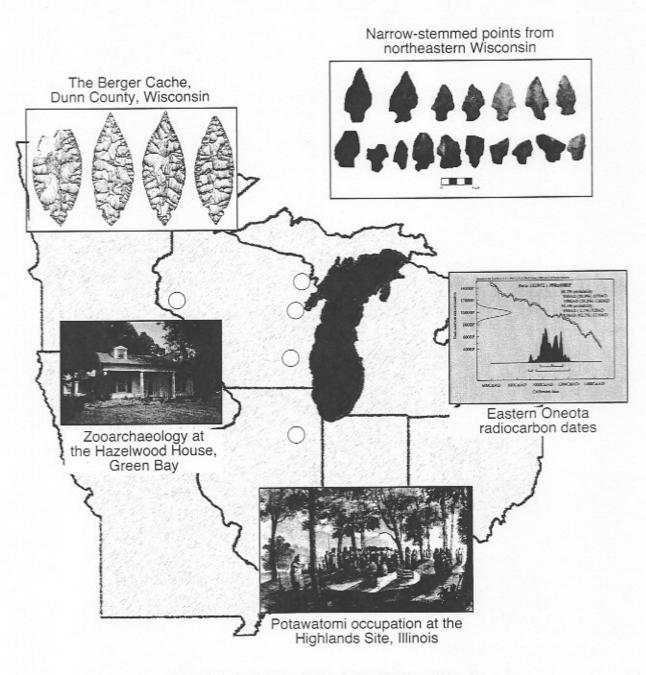
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The Berger Cache of Turkey-tail Points from Dunn County, Western Wisconsin

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ABSTRACT

The Berger cache is composed of four side-notched, Fulton variety Turkey-tail points made of blue-gray hornstone from the southern Illinois or Indiana region and stained with red ocher. These bifacial blades were found eroding from a sandy creek bank of the Red Cedar River. No other materials were associated but Turkey-tail points are commonly associated with the Red Ocher burial complex, which is believed to date around 1200-400 B.C. in the Upper Midwest. Although slightly damaged by plowing and careless handling after discovery, these specimens do not exhibit evidence of transport abrasion or ritual killing. The Berger collection is significant because it extends the distribution of Turkey-tail point caches much farther into northwestern Wisconsin than previously recognized.

INTRODUCTION TO THE DISCOVERY

One hot and sunny day in the summer of 1968, three boys were hunting frogs and playing along Sand Creek, a small tributary of the Red Cedar River in Dunn County, Wisconsin. Running to the edge of the bluff and jumping, then sliding and rolling down the steep sandy bank was a favorite past time. But on this day, as the boys laughed and tumbled down to the trickling creek at the base of the sandy slope, they heard a bright tinkling noise behind them. Turning to find out the source of this unusual sound, they discovered three large "spear points" made of sparkling gray flint. A few years later, a fourth spear point was found in the same location (Figure 1).

Two of these boys were my cousins and I was the third. Over the years, the collection has remained in the possession of my aunt and uncle, Mr. and Mrs. James Berger, after whom this cache has been named. The find was publicized briefly in the *Dunn County News* and the Dunn County Historical Museum, but no professional documentation has been made. This paper seeks to describe the artifacts and their context and bring this noteworthy find to the attention of the professional community.

The Berger cache is situated in the glaciated landscape of the northwestern arm of the Central Sand Plain (Figure 2). Legal description of this location is the NE 1/4 of the NE 1/4 of the NE 1/4 of Section 21 in T. 26 N., R. 13 W., which places the find on the right (eastern) bank of Sand Creek, a few kilometers above its confluence with the Red Cedar River. The farm field at the top of this sandy bluff was fallow at the time of this discovery, but had previously been under cultivation. Today the field remains fallow and is heavily overgrown, obscuring even the steep slope down to the creek. No other artifacts or bones have ever been found at this location, although it has not received professional field investigation.

TURKEY-TAIL ASSOCIATIONS

These four notched bifacial blades from the Berger cache are classified as members of the Fulton variety of Turkey-tail points (Didier 1967; Justice 1987:174-179). It is commonly recognized that Turkey-tail points are associated with the Red Ocher burial complex in the Upper Midwest where they are sometimes designated within the chronological period described as the Archaic-Woodland Transitional (1500-100 B.C.), which is marked by various elaborate mortuary complexes that appear to transcend local cultural traditions (Mason 1981:201-236;

