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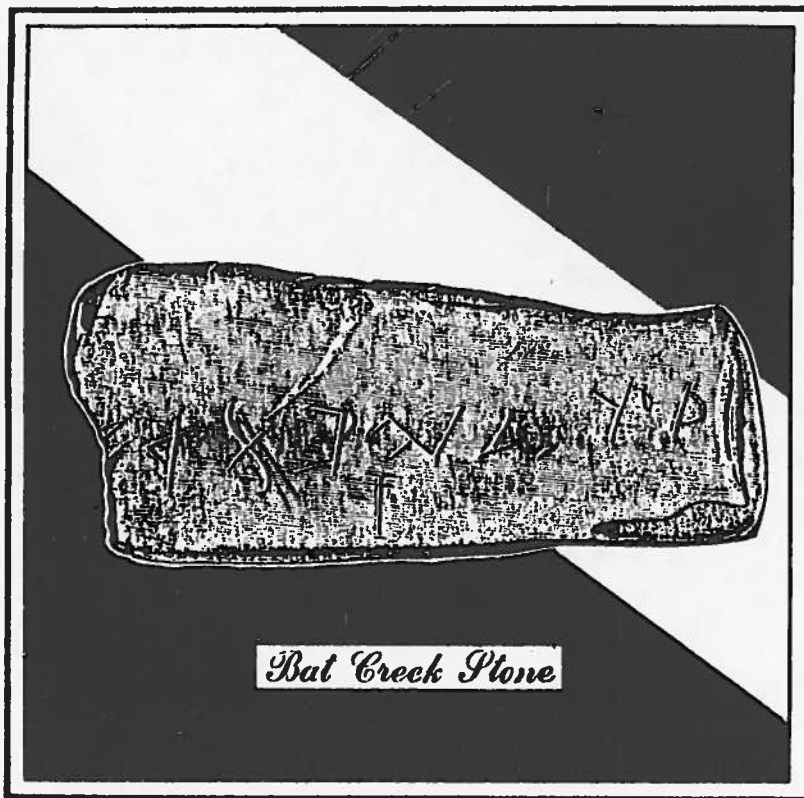
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Bat Creek Stone

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THE BAT CREEK INSCRIPTION: CHEROKEE OR HEBREW?

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Könnte die Geschichte davon schweigen,
Tausend Steine würden redend zeugen,
Die man aus dem Schoß der Erde gräbt.
                                        -- Schiller

ABSTRACT

The Bat Creek inscription was found in 1889 in an undisturbed burial mound in eastern Tennessee. Its text was originally identified as Cherokee by Cyrus Thomas, and later as a Paleo-Hebrew Judean inscription of Roman era by Cyrus Gordon. Recently, Marshall McKusick has reconfirmed Thomas's original identification. In the present paper, the inscription is compared letter by letter to both Cherokee and to Paleo-Hebrew. Contrary to McKusick, the latter fits significantly better, even when we use an early version of Cherokee proposed by McKusick. When we invert the tablet from its purportedly Cherokee orientation to improve its Cherokee fit, Hebrew still fits substantially better. Cherokee fits only slightly better than English, either way up.

Despite some disagreement over details, we basically concur with Gordon's choice of the first or perhaps second century A.D. as a paleographically and historically likely context for this contact. We show that the brass bracelets found with the inscription, if of ancient Mediterranean origin, are indicative of the narrow period 45 B.C. to 200 A.D. A new radiocarbon date is consistent with the first or second century A.D., and rules out a post-Columbian date for the burial.

Introduction

The controversial Bat Creek tablet was excavated by the Bureau of American Ethnology's Mound Survey Project in 1889 from an undisturbed burial mound on the Little Tennessee River near the mouth of Bat Creek./1/ The curious characters that had been carefully inscribed on it were identified by the Project's director, Cyrus Thomas, as being "beyond question letters of the Cherokee alphabet said to have been

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1. The Smithsonian incorrectly gives 1885 as the date of the discovery in its recent terse statement on the inscription (Smithsonian, [c1971]). It is clear from the field reports in the Smithsonian's archives that it was excavated by the Bureau's staff sometime between 2/1/1889 and 2/15/1889 (Emmert 1889a, 1889b).

