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# Collection of Dalton Points from Yell County, Arkansas

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## ABSTRACT

The hypothesis that projectile points serve functions other than use as a head for a missile was examined by Morse and Goodyear in regard to Dalton points. The writer reexamined this hypothesis in light of a significant collection of Dalton points from Yell County, Arkansas, and further substantiates the hypothesis formulated by Morse and tested by Goodyear.

## INTRODUCTION

The first knowledge of Dalton came from the collection of Judge S. D. Dalton in Missouri (Chapman, 1948). Judge Dalton had been collecting the points from a single site for several years. It was from this location that "Dalton Culture" — the lithic assemblage which accompanies the Dalton points — first was defined. At the site of Judge Dalton it is early Archaic with the following attributes: lanceolate serrated Dalton points, expanding base drills, oval scrapers, projectile points reworked for scrapers, and also corner-notched, side-notched, and stemmed points (Chapman, 1948, p. 138). It is obvious that some mixing of materials was present, but it is also important to note that Dalton was already being viewed as a distinct point style and culture (Goodyear, 1971, p. 3.)

Chapman (1948) attributes Dalton to an early Archaic manifestation which has its roots in the "Folsom" points style. The Dalton point recently has been assigned a relative temporal span of 8000 to 5000 B.C. The early date assigned the Dalton point may also be associated with this point style in other early sites. Graham Cave has Dalton points in levels 5 and 6 (Logan, 1952, p. 73). The importance of the Graham Cave finds is in relation to three radiocarbon dates from the lower levels which give Dalton a comparatively early time level. One sample from level 6 yielded a date of  $7,750 \pm 500$  B.C. (M-130), a second from level 6 gave  $6,880 \pm 500$  B.C. (M-131), and one from level 4 gave  $5,850 \pm 500$  B.C. (Crane, 1956, p. 667). There are Dalton points in the lower levels of other sites as well: Modoc Rock (Fowler, 1959), Stanfield-Worley (DeJarnette et al., 1962), and Rodgers Shelter (MacMillan, 1965).

The purpose of this study was to examine a collection of Dalton points from Yell County, Arkansas. Because the history of the Dalton point is no more explicit in Arkansas than in any other section of the Dalton horizon, a brief summary of the Dalton point in Arkansas is presented.

The Dalton point has been collected in Arkansas for a long time with little realization of its cultural-historical significance. Although Dalton points with an accession date of 1929 are cited in this paper, there is no evidence that Dalton points were recognized as a distinct style until the work by Chapman in 1948. The first large-scale inquiry into Dalton culture in Arkansas was conducted by James Ford and Alden Redfield. Their Dalton Project Survey in 1961-1962 was an attempt to locate Paleo-Indian sites in the Mississippi alluvium (Redfield, 1971).

In 1962 Raymond Wood opened excavations at Breckenridge Shelter. Wood (1962, p. 90) defines a Dalton culture with points he typed as Breckenridge. This was somewhat confusing until the work of Thomas in 1969. Thomas (1969) considers the points Wood defined as Breckenridge to be of a general Dalton-Meserve typology. There have been numerous citations

of Dalton points since the Ford-Redfield study in 1961-1962. The Lace Place study by Redfield and Moselage (1970) is especially important for it led indirectly to the hypothesis and testing by Morse and Goodyear.

The Lace Place, a site in Poinsett County, Arkansas, yielded a fair number of Dalton points. Redfield and Moselage postulate that Dalton point variation is due mainly to a temporal shift or variation through time. Using the data from the Dalton Project, they conducted a factor analysis of 116 concave-based lanceolate points, then worked the 116 points into a dendrogram. The conclusions reached by Redfield and Moselage (1970) were: (1) the Dalton point has a great deal of regional variation, and use of a horizon for Dalton may be questionable; "It obscures the local relationships that may be found" (p. 39); and (2) the Dalton occupies a temporal span and variation is a result of change through time (p. 28). It was in answer to these contentions that Morse and Goodyear's hypothesis was formulated.