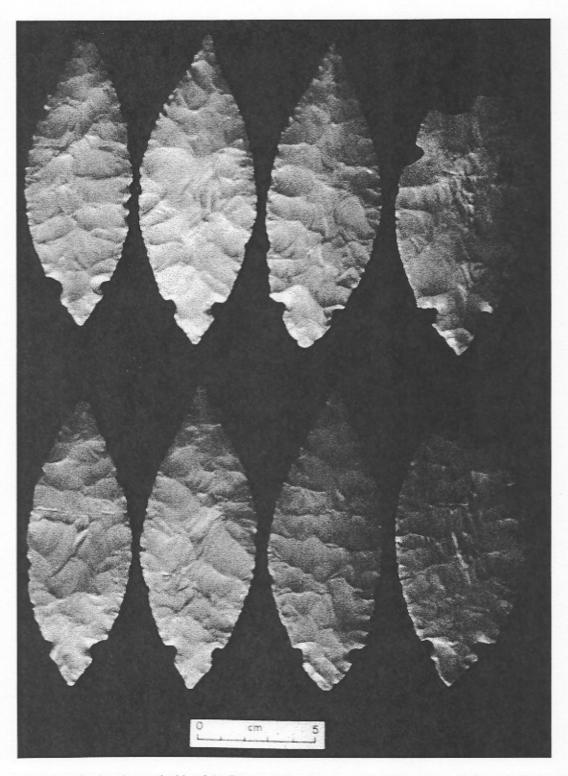


Figure 1: Photographs showing each side of the Berger cache of Turkey-tail points. From right to left: Specimens 1, 2, 3, and 4.

Robertson et al. 1999; Stevenson et al. 1997). Regarding the typical archaeological associations of Turkey-tail points, Mason (1981:220) notes they are:

Almost always made of a distinctive bluish-gray nodular chert, an exceptionally fine material sometimes called hornstone, from Harrison County in far southern Indiana, sets of 3 or 4 to even 20 or more turkey-tails are a recurring, though not universal, feature of Red Ocher graves wherever they have been encountered.

The primary characteristics of the Red Ocher mortuary complex have been summarized as:

(a) flexed (but sometimes cremated and bundled) burials intruded into sandy natural prominences; (b) liberal application of red ocher; (c) turkey-tails and/or "modified" turkey-tails – usually in groups; (d) white ceremonial blades – usually singly; (e) caches of up to 400 small ovate-trianguloid blades; (f) tubular beads of marine shell from the Atlantic Ocean or Gulf of Mexico; and (g) copper in the form of beads (usually) or awls, celts, knives, or projectile points (Mason 1981:224).

If the Berger Turkey-tail cache was associated with human burial(s) like many similar associations of the Red Ocher complex, those bones may have either eroded, decayed or remain undiscovered on the sandy bluff top. However, as pointed out by Robertson et al. (1999:121), "Not all Red Ocher finds are associated with burials." In fact, they list at least nine separate finds of cached Turkey-tails from Michigan that are not associated with human burials. It is possible, therefore, that the Berger cache is not associated with a burial at all.

Ritzenthaler and Quimby (1962:257) suggested an age range of 1500 B.C. to 100 B.C. for the Red Ocher complex. Perhaps following this suggestion, Mason (1981:224) has stated that, "Almost imperceptibly, Red Ocher... emerged out of a Late Archaic patrimony around 1500 B.C. or a little after. The latest sites in any way attributable to it fall in the first or second centuries B.C." According to a more recent review by Pleger (2000:171), "Red Ocher sites date between 1200 and 400 B.C., span-

ning the Late Archaic and Early Woodland sequence."
Robertson et al. (1999:117) mention that radiocarbon dates from the Red Ocher component at the Riverside site (20ME01) in Menominee, Michigan (see Figure 2) range from 510 B.C. to A.D. 1., but they argue, "a lack of solid radiocarbon dates plagues attempts to establish the chronological position of Red Ocher." Krakker (1997:11) also concludes that the time span of Turkey-tail use is still not clearly established. Despite these slight disagreements about the exact time span of the Red Ocher complex, it seems best placed within the last dozen or so centuries before the Christian Era.