invented by George Guess (or Sequoyah), a half-breed Cherokee, about 1821." (Thomas 1894: 393) In a little-known earlier work entitled The Cherokees in Pre-Columbian Times (1890: 35-7), Thomas actually used the (to him) evidently Cherokee character of the inscription as the capstone of his short-lived theory that the immediate ancestors of the historical Cherokee were responsible for most of the mounds and earthworks in the zone beginning in eastern Iowa, extending through central Ohio into West Virginia, and thence into eastern Tennessee. In neither work, however, did Thomas identify the Cherokee value of any of the individual characters on the stone, nor did he explain the meaning of the inscription in the Cherokee language./2/

On the basis of the vegetation covering the mound, Thomas concluded that "the evidence seems positive that the mound was at least a hundred years old, and that it was known that it had not been disturbed in sixty years." (1894: 714) This would make the mound at least 30 years too old to have contained a Cherokee inscription in 1889. By some accounts, Sequoyah began work on his syllabary as early as 1809 (Holmes and Smith 1977), but even that is too recent by 20 years. Thomas reluctantly admitted that as Cherokee, the inscription presented "a puzzle difficult to solve." At the time, Thomas did at least believe that the mounds were generally of relatively recent origin, and had no way of knowing that modern radiocarbon methods would date the burial mounds in the Southern Ridge and Valley Province to 1355 A.D. at the very latest/3/, and elsewhere in the Ohio basin as belonging to the Adena and Hopewell cultures of 1000 B.C. to 700 A.D. (Potter 1968: 75).

Gerard Fowke (1902: 458) accepted without question Thomas's view that the characters on the Bat Creek tablet are some sort of Cherokee. Unlike Thomas, however, he found nothing anachronistic in this possibility: "... it is as easy to

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2. In the earlier work, Thomas more cautiously claimed merely that "An examination by those familiar with the subject will probably soon satisfy them that some of the characters, if not all, are letters of the Cherokee alphabet." (1890: 35) By 1894 he was already backing off from his Cherokee theory of the midwestern mounds, but · had completely convinced himself that the Bat Creek inscription itself was Cherokee.

3. The latest date Chapman (1987: 70) gives is 1335 A.D. Since this point estimate has a standard error of 100 years, it is by itself consistent at the 95% confidence level (+2σ) with a date as late as 1535 A.D., which for all practical purposes reaches DeSoto's expedition into Tennessee. However, this sample came from Construction Stage 3 of McDonald Mound A, which also yielded a carbon date of 1220 A.D. ± 100 yrs., and which lay entirely beneath Construction Stage 5, which yielded dates of 1145 A.D. ± 95 yrs., and 1155 ± 100 yrs. (Schroedl 1978: 189). Stage 5 therefore cannot be more recent than 1355 A.D. (1155 + 2σ). A fortiori, Stage 3 cannot be later than this date. In fact, the consensus of the four carbon dates is that the boundary between Stages 3 and 5 was approximately 1215 A.D. ± 50 yrs., so that Stage 3 must have been over by 1315 A.D. Stage 3 could have begun as early as 1020 A.D.; while Stage 5 could have begun as early as 1115 A.D. and possibly have finished the same year. The mound is clearly entirely pre-Columbian, even if we take into account that some of the carbon samples may already have been from old tree growth when the mound was built.

believe that Se-quo-yah, in constructing his alphabet, used marks resembling some that another person had formed, as to think that he would invent a series of signs or characters utterly unlike any other ever thought of."   Fowke's hypothesis that Sequoyah did not develop the Cherokee syllabary from scratch is in fact very plausible, given that even the legendary Cadmus, to whom Foster (1885) glowingly compares Sequoyah, is not supposed to have invented the Greek alphabet from whole cloth, but merely to have borrowed it from the Phoenicians (Naveh 1982: 175).   In fact, Thomas himself had originally conjectured that the Bat Creek stone might indicate "that Mr. Guess was not the author of the Cherokee alphabet." (1890: 36)

Fowke (and Thomas) had no evidence for the existence of such a Proto-Cherokee script other than the Bat Creek inscription itself. However, a descendant of George Guess named Traveller Bird has recently claimed that indeed Guess did not actually invent the Cherokee script, but rather merely popularized a writing system that had already been in use by a secretive scribal society for untold generations./4/ This would overcome the reservations Thomas had about the apparently Cherokee nature of the inscription.

