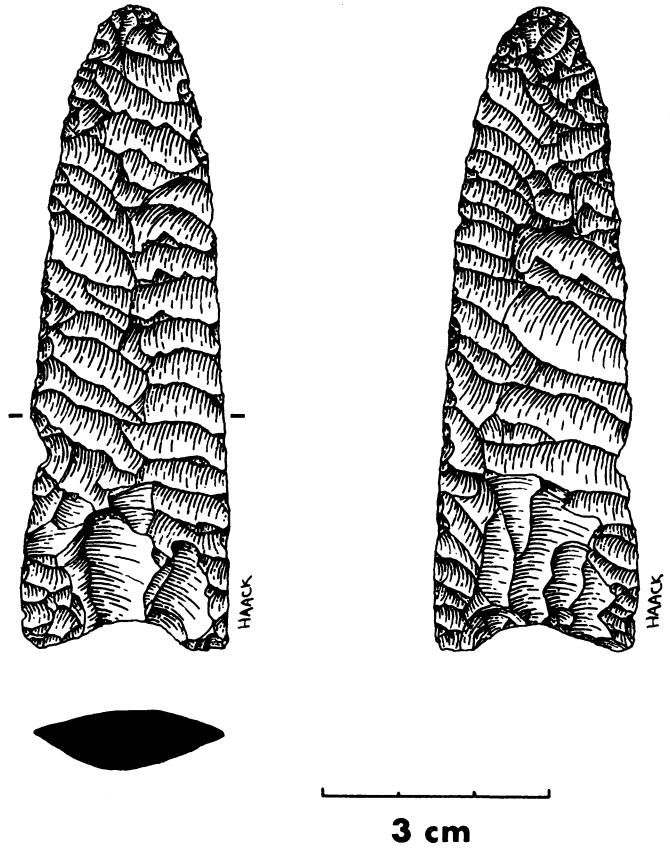

Figure 2. Frederick Point (A75.15.2) from Rw 101.

slant from upper left to lower right and usually carry across the mid-section of the point without a noticeable medial ridge. On the other side, the flakes are closer to horizontal and tend to meet in the center where they form a slight medial ridge. This point is classified as a Frederick Point (Irwin-Williams *et al.*, 1973: 50) which is distinguished from the Jimmy Allen Point (Mulloy, 1959) mainly by the depth of the basal concavity.

The other two points fall into the Hell Gap type (Fig. 3). They are characterized by lanceolate shape, controlled percussion flaking, and, on the complete example, by a straight base with basal thinning. The complete point is nearly identical to points from the Casper site on the North Platte River in central Wyoming (Frison, 1974; Figs. 1.39 - 1.43).

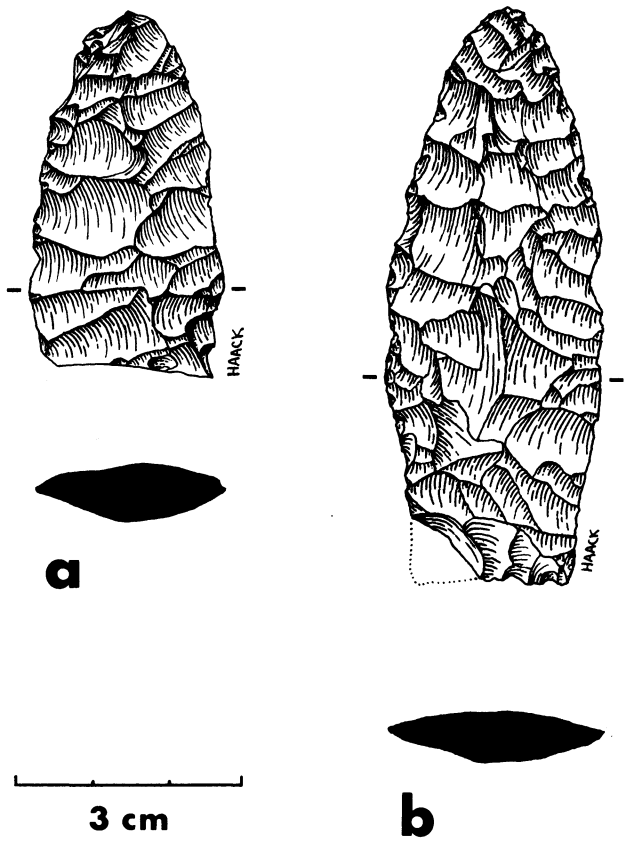

Figure 3. Hell Gap Points from Rw 101:
a, A75.6.1;
b, A75.15.1.

The fourth point is so deeply embedded in the bison bone that the flaking pattern could not be determined. The wound was not fatal since the bone had begun to grow over the point fragment. The artifact was not removed from the bone since its value as an exhibit specimen far exceeds the value of discerning the flaking pattern on a point tip. Its association with *Bison antiquus* is compatible with the known age of Hell Gap and Frederick Points.