In his regional overview of the Great Lakes archaeological record, Mason (1981:224) suggests the core area of Red Ocher sites is concentrated in the south half of Lake Michigan eastward to southern Lake Huron, and Turkey-tail caches have been reported from as far away as the Finger Lakes region of New York (Didier 1967:32; Ritchie 1969) and the hill country of northeastern Mississippi (Johnson and Brookes 1989). Although these locations suggest a much broader geographic distribution, Johnson and Brookes (1989:134) are careful to note that, "the Midsouth examples fall outside the considerable range of variation in form for the Midwest Turkey Tails." Following these observations and the recommendations of Mason (1981:220), this analysis presumes that Red Ocher sites and Turkey-tail finds are most concentrated in the "contiguous portions of Michigan, Indiana, Illinois and Wisconsin." Mason's (1981:203) map of Red Ocher culture distribution is similar to Didier's (1967:51) earlier documentation of the geographic distribution of Turkeytails and shows its northwestern boundary approximately along the Wisconsin River, which lies about 175 km SE of the Berger cache location (see Figure 2). However, it should be noted that Didier (1967) also reports three surface finds of single Turkey-tail points from the nearby western Wisconsin counties of Barron, Chippewa, and Trempealeau. Despite these intriguing isolated finds, Theler and Boszhardt (2003:91) reaffirm in their recent archaeological review of this region that Turkey-tails "are more common as burial artifacts to the east of the Driftless Area. A cache of hornstone Turkey-tail points was found near New Lisbon, in the central Wisconsin River Valley, but they are very rare along the Upper Mississippi Valley." Consequently, the Berger cache may represent a significant range extension of Turkey-tail points into western Wisconsin. This report should encourage archae-

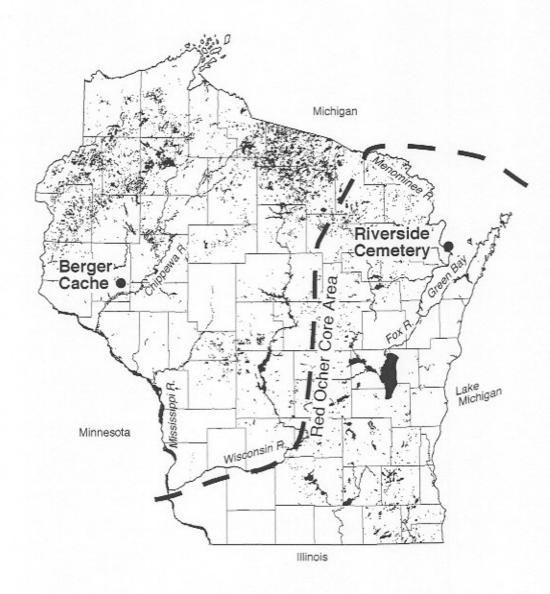


Figure 2: Location of the Berger Cache and the Riverside Cemetery relative to the Red Ocher core area boundary in Wisconsin.

ologists working there to continue examining local artifact collections for confirming evidence of the Red Ocher complex in the area.

BERGER CACHE DESCRIPTIONS AND COMPARISONS

All four of the side-notched, bipointed Turkey-tail bifaces in the Berger cache (Figure 3) are made from the distinctive blue-gray microcystalline silicate colloquially known as hornstone, a nodular flint-like material with source areas in southern Illinois and Indiana. These blue-gray nodular cherts from the Midwest are usually distinguished by concentric banding and are often termed Cobden-Dongola chert in Illinois and Wyandotte or Harrison County chert in Indiana. Prehistoric use of these cherts was regionally widespread and significant throughout the North American midcontinent during Late Archaic and

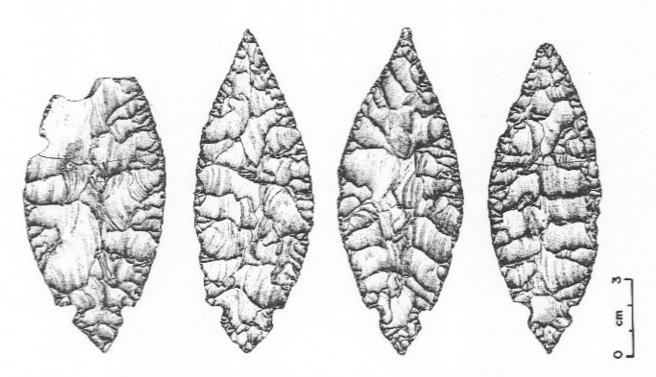


Figure 3: Line drawings of the Berger cache Turkey-tail points. From top to bottom: Specimens 1, 2, 3, and 4.

Middle Woodland times (Morrow et al. 1992). The macroscopic distinction of these closely related materials is difficult. Chemical studies of the trace elements within these cherts have been attempted to help resolve this problem (e.g., Luedtke 1978; Spielbauer 1984), but subsequent studies by Morrow et al. (1992) have concluded that incomplete reporting and incompatible analytical procedures limit our current ability to effectively use this technique to distinguish these stone sources. Using petrographic thin-sections, Tankersley (1984) has suggested that Wyandotte chert can often be distinguished by its scattered dolomite impurities and occasional clusters of pyrite and anthraxite. Relying on these mineralogical criteria, one of the specimens from this cache contains a distinctive cloud of pyrite particles, which suggests its likely assignment to the Wyandotte (Harrison County, Indiana) source area. Regardless of the exact source, the blue-grey chert used to manufacture the Berger cache of Turkey-tail points is almost certainly from either the Wyandotte and/ or Cobden-Dongola quarries, both of which lie about 850 km SSE of the find spot.