Nevertheless, even if the Cherokee had been using their syllabary since time immemorial, the linguistic evidence of the placenames mentioned by sixteenth century Spanish explorers indicates that they were relatively late-comers to the lower Little Tennessee Valley (Hudson 1987: 84). A Cherokee inscription in a mound burial there would therefore still present chronological problems, given the 1355 A.D. upper limit on burial mound building in the region, unless they had at some even earlier time been displaced from the region.

Andrew Whiteford (1952: 207) noted that much of the material Thomas attributed to the Cherokee actually represented several distinct prehistoric complexes. He referred to the Bat Creek stone as "enigmatic" (p. 218), but did not elaborate. Whiteford attributed the mound the stone came from to the Middle Valley Aspect of the Woodland Pattern, i.e. to the Hamilton Focus, but added a rather significant question mark to this attribution (p. 223).

In the 1950s, Joseph Mahan, who had had occasion to learn the Cherokee language and syllabary in the course of his work, became puzzled by Thomas's identification, not just because of the chronology, but for the more basic reason that he "could see

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4. It should be noted that Traveller Bird's book (1971) is totally at variance with the received view (Foster 1885, Foreman 1938) on virtually all details. For example, he maintains that "Sequoyah" is a reference to the scribal society itself, and is not the Cherokee name of any individual, that George Guess's real Cherokee name was Sogwili (Horse), not Sequoyah, that George Gist and George Guess were two different persons, and that Gist had nothing to do with disseminating the syllabary. The book has been dismissed by reviewers (White 1972, Fogelson 1974) as an "elaborate fabrication," but see Bird's reply to White (Traveller Bird 1972). Unfortunately, Bird's reference (1971: 108) to a crucial letter by John Ridge in the Knoxville Gazette cannot be checked, since most of the issues of that paper for 1817 are no longer extant.

no relationship whatever between the symbols on the stone and those developed by Sequoyah." (Mahan 1971: 41) He eventually observed that a few of the letters, when inverted, did match those in Canaanite alphabet charts. This correspondence had already been noted by several non-specialists, including the late Henriette Mertz (1964: 130), W.W. Strong, and Joseph Corey Ayoob. Mahan sent a clear photograph of the inscription to Cyrus Gordon, an expert on ancient Semitic literature and inscriptions who was known to be sympathetic to the possibility of pre-Columbian contacts from the Old World.

Gordon (1972) declared that the characters are in fact late Paleo-Hebrew script dating to the first or perhaps second century A.D. Paleo-Hebrew is a member of the Canaanite family of alphabets, which includes Phoenician, Moabite, Punic, and Samaritan, and from which Archaic Greek, Etruscan, and ultimately the Roman alphabet derive. It is quite distinct from the "Square Hebrew" used to write Hebrew today, which evolved instead from the Aramaic alphabet. Gordon positively identified most of the letters and offered a Hebrew reading of the main string of five characters and a tentative reading of the remaining three. He drew on his extensive knowledge of ancient Near Eastern history to offer a context in which a desperation voyage across the Atlantic by Judeans who might have left this inscription would not have been infeasible or even improbable. Although some of the letters could be taken for Phoenician by the casual observer (this was the present author's own first impression), Gordon ruled out this possibility.

An abridged and less technical version of Gordon's definitive 1972 article appeared as a postscript to his Before Columbus (1971: 175-87). However, it omits much of the historical setting and some of the paleographic details contained in the later article. A nontechnical article by Gordon in Argosy magazine for Jan. 1971 is commendable for its color photographs of the stone and associated artifacts.

Gordon's reading of the inscription has been neither endorsed nor rejected in public by other Semitic scholars. The only published criticism of Gordon's position has been by Marshall McKusick./5/ In a letter to Biblical Archaeologist, he devotes a paragraph to the Bat Creek tablet, in which he states

> The "Canaanite" characters on the tablet closely resemble those used in the system of writing which Sequoyah developed around 1821 .... The Bat Creek tablet has only nine characters, too short a string to translate, especially because of variations in denotation of signs before the stabilization of the writing system by printing. Despite some difficulties, Cherokee script is a closer match to that on the tablet than the late-Canaanite proposed by Gordon. (1979: 139)

In personal communications, McKusick has indicated that the match to Cherokee is best in terms of a little-known early version of the Cherokee script which immediately preceded the standard printed version developed in 1827 by Samuel A.

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5. The late Glyn Daniel (1972: 4) fleetingly attacked Gordon's "belief" in the Bat Creek stone, but has informed me in a personal communication that he was relying primarily on McKusick's investigation of the matter.

