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The Clovis and Cumberland Projectile Points of Tennessee: Quantitative and Qualitative Attributes and Morphometric Affinities

Emanuel Breitburg and John B. Broster

This paper summarizes the results of a study designed to document the incidence of and quantitative and qualitative attributes for Tennessee Clovis and Cumberland projectile points. Records of 654 Clovis and 234 Cumberland points maintained by the Tennessee Division of Archaeology contain data on location, blade length, width, and thickness; base width and depth; flute length and width; grinding, and chert type. We have previously commented on the incidence of the points by physiographic occurrence (Breitburg and Broster 1994). In this article we present information on chert types, point dimensions, and the results of statistical tests designed to conceptualize the similarities and differences of samples grouped by physiographic occurrence.

Clovis points ($n = 322$) represent 15 types of chert. Ft. Payne (41%), Dover (37%), and Waverly (10%) were the primary cherts used, followed by a wide variety of other cherts: Buffalo River, St. Louis, Knox, cream, Flint Ridge, Horse Mountain, red agate, Ste. Genevieve, chalcedony, Burlington, banded and red cherts. Length ranges 30.7 to 182.4 and averages 71.0 mm. Blade width varies 14.0 to 48.9 and averages 27.9 mm. Base width ranges 14.0 to 42.4 and averages 25.7 mm. Blade thickness varies 2.00 to 9.9 and averages 6.5 mm. Flute length and width average 30.9 and 14.46 mm, and range 9.8 to 83.4 and 4.9 to 48.00 mm, respectively. Lateral grinding averages 27.8 and ranges 13.8 to 69.3 mm. Basal concavity appears on 90% of points and ranges 0.67 to 11.9 and averages 4.0 mm.

Cumberland points (n = 181) sort to nine chert types. Ft. Payne (56%), Dover (31%), and Waverly (5%) are the main cherts present, followed by less commonly used Buffalo River, Knox, St. Louis, cream, waxy, and black cherts. Length ranges 37.6 to 167.9 and averages 77.6 mm. Blade width ranges 14.5 to 32.8 and averages 23.1 mm. Base width ranges 14.3 to 31.5 and averages 21.2 mm. Blade thickness varies 4.6 to 17.3 and averages 7.5 mm. About 63% (n = 114) display fluting. Flute length and width averages 1.9 and 14.0, and range 46.0 to 100.9 and 11.7 to 22.8 mm, respectively. Lateral grinding (n = 105, 81%) averages 25.8 and ranges 9.0 to 50.3 mm. Basal concavity is present in 73% (n = 148) of the cases and averages 3.4 and ranges 0.88 to 8.5 mm. Basal constriction averages 18.7 and ranges 15.2 to 27.5 mm in width.

Figure 1 summarizes the morphometric relationships of physiographically defined Clovis and Cumberland point assemblages. Plotted values represent the first two principal component scores obtained via the analysis of four variables (length, width, base width, and thickness). The results accentuate the strong morphometric dissimilarity between the two projectile points. The within-point-type clusters, confirmed by univariate analysis, reveal strong morphometric affinity between Western Valley and Western Highland Rim Clovis and Cumberland points. Central Basin, Coastal Plain, Eastern Highland Rim, and Valley and Ridge Clovis points do not differ significantly in size from each other, but they do differ significantly in size from the Western Valley and Western Highland Rim cluster. In contrast, Central Basin and Eastern Highland Rim

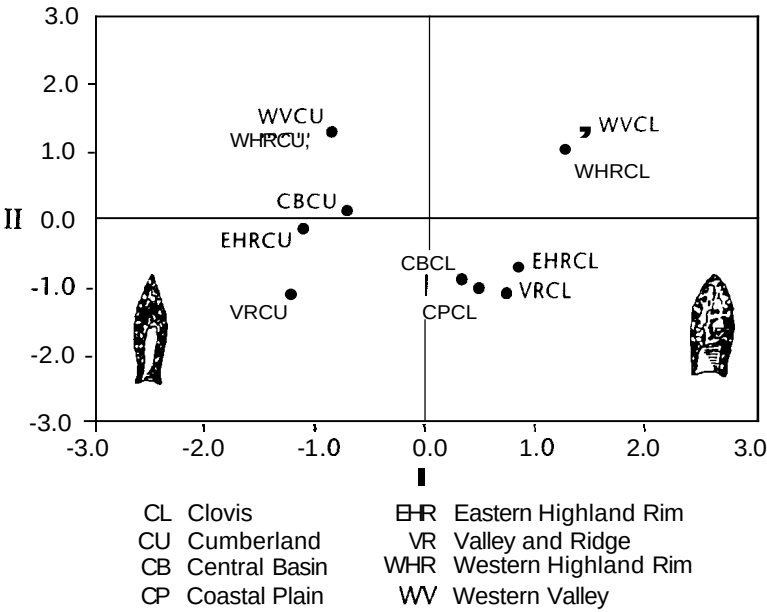


Figure 1. Plot of the first two principal components scores for four Clovis and Cumberland projectile point dimensions.

Cumberland points show strong morphometric affinity, but, although of smaller size, overall dimensions do not differ significantly from the Western Valley and Western Highland Rim. The Cumberland Valley and Ridge point is an even smaller version of that found in the latter regions.

The Clovis point was in use from about 11,500 to 10,900 yr B.P., and the succeeding Cumberland 11,000 to 10,500 yr B.P. The primary lithic source for both points included the Western Valley and Western Highland Rim Mississippian-period Ft. Payne and Dover cherts. In conjunction with our present view of early-Paleoindian base and ephemeral encampment settlement pattern, morphometric analysis implies that points are larger and show less maintenance and use wear closer to base camps with quarry sites than at progressively distant camp sites, where points are smaller and exhibit much greater wear or are worn out. The results of the study emphasize the unique nature of the Western Valley and Western Highland Rim and continue to identify these physiographic areas as primary corridors of Paleoindian activity.

References Cited

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Disproof of Commonly Held Assumptions Relevant to the Peopling of the Americas

Alan L. Bryan

Recent work in Northeast Asia and northwestern North America has disproved certain long-held assumptions relevant to the initial peopling of the Americas. One pervasive assumption maintained by most North American archaeologists is that early people could not have occupied subarctic Siberia without an upper-Paleolithic level of technology. On this basis North American archaeologists expect to find in Siberia lanceolate projectile points that would be convenient predecessors for Clovis points, which are generally thought to be the most distinctive identifiable element of the earliest demonstrable tool kit in North America. Therefore, Yuri Mochanov's work in Dyuktai Cave on the Aldan River, a tributary of the Lena, has been hailed by North American archaeologists as very significant because several willow leaf-shaped points were found with a microblade and burin technology dated between 15,000 and 13,000 yr B.P. (Mochanov 1978: 58-9). The lack of thin broad lanceolate projectile points in Siberia in Pleistocene contexts has been ignored by Alaskan archaeologists who propose that they have recovered pre-Clovis broad lanceolate points, derived from Siberia by migration, in north central Alaska as early as 11,700 yr B.P., the