Over the years, archaeologists have continued to ask several fundamental questions about the significance of Turkey-tail points and caches including the issues of how and where they are made, how they are transported, and how and why they are disposed (e.g., Binford 1963; Didier 1967; Krakker 1997; Pleger 2000). This documentation of the Berger cache contributes in a small way to the continued efforts at addressing these problems.

In regard to the question of how these prehistoric people accomplished such long-distance transport, it can be observed that surface abrasion is sometimes reported on Turkey-tail points. At the Pomranky site, Binford (1963:180) observed that, "All specimens exhibited a slight polish along the high ridges of the flake scars on the blade. This suggests that the specimens may have been carried around so that the polish resulted from their having rubbed together." Probably echoing these observations, Didier (1967:11) states in her distributional study of Turkey-tails that, "the presence of polish on the faces of some of the blades suggesting that they had been carried about and rubbed together for some time." Microwear analysis of the 10 Turkey-tail points from 20BY79: "indicated that they were likely curated and subject to considerable abrasion and other undetermined actions; however, no conclusive evidence for specific uses was observed (Robertson et al. 1999:120),"

The statistical frequency of surface wear from abrasion during transport is poorly known among Turkeytails, but its absence in the Berger cache, located far from its material sources, is worth mentioning. However, it is considered unlikely that the Berger specimens were manufactured locally from transported blanks. It is recognized that manufacturing debris of blue-gray hornstone is rarely found beyond its source areas, indicating that Turkey-tail production probably occurred near the quarry workshops in southern Indiana and Illinois and that completed artifacts were then carried into the Upper Midwest (Brown 1930:99-103; Didier 1967:29). Didier (1967:32) suggests, "Turkey-tails must have been circulated along all of the major waterways over the area where they are found." Dugout canoes associated with human occupations in the Midwest during this time were competent to transport such loads (Brose and Greber 1982), but covering this distance from the source to the Berger cache location would have required paddling almost entirely upstream for several months. Furthermore, the Berger cache is remotely located in the Red Cedar River drainage, a tributary to the Chippewa River, which flows into the upper reaches of the Mississippi River about 175 km above its confluence with the Wisconsin River.

Exactly how these Turkey-tail points were handled and moved is uncertain but some "wide-spread logistics networks for the transference of goods and materials" seem to have been involved (Binford 1963:190; Pleger 2000). The cultural context and function of these exotic stone tools appear to have been entirely within the sociological and ideological realms as objects of ritual interment rather than as part of the technological-economic realm of mundane implements and personalties (Binford 1963:187-191). Binford (1963:191) proposed that such mortuary behaviors of the Red Ocher complex reflected the development of increased sociocultural complexity in prehistoric societies of the Upper Midwest.

All four of the Berger Turkey-tail points have a thin coating of red ocher (hematite powder), mostly evident in the cracks and crevices of flake scars and ripples. Specimen 1 is probably the largest of the group although its total length is unknown because the distal end of this biface has never been recovered. The completed length of this biface can be estimated at 149 mm based on the average length/width ratios of the other three Turkey-tails in this cache (Table 1). Two parallel bending breaks bisect the breadth of this biface and each is associated with a separate notch-shaped bending fracture, most likely caused by torsional stresses induced by plow impact. Mallouf (1981) illustrates similar patterns of stone tool breakage caused by modern tillage implements. Red ocher staining is not present on the broken surfaces indicating that breakage occurred sometime after the application of this mineral pigment on the outer surface of the finished but unbroken points. One part of the distal section of the blade was recovered and mended, but the remainder of the distal tip is missing. A notable material flaw in this specimen is visible as a cloud of pyrite grain inclusions along the bending fracture near the middle of the biface. As noted above, such inclusions have been suggested by Tankersley (1984) to be distinctive of the Harrison County, Indiana or Wyandotte hornstone sources. The aboriginal workman was apparently able to overcome this obstacle and successfully complete this Turkey-tail point, but this structural weakness apparently contributed to the biface's breakage during its contact with the plow.