Worcester, a missionary doctor. McKusick has therefore added an important new twist to the debate: Gordon might easily have missed the similarity of the text to Cherokee if he had only the printed version to go by, and might have gotten carried away by a coincidental resemblance to a few Hebrew letters. Like Thomas, however, McKusick has neither identified any of the individual characters nor offered a Cherokee language reading of them.

On purely geographical grounds, the Thomas-McKusick hypothesis is much more plausible than Gordon's. The tablet was found near the heart of historical Cherokee territory, halfway around the world from any generally recognized ancient Hebrew inscriptions, and just 8 miles down the Little Tennessee from Sequoyah's traditional birthplace at Tuskeegee, Tenn. Furthermore, if one were to pick a place for a museum expedition to find a single Hebrew inscription with a clearcut archaeological context in North America,/6/ one would probably not select Loudon County, Tennessee. As McKusick has called to my attention, the Tennessee River is not naturally navigable past Muscle Shoals in northern Alabama. At least one major portage would therefore have been necessary for such a deep penetration into the continent from the Gulf of Mexico up the Mississippi, Ohio and Tennessee Rivers. The Great Smoky Mountains also pose a formidable barrier to the East.

In this paper we attempt to resolve the Gordon-McKusick controversy by making a letter-by-letter comparison of the writing on the tablet to both Cherokee and Paleo-Hebrew, using both the printed version of Cherokee and the early one McKusick had in mind. We also investigate certain other important artifacts found in association with the Bat Creek tablet, and other pertinent circumstances surrounding the find.

Figure 1 shows the inscription, as first published by Thomas in his 1890 book (p. 36). For reasons that will become apparent, Thomas's figure is shown here inverted. An early photograph of the stone appears in Thomas's definitive report (1894: 394), and a Smithsonian photograph taken in 1970 was published by Gordon (1971: 183, 1972: 7), as well as by Mahan (1971: 42, 1983: 49). The illustration reproduced in Figure 1, however, shows considerable detail not visible in all of the photographs, as well as the appearance of the stone when found. This meticulous line drawing appears to have been made from an optically projected image of the stone. Figure 2, which was traced from a photograph of the stone, isolates the important man-made features appearing in Figure 1. Both figures are life-size.

Bat Creek as Cherokee

McKusick has kindly provided me with a copy of the early Cherokee syllabary he had in mind, from a rather scarce book by George Foster (1885: 112). I compared this with the standard Worcester Cherokee (Holmes and Smith: 2), and found that out of the 86 Foster characters, 38 remained essentially unchanged in the printed

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6. Other, indisputably Hebrew inscriptions have been found in North America, but they have either been surface finds, notably the Los Lunas, N.M. decalogue (Fell 1985) and the three coins of Bar Kokhba from various places in Kentucky discussed below, or else have been found by non-archaeologists, notably the five Newark, Ohio inscriptions (Alrutz 1980), and the Bent artifacts from Tucson, Ariz. (Covey 1975).

Figure 1. The Bat Creek Tablet. In its original condition as first published by
Thomas (1890: 36), but inverted. Life size.

Figure 2. Tracing of the important features originally present on the Bat Creek
Tablet. Life size.
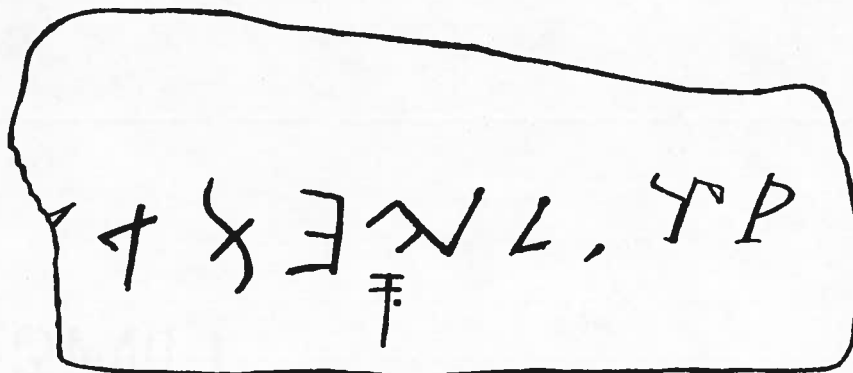
version. Another 32 underwent minor changes, but are readily recognizable. Only 15 underwent major changes, four of which were so extreme that their counterparts could be spotted only by elimination and by comparison of phonetic values. One redundant letter was dropped altogether in the standard 85 letter Worcester version.