The writer discusses mainly Goodyear's testing of the hypothesis formulated by Morse, because the Master's thesis written in 1971 by Goodyear describes the resharpening analysis in much greater depth than does the edited publication by Morse (1971).

## DALTON RESHARPENING HYPOTHESIS

Goodyear (1971, p. 37) states,

The use of the term projectile point or Dalton point does not necessarily mean tools in this class were used as a head for a missile. *Dalton Point* is used here in the conventional descriptive sense to mean a bifacially worked artifact with basal haft preparation and a distal end which converges at a sharp angle to form the tip.

From this statement Goodyear built the following hypothesis. For Dalton the type definition is expressed mainly in condition of the base. According to Goodyear the body (blade) of the Dalton is open to variation.

The diagnostic attributes described for the Dalton base are: (1) parallel to concave stem edges in initial through advanced stages which are heavily ground; (2) ears on the basal corners which usually flare outward but may hang parallel with the point's axis and are always heavily ground; (3) a basal concavity that is ground in the preform stage but only to facilitate the removal of thinning flakes, is ground basally and laterally in the initial stage, and varies in depth but is always concave; and (4) basal thinning with one or more flute-like flakes originating in the basal concavity and running up the axis of the point (Goodyear, 1971, p. 37-38).

The body of the Dalton point must not be viewed in terms of consistent typing, but rather in a functional context. The

variation in Dalton body size and shape is a result of resharpening. When the body is resharpened the body size and shape are in actuality altered and modified. Morse and Goodyear attribute the various and distinctive styles of Dalton points to the number of times the body has been resharpened. The first evidence to support this postulation of resharpening was found in the Hawkins Cache (Morse, 1971), where 18 Dalton points of various dimensions were found within a 2-sq-ft. area. It is quite possible that this material is the tool kit of a single individual.

The basic style for the Dalton point of the Hawkins Cache is a lanceolate, right-hand beveled, serrated point. Of the 18 points discovered, 16 fall into three distinct groups. The five points in what is termed group A have convex serrated body edges, the five points in group B have straight serrated body edges, and the six points in group C have a drill-like appearance. The two remaining points were used as burins according to Morse (1971, p. 10). The burin-stage point is reworked from an exhausted Dalton. Morse also conducted measurement analysis on the Dalton points from the Hawkins Cache and was able to make some general statements. First, there is a consistent 4-mm loss through the stages he proposed. As the body was undergoing this 4-mm loss there was no apparent loss in width of the base. Morse also observed an increase in the blade or body edge angle from group A to group C. These observations confirm his placing the points into distinct groups, for they are morphologically distinct. In conclusion Morse believes this variation to be the result of body resharpening and not the result of regional or temporal variation.

#### MATERIALS AND METHODS

A collection of Dalton points from Yell County, Arkansas, was used in this reexamination of the Morse and Goodyear resharpening hypothesis. The points were examined by the basic tests of Morse (1971) and Goodyear (1971) to classify the points into five stages: (1) a completed preform stage, (2) an unresharpened stage, (3) an initial stage of resharpening, (4) an advanced stage of resharpening, and (5) a final stage of resharpening. In addition, measurements were made of point length, stem length, thickness, subjective body width, objective body width, objective stem width, width at the ears, basal depth, and angle of the blade. The measurements of stem length, point length, and thickness are self explanatory. Subjective body width was measured where the body edge tapers off the shoulder, objective body width was measured at exactly half the length of the point, objective stem width was measured at half the length of the stem, width at the ears was the maximum distance between the ears or from ear tip to ear tip, and basal depth was measured from the deepest section of the concavity. The blade angle was measured by the method Goodyear cited (p. 52), by bending a wire around the body edge then measuring the angle of the bent wire. The results of this analysis are shown in Tables I-III.