These observations about the modern causes of breakage in the Berger cache are critical, because it has been suggested that Turkey-tails may have sometimes been "killed" by intentionally breaking them before placement in burial caches (Mason 1981:222, 226). Review of the evidence supporting such ritual killing of Turkey-tails is limited at best. None of the specimens in Krakker's

Specimen Number	Max Length	Max Width	Max Thick	Ratio of Width/Thick	Neck Width	Neck Height
1	109.2*	57.4	6.2	9.3	17.5	18.6
2	128.8	48.2	8.9	5.4	19.4	18.8
3	130.3	50.2	6.2	8.1	15.3	18.6
4	123.5	46	6.4	7.2	14.9	20
* all measure	ements in millin	neters				

(1997) comparative study of seven Turkey-tail caches from the Great Lakes region are reported as broken (e.g., see illustration of the 20BY79 cache in Robertson et al. [1999:117]). Didier (1967:7) mentions that observations about blade breakage were not possible in her study. Binford (1963:184) describes one broken Turkey-tail among the 14 included within a large and complex burial pit feature at the Pomranky site. Interestingly, this broken Harrison variety Turkey-tail was placed separately in the pit from the other 13, which were neatly stacked (perhaps bundled or bagged) in a cluster with alternating tips and bases. Pleger (2000:180) states that some of the bifaces from the Riverside cemetery were intentionally destroyed by fire at the time of interment. It should be noted that these Riverside bifaces are not Turkey-tails and are described as having Adena-like contracting stems. This cursory review suggests that Turkey-tails (especially the Fulton variety) were rarely broken before interment, but that other biface types may have been treated differently. The significance and meaning of this pattern are likely to remain unclear until there has been more systematic examination of the evidence for ritual killing of bifaces in Red Ocher mortuary rituals.

Specimens 2 and 3 in the Berger cache are undamaged and distinguished by narrowly projecting distal tips and small remnants of a chalky white cortex on their basal ends. Specimen 3 also has a small burin fracture on the distal tip – it is unclear whether this flake scar was incidental during manufacture or if it may indicate use wear or post-depositional damage. Although these artifacts are remarkably similar in size, Specimen 4 is the smallest of the group with the shortest dimensions of length and width. Like Specimens 2 and 3, the basal tip is also marked by a small cortex remnant. Unfortunately, Specimen 4 was slightly damaged by plow impact and modern rough handling. It has been reassembled along a lateral snap that bisects the blade just past its midpoint and has several abrupt edge damage scars along the margins and tip.

The length and maximum width of the Berger Turkey-tails can be compared with similar notched Turkey-tail points from four other caches in the Upper Midwest (Figure 4). The data for these examples are taken from Krakker (1997:16-18). In the interest of comparison, the length of the broken Specimen 1 in the Berger cache is reconstructed using the figure estimated above. Most of the samples in Figure 4 show a positive correlation of length and width – meaning as Turkey-tail length increases, width tends to increase proportionally – reflecting an allometric pattern of general similarity in shape despite size differences. It should also be noted that two excep-

tionally broad specimens in the 20BY79 cache (Robertson et al. 1999:117) are slight outliers to this overall pattern. This distinctive statistical trend seems to distinguish the Fulton variety Turkey-tail points from the Harrison variety Turkey-tail points (Binford 1963:176-180; Didier 1967; Justice 1987:174-179), represented here as the Pomranky cache specimens, which show a negative correlation of length and width – the longer Harrison variety Turkey-tails from Pomranky also tend to be narrower.

Krakker (1997:21) demonstrates that discrete Turkey-tail caches tend to cluster by size, which he argues is a pattern reflecting how these "bifaces seem to have been manufactured and circulated in matched lots . . . At times lots may have been divided and even single bifaces may have circulated." Figure 4 shows the Berger cache specimens are most similar to those from Tanner but are slightly broader (lying to the right of this group in the graph, meaning they exhibit lower length/width ratios). Turkey-tails in the Berger cache are intermediate in size to the two separate groups of small versus large Turkey-tails in the Frazer cache. In this comparison, the Berger cache appears to represent a distinctive and relatively homogeneous subpopulation of Turkey-tails that may reflect the output of a specific craftsman. A similar conclusion has been expressed by Krakker (1997:34) in his comparative analysis of Turkey-tail caches: "Lots of homogeneous size and shape indicate at least some of the bifaces were selected or manufactured to form well-matched sets . . . subgroups within caches and differences among caches, may represent individual manufacturers or local stylistic variability among communities within the area of manufacture."