Table 1 compares the 8 letters of the Bat Creek inscription, oriented as in Thomas's book and article, which is presumably the correct orientation if Thomas and McKusick are right, to printed and Fosterian Cherokee. I have used "un" to represent the nasal "u" sound, represented in Worcester's chart by "v." Each match is rated on an admittedly subjective scale of 1 to 4, which the reader is free to adjust. The criteria I have attempted to use are as follows:

1. Good. Letter is correctly, though not necessarily elegantly, formed in all its essentials.
2. Fair. Letter is incorrectly formed in some details, but is reasonably identifiable. May be well formed but backwards.
3. Conceivable. Letter bears some resemblance, but has major flaws that make the attribution highly questionable.
4. Impossible. No conceivable match exists.

In Table 1, letters f and g are "good" matches to printed Cherokee, b is a "fair" match, and c, d, and h are "conceivables." Letters a and e seem impossible. In terms of Foster's Cherokee, however, the overall fit is no better. One letter, g, actually fits worse: Foster's kah (= ga) distinctly falls forward, whereas that on the tablet lies back. It is a full 90 degrees out of orientation in comparison to Foster, but only 45 degrees off in comparison to the printed version. However, letter a could now conceivably be Foster's un. In Worcester, un looks just like a lower case i. In Foster, the dot over the "i" has a short stroke under it. This stroke could be a mere slip of the pen, but it is there nonetheless. Since letter a has an intentional dot to the left of it, Foster's un has all of its components, namely a vertical stroke, two horizontals, and a dot, albeit completely rearranged. The overall score as Cherokee when held as published by Thomas, using Worcester's ga and Foster's un, is thus two goods, one fair, four conceivables, and one impossible.

The tablet does not indicate which direction is up, so Table 2 attempts to match the inverted tablet (now oriented as in Figure 1) to Cherokee. The eight characters are here identified as i through viii. Against the printed Cherokee the score is now two goods, three fairs, and three impossibles. Against Foster's version, the kah again causes minor problems, but letter vi could now conceivably be a Foster quah. If we pool printed and Foster Cherokee, we obtain two goods, three fairs, one conceivable, and two impossibles. By inverting the tablet we therefore obtain five good to fair attributions, as opposed to only three when held Thomas-wise.

Among the John Howard Payne papers in the Gilcrease Institute in Tulsa, Oklahoma, is a paper attributed to George Gist showing what Holmes and Smith (1977: 288) identify as "the original Cherokee syllabary as invented by Sequoyah with the modified or present syllabary, shown together." This "original" syllabary is highly cursive and bears a clear similarity to the accompanying "modified or present" syllabary in only 15 cases. If Bat Creek represents some very early form

Table 1. Bat Creek as Cherokee. Stone held as published by Thomas, in its putatively Cherokee orientation.

Letter	Best Worcester Cherokee		Best Foster Cherokee	
a.	(4)		(3) un	
b.	(2) si	(3) le	(2) seeh(=si)	(3) leh(=le)
c.	(3) yi		(3) yeeh(=yi)	(3) gnaugh(=no)
d.	(3) ne	(3) di	(3) taah(=te)	(3) taugh(=do)
e.	(4)		(4)	
f.	(1) gun		(1) khan(=gun)	
g.	(1) ga		(2) kah(=ga)	
h.	(3) ha		(3) hah(=ha)	

Key to fit codes:
    1 = Good   (f, g)
    2 = Fair   (b)
    3 = Conceivable   (a, c, d, h)
    4 = Impossible   (e)

Table 2. Bat Creek as Cherokee. Stone held as in Figure 1.