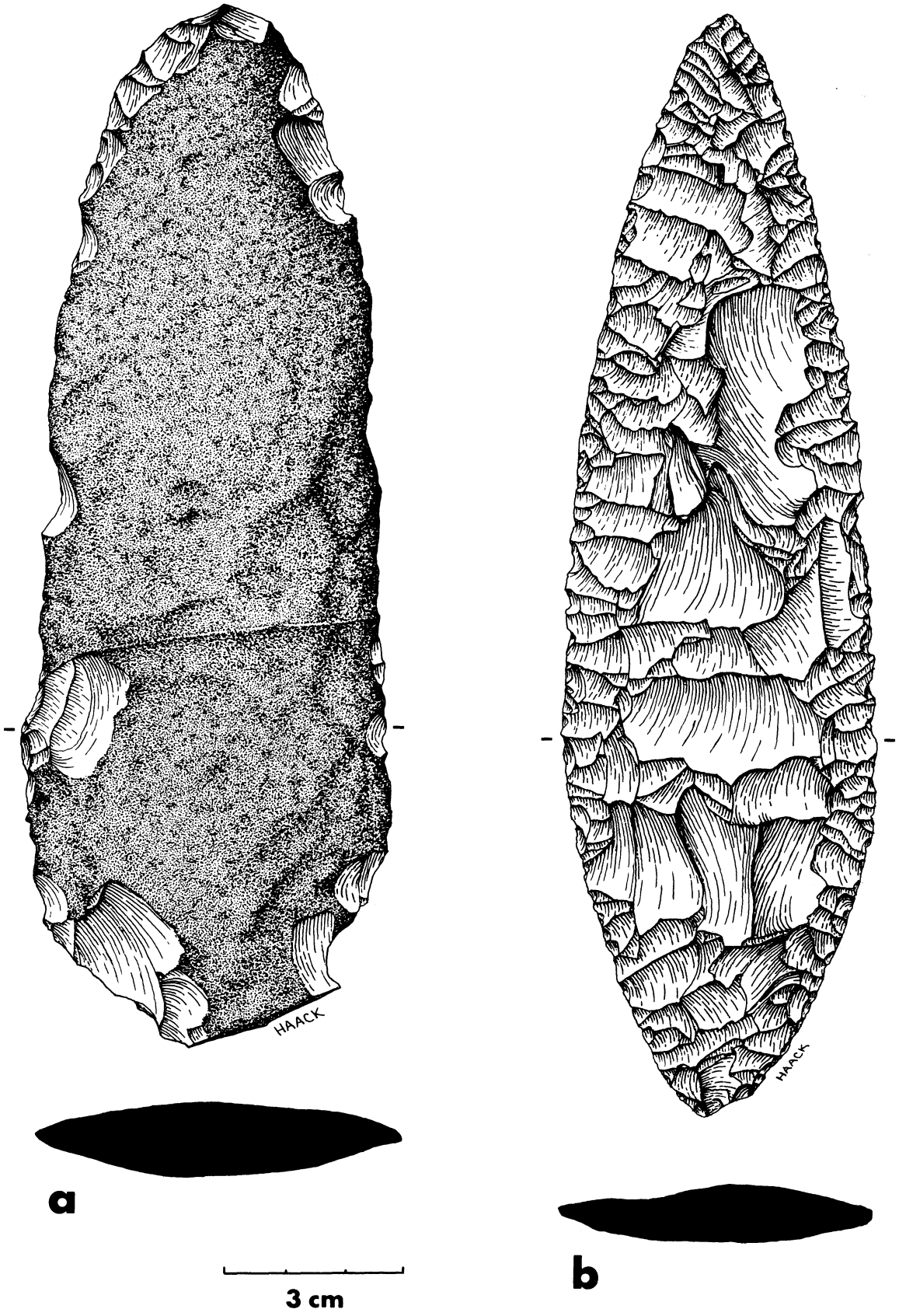

Figure 4. Knives from the Red Willow gravel pits:
a, A75.6.2 (Rw 101);
b, A75.7.1 (Rw 102).

Knives

One of the knives is a thin, elongated knife made of yellow jasper. Large shallow percussion flakes are found near the center of the implement, while the edges are trimmed to shape by careful percussion flaking. This knife form first appears in the Agate Basin and Hell Gap levels of the Hell Gap sequence in eastern Wyoming (Irwin-Williams *et al.*, 1973: 47-8, Fig. 5.5).

The other knife is similar in size and shape, but the flaking pattern is quite different (Fig. 4b), perhaps because it was never completed. This piece is particularly interesting because it was made from a thin band of yellow jasper which had not been entirely separated from the matrix. Use of such thin bands of raw material would have facilitated the production of such large, thin knives.

DISCUSSION

The stratigraphic and temporal position of Hell Gap and Frederick Points has been established by excavations at Hell Gap and other sites in eastern Wyoming. Hell Gap points date from about 8100-7500 B.C., while Frederick and the Closely related Jimmy Allen points date from around 6400-6000 B.C. (Frison, 1974; Irwin-Williams *et al.*, 1973: 48, 51). These time periods correlate with the late Pre-Boreal and early Atlantic I climatic periods suggested by Bryson and his co-workers (1970). However, we know little about the conditions which existed during these periods in western Nebraska.

Since these point types were found in gravel pits, it is apparent that their makers were utilizing either the river valley itself or the bluffs adjacent to the valley. Now and in the recent past, the floodplain of the Republican River valley has been characterized by a floodplain and prairie environment as far west as eastern Dundy County (Kaul, 1975), about 60 miles west of the Red Willow gravel pits. Mastodont bones from the gravel pits indicate that gallery forest had also stretched far into western Nebraska at some time during the Pleistocene, but there are no woodland fauna from the pits which would have been contemporary with man's occupation of the area (Corner; this volume; and personal communication). In contrast, such woodland fauna has been found in gravel pits near St. Paul and West Point, Nebraska (Corner; personal communication). This may mean that the upper Republican River valley was forest free during part of man's occupation of the area.

One of the greatest needs in Nebraska archaeology is to determine the environmental conditions which prevailed during man's occupancy of the state.

ACKNOWLEDGMENTS

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