Additional technological attributes of these points suggest several important observations about how they were made. Although the Berger cache specimens fail to reveal any remnant surfaces of their original flake interiors, they tend to exhibit slight plano-convex cross-sections suggesting the flatter side represents the flake blank interior while the more convex side is the flake blank exterior. The location of the striking platform on this flake blank appears to be the tip of either the proximal or distal end of the biface. These two pointed ends of the Turkey-tail sometimes exhibit the distinctive thin, whitish cortex rind associated with these hornstone nodules - suggesting that cortical surfaces may have frequently served as the striking platforms for these flake blanks. Evidence of cortex at both distal and proximal ends of the biface suggests these flakes traveled completely across the breadth of the nodule. These flake blanks appear to have been exceptionally flat with little curvature. In addition, there seems to have been an intentional effort to leave some of these

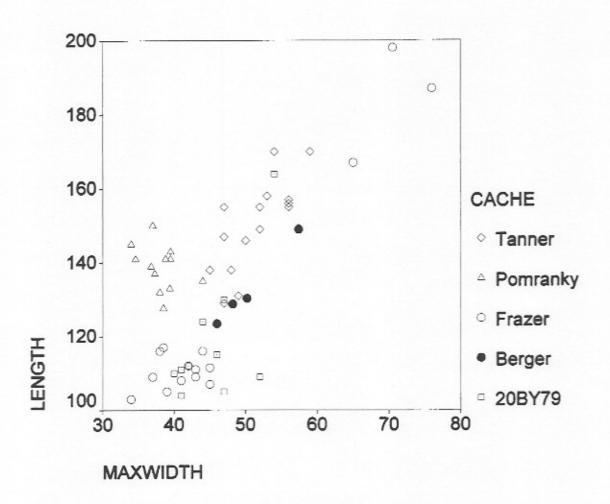


Figure 4: Scatterplot comparison of maximum width and axial length of notched Turkey-tails from various caches in the Upper Midwest (measurements in millimeters).

cortex remnants on the completed biface – perhaps as a display of flintknapping skill in successfully conserving the maximum artifact length from the original blank.

Slight asymmetry in the outline shape of these Turkey-tails most likely represents variation in the shape and margin thickness of the original flake blanks as well as constraints and errors encountered in the flintknapping process. Despite these slight variations, Turkey-tails show remarkable standardization in size, shape, and production technique, which implies at least part-time craft specialization in their manufacture (Krakker 1997:34). High skill levels are required for their production as indicated in bifacial thinning, which results in relatively high ratios of width to thickness, largely accomplished though purposeful control of the termination of large, broad primary thinning flakes that tend to stop at the midline and thicken with shallow, diving hinge terminations – result-

ing in bifaces that are thinner along the longitudinal axis and thickest between that longitudinal axis and the margin. Callahan (1979:171) describes how he has employed this same technique to produce some exceptionally thin, biconcave bifaces. Krakker (1997:21-23) has pointed out how alternating the sequence of primary thinning flakes can help eliminate the creation of a thick longitudinal ridge in Turkey-tail production. He also describes the Turkey-tail pattern of secondary thinning along the lateral ridges of the primary thinning scars and its concentration at the ends of the biface to facilitate shaping. Furthermore, Krakker (1997:34) suggests Turkey-tails may have been "notched immediately before disposal" but there is little evidence to support this notion. In fact, the character of the notching flakes is entirely consistent with the rest of the flaking which undoubtedly took place at workshops near the material source. If notching occurred near

the disposal locations, diagnostic examples of hornstone notching flakes and Turkey-point points broken during the delicate notching process (Whittaker 1994:148-150) should be documented in those places, but they have not been. It seems a more likely possibility that red ocher may have been applied near the disposal locations, but this suggestion is also difficult to substantiate.

The ability to manufacture large, thin bifaces is widely recognized among modern flintknappers as an indicator of superior skill levels in stone tool making (Callahan 1979:170-171; Whittaker 1994:178). Perhaps the greatest feat in biface thinning is represented by the Sweetwater biface from Texas (Bostrum 2001), which exhibits a width/thickness ratio of 18. Errett Callahan (1979:171), one of the world's greatest modern flintknappers, praises bifaces with width/thickness ratios around 10 and greater as representing some of the highest levels of achievement in the art of stone tool making. The ratio of width to thickness among the Berger cache specimens averages 7.5, ranging from 5.4 to 9.3. For comparison, functional Clovis projectile points are recognized as having exceptional workmanship with longitudinal fluting used to create remarkably thin, biconcave cross-sections. Typical width to thickness ratios for most Clovis points range from about 4.0 to 5.0 (Callahan 1979) and many Archaic and Woodland projectile points with thicker cross-sections range from about 3.0 to 4.0. While not spectacular, the Fulton variety Turkey-tail points represent significant accomplishments that required special investment in chipped-stone tool production skills. Comparison of these ratios shows the Berger Turkeytails to be substantially thinner than those reported for the unnotched, bipointed bifaces from Red Ocher sites (Krakker 1997:14-16, 23-25). It is uncertain if there was ranking in the prestige value of these Red Ocher burial goods but it may be worth observing that unnotched, bipointed bifaces also exhibit lower proportions of exotic blue-gray chert use - suggesting they may have had lesser value than the typical Fulton variety Turkey-tails.