#### RESULTS AND DISCUSSION

The data in Tables I-III are meaningful only if used in conjunction with the data from Goodyear's metric analysis. Most data in the tables are in general agreement with Goodyear's. The variance between the sample ranges and the sample means in several cases is to be expected. When testing a certain phenomenon, in this case resharpening, deviance must be expected. What is being tested is not actual identical characteristics, but rather similar general characteristics. In

Table I. Dimensional Data for Collection of Dalton Points from Yell County, Arkansas.

Point Characteristic	Number of Points	Mean Dimension (mm)	Dimension Range (mm)
Point length	41	49	70-38
Stem length	41	15.5	21-10
Basal concavity	41	03.5	8-01
Preform basal width	01	62	
Thickness	41	07	09-05
Objective stem width	41	21	30-16
Width at ears	41	23.5	33-19.5
Subjective body width			
Final stage	17	15	
Advance stage	07	16.5	
Initial stage	11	20.5	
Objective body width			
Final stage	17	10.5	
Advance stage	07	12.5	
Initial stage	11	19	

Table II. Distribution of Physical Characteristics Among Yell County Dalton Points

Characteristic	Number Of Points
Basal grinding	
Present	38
Absent	03
Lateral grinding	
Present	39
Absent	02
Beveling	
Present	21
Absent	20
Body cross section	
Rhomboid	22
Biconvex	18
Plano-convex	01
Material	
Novaculite	18
Flint-chert	21
Quartzite	02

Table III. Blade Resharpener Characteristics of Yell County Dalton Points

Formative Stage	Number of Points	Blade Angle (degrees)	Body Edge Wear (mm)
Final	17	52	1.5
Advanced	07	46	4
Initial	11	38	
Completed preform	01	32	

Goodyear's study 5.5-mm losses in body width from stage initial to stage advanced and 5.0-mm losses from stage advanced to the final stage were indicated. The findings from Yell County are not quite in line with these. There is a 4.0-mm loss from the initial stage to the advanced stage and a 1.5-mm loss from the advanced stage to the final stage. Although the reductions are not as great as those in Goodyear's analysis, they retain the general reduction in body width.

Approximately 64% of the initial stage points, 71% of the advanced stage points, and 29% of the final stage points show wear on the body edge. This information is in general agreement with that mentioned in Goodyear's study. Three final stage points show distal-end wear suggesting some function similar to use as awls or drills. However, microscopic examination of the distal end revealed no evidence of rotary wear.

#### DALTON VARIANTS

In this investigation two distinct categories—Dalton endscrapers and Dalton burins—were omitted from the tables because they fail to provide information relevant to the resharpener hypothesis. Because both Dalton burins and Dalton endscrapers are reworkings on Dalton bases, their affinity to resharpener is not particularly relevant without preceding remarks concerning the resharpener hypothesis. However, some general statements can be made in regard to these Dalton variants. Dalton endscrapers are not limited to any one stage of resharpener, but are not found in the final stage. There are examples of endscrapers in the preform complete stage, the initial stage, and the advanced stage. Apparently the final stage is not morphologically functional as an endscraper. In the case of Dalton burins there is a positive correlation with final stage points. The data indicate that only final stage Daltons have been reworked into burins. Regrettably, no analysis of wear patterns on the burin edge was possible because of lack of time.

#### SUMMARY AND CONCLUSIONS

The results of Morse and Goodyear's testing of the resharpener hypothesis were compared with test data from Yell County Dalton points. The writer believes that the data further substantiate the hypothesis formulated by Morse and tested by Goodyear.

1. Although the metric data are not identical to those of Morse and Goodyear, they demonstrate the same characteristics. As in the points of the Hawkins Cache and Brand Site, the basal width remains constant throughout the

various stages.

2. From the numerous cases of consistent body edge wear from initial through advanced stages, it is apparent that some material was abraded on the body edge. According to Semonov (1964) this type of wear is observed when the artifact is used in a knife-like fashion.

3. The Dalton base is found supporting an endscraper in 12 cases and a burin in five cases, in addition to the body edge wear. It is suspected that the Dalton people were using the Dalton point to process faunal remains, using the point in a knife-like fashion.

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