SUMMARY AND DISCUSSION

The Berger cache represents a significant range extension of Fulton variety Turkey-tail points into northwest Wisconsin beyond the previously recognized boundary of the Red Ocher complex. Documentation of this private collection confirms the earlier observations of Didier (1967:5-6) who noted that few Turkey-tails have been reported from professional investigations. These exotic hornstone bifaces document an impressive scale in the upstream or cross-drainage movement of goods

from the Wyandotte or Cobden/Dongola source areas of southern Indiana and Illinois. Furthermore, the slightly broader forms and thinner cross-sections of the Berger cache may indicate better than average workmanship than that found in some other Turkey-tail caches from less remote locations of the Upper Midwest. Otherwise, the technological characteristics of these specimens are highly consistent with the model of Turkey-tail manufacture outlined by Krakker (1997:21) and confirm the widely proposed notion of standardization in production. Morphological comparison with other Turkey-tail caches indicates the Berger bifaces are a distinctive subpopulation and may represent the output of a single artisan living near the quarry workshops. These artifacts appear to have been unbroken at burial and do not support suggestions of the ceremonial killing of Turkey-tails before interment. Evidence to support the suggestion of notching immediately before disposal is also lacking and unlikely, although coating with hematite powder could have easily taken place near the burial location, perhaps as part of funerary rituals.

Mason (1981:221) argues for the ritual function and specialized production of Turkey-tails at the Wyandotte and Cobden-Dongola source areas from which they were distributed across the Midwest through elaborate prehistoric exchange networks:

Many are so finely executed, in fact, that they were too fragile to have acted as ordinary weapons or implements. This fact, plus their unusual recovery from mortuary contexts must signal a paramount ritual function resolving itself into servicing otherworldly needs. In view of their high workmanship, narrow stylish variation, and the restricted source of raw material from which they were crafted, similarly restricted authorship is a persuasive conclusion. Not withstanding the impressive geographical distribution of the finished product, it seems likely that completed artifacts, and not just quarry blanks, were introduced into a distinctive network at only one or two places.

In his comparative analysis of Turkey-tail caches in the Upper Midwest, Krakker (1997) has drawn similar conclusions about the role these artifacts played in prehistoric societies. He proposes that Turkey-tails were used as prestige items in the large-scale regulatory systems that functioned to buffer the effects of environmental uncertainty on Late Archaic sociocultural systems in the Great Lakes region. Gift exchange of these items

is acknowledged as an important way to establish and maintain social relationships. He also describes how ritual, prestige, and local specialization can facilitate the movement of such goods and the organization of social gatherings. The burial of these objects is explained as a way to insure continued demand by taking the goods out of circulation. Finally, evidence for local specialization seen in the production of Turkey-tails is viewed as a way to maintain and enhance the prestige associated with these exotic goods outside of their source areas.

Although long-distance exchange networks occur earlier in the archaeological record of the Midwest, the appearance of the Red Ocher complex is significant for representing a shift toward nonegalitarian social organization. For example, Pleger (2000) compared mortuary data from the Red Ocher complex cemetery at the Riverside site with the nearby Oconto cemetery, an earlier Middle Archaic Old Copper site. In that study, he documented a shift toward the interment of abundant, exotic and prestige-related materials mostly associated with young adult females and children, which he interprets as a significant shift from egalitarian to nonegalitarian social organization among Archaic foragers in the Upper Midwest. The Berger cache suggests at least partial participation in this nonegalitarian regulatory system by the Late Archaic populations of western Wisconsin.

ACKNOWLEDGMENTS

This paper is dedicated to Mr. and Mrs. James Berger and my cousins Bob and Tom. I am not sure this discovery sparked my interest in pursuing archaeology as a career, but I am certain that it contributed in some way. I am pleased to report the cache remains intact despite being partly damaged from childhood show-and-tell handling and that I have been able to bring it to publication. Special thanks to Mr. Steve Wallmann of Reno, Nevada for making the exceptional line drawings of these pieces.

REFERENCES CITED

Binford, Lewis R.

1963 The Pomranky Site, A Late Archaic Burial Station. In Miscellaneous Studies in Typology and Classification, edited by A. Montet-White, L. Binford, and M. Papworth, pp. 149-192. Anthropological Papers No. 19. Museum of Anthropology, University of Michigan, Ann Arbor.

Bostrum, Pete

2001 The Extraordinary Sweetwater Biface, Nolan County, Texas. http://www.lithiccastinglab.com/gallery-pages/2001januarysweetwatercast.htm.

Brose, David S. and Isaac Greber

1982 The Ringler Archaic Dugout from Savannah Lake, Ashland County, Ohio: With Speculations on Trade and Transmission in the Prehistory of the Eastern United States. *Midcontinental Journal of Archaeology* 7(2):245-282.

Brown, Charles E.

1930 Turkey-tail Points. The Wisconsin Archaeologist 9(2):99-103.

Callahan, Errett

1981 The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts. Archaeology of Eastern North America 7(1):1-179.

Didier, Mary Ellen

1967 A Distributional Study of the Turkey-tail Point. The Wisconsin Archaeologist 48(1):3-73.

Faulkner, Charles H.

1960 The Red Ochre Culture: An Early Burial Complex in Northern Indiana. *The Wisconsin Archaeologist* 41(2):35-49.

Johnson, Jay K. and Samuel O. Brookes

1989 Benton Points, Turkey Tails, and Cache Blades: Middle Archaic Exchange in the Midsouth. Southeastern Archaeology 8(2):134-145.

Justice, Noel D.

1987 Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States: A Modern Survey and Reference. Indiana University Press, Bloomington.

Krakker, James J.

1997 Biface Caches, Exchange, and Regulatory Systems in the Prehistoric Great Lakes Region. *Midcontinental Journal of Archaeology* 22(1):1-41.

Leudtke, Barbara E.

1979 The Identification of Sources of Chert Artifacts. American Antiquity 44:744-757.

Mallouf, Robert J.

1981 An Analysis of Plow-damaged Chert Artifacts: The Brookeen Creek Cache (41HI86), Hill County, Texas. Journal of Field Archaeology 9(1):79-89.

Mason, Ronald J.

1981 Great Lakes Archaeology. Academic Press, New York.

Morrow, Carol A., J. Michael Elam, and Michael D. Glascock

1992 The Use of Blue-gray Chert in Midwestern Prehistory. Midcontinental Journal of Archaeology 17(2):166-197.

Pleger, Thomas

2000 Old Copper and Red Ocher Social Complexity. Midcontinental Journal of Archaeology 25(2):169-190.

Ritchie, William A.

1969 The Archaeology of New York State. Revised 2nd edition. Natural History Press, Garden City.

Ritzenthaler, Robert E. and George I. Quimby

1962 The Red Ocher Culture of the Upper Great Lakes and Adjacent Areas. Fieldiana Anthropology 36(11):243-275.

Robertson, James A., William A. Lovis, and John R. Halsev

1999 The Late Archaic: Hunter-Gatherers in an Uncertain Environment. In Retrieving Michigan's Buried Past: The Archaeology of the Great Lakes State, edited by J. Halsey, pp. 95-124. Cranbrook Institute of Science Bulletin 64. Bloomfield Hills, Michigan.

Spielbauer, Ronald H.

1984 Potentialities for Trace Element Analysis in Southern Illinois Cherts. In Prehistoric Chert Exploitation: Studies from the Midcontinent, edited by B. Butler and E. May, pp. 271-286. Occasional Paper 2, Center for Archaeological Investigations, Southern Illinois University, Carbondale.

Stevenson, Katherine, Robert F. Boszhardt, Charles R. Moffat, Philip H. Salkin, Thomas C. Pleger, James L. Theler, and Constance Arzigian

1997 The Woodland Tradition. In Wisconsin Archaeology, edited by R. Birmingham, C. Mason, and J. Stoltman, pp. 112-139. The Wisconsin Archaeologist 78(1).

Tankersley, Kenneth B.

1984 Mineralogical Properties of Wyandotte Chert as An Aid to Archaeological Fingerprinting. In Lithic Resource Procurement: Proceedings from the Second Conference on Prehistoric Chert Exploitation, edited by S. Vehik, pp. 251-264. Occasional Paper 4, Center for Archaeological Investigations, Southern Illinois University, Carbondale.

Theler, James L. and Robert F. Boszhardt

2003 Twelve Millennia: Archaeology of the Upper Mississippi River Valley. University of Iowa Press, Iowa City.

Whittaker, John C.

1994 Flintknapping: Making and Understanding Stone Tools. University of Texas Press, Austin.