Letter	Best Worcester Cherokee			Best Foster Cherokee
i. ⟨symbol⟩	⟨symbol⟩ (2) se			⟨symbol⟩ (2) seh(=se)
ii. ⟨symbol⟩	⟨symbol⟩ (1) ga			⟨symbol⟩ (2) kah(=ga)
iii. ⟨symbol⟩	⟨symbol⟩ (2) gun			⟨symbol⟩ (2) khan(=gun)
iv. ⟨symbol⟩	(4)			(4)
v. ⟨symbol⟩	L (2), tle	⟨symbol⟩ (3), tla	V (4) do	⟨symbol⟩ (2) clegh(=tle)
vi. ⟨symbol⟩	⟨symbol⟩ (3) mu			⟨symbol⟩ (3) quah(=qua)
vii. ⟨symbol⟩	P (1) tlun			P (1) clanh(=tlun)
viii. ⟨symbol⟩	(4)			(4)

Key to fit codes:
  1 = Good   (ii, vii)
  2 = Fair   (i, iii, v)
  3 = Conceivable   (vi)
  4 = Impossible   (iv, viii)

of Cherokee, it would make sense to attempt to fit it to this version. As it happens, however, such matches as we did find in Tables 1 and 2 almost completely fall apart when we make this attempt.

The "modified or present" syllabary accompanying this "original" syllabary is a particularly elegant hand-written version that is essentially identical to both Foster and Worcester in 39 cases, favors Worcester over Foster in 18 cases, Foster over Worcester in 9 cases, neither (with minor, level 2 problems) in 13 cases, and neither (with major, level 3 problems) in 7 cases. This version does not help either, however, since using it yi, te, and ha all drop from level 3 to level 4 in Table 2, with no improvements in either table.77/

Traveller Bird (1971: 18) also shows an "original" syllabary, which is rather linear, and almost completely unlike the Payne-Gist "original" syllabary. About two-thirds of these characters may be identified, but only tentatively, with the Worcester characters. (This task is made more difficult by the fact that Traveller Bird does not give the phonetic values of these characters, nor does he list them in the apparently significant non-phonetic order used in both Foster and Payne, and also in a copy of the Worcester syllabary reproduced by Foreman [1938: plate facing p. 41].) Twelve or so of Traveller Bird's characters match the Foster version better than they do the printed. The latter circumstance suggests that perhaps Foster is an intermediate stage lying somewhere in between Traveller Bird and Worcester. Be that as it may, however, the matches that we did find in Tables 1 and 2 again almost entirely evaporate when we compare Bat Creek to Bird's syllabary. Thus neither "original" syllabary helps us match Bat Creek to Cherokee, nor does the Payne-Gist "present or modified" syllabary.

According to Gordon, who has no particular claim to expertise in Cherokee, "The Cherokee syllabary ... has nothing to do with the Bat Creek text." (1972: 8) We have seen that in fact this is an overstatement: A few of the characters could pass for Cherokee, and possibly even a majority, provided we hold it upside down from its supposedly Cherokee orientation. We now investigate whether it fits any better as Hebrew.

Bat Creek as Hebrew

Gordon is suspected by many of being so eager to build his case for pre-Columbian contacts that he does not always give the evidence the care it deserves. Just in case he has unconsciously distorted ancient letter forms or selected unrepresentative types in order to maximize his case that Bat Creek is Paleo-Hebrew, we will not rely on his sketches of Paleo-Hebrew letters or on his identifications of letters. And just in case he has selected references whose errors or inaccuracies happen to agree most with his position, we will completely avoid his references, authoritative though they may be, namely Meshorer's Jewish Coins of the Second Temple Period, and Levy's Geschichte der jüdischen Münzen.

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7. Traveller Bird (1971, 117n) does not dispute Payne's attribution of this document to George Gist. (All authorities but Bird equate George Gist with George Guess and Sequoyah.)

Instead we rely entirely on other sources: for general information on Naveh's excellent new book (1982), for detailed letter types on Birnbaum's thorough opus (1954, 1971), for coin scripts on Kadman (1960) and Mildenberg (1984), and for other details on Eisenman (1983), Hanson (1964), and Yadin (1966). We even draw upon Gordon's nemesis, Frank M. Cross of Harvard University (1961, 1969) for important details.

Table 3 compares the 8 letters on the tablet, held as in Figure 1, to Paleo-Hebrew script. We find 4 "good" fits and 4 "fair" fits, with none at all in the lower two categories. Thus we have 8 for 8 good to fair as Hebrew, as against (at best) 5 for 8 good to fair, and that with two completely impossible, as Cherokee. The fit is thus much better as Hebrew than as Cherokee, even after we invert the supposedly Cherokee-oriented tablet so as to improve its fit.

A few words are in order about each letter. We will begin with the most characteristic letters. (The non-specialist may wish to skip to the last three paragraphs of this section.)

iv. (yod) It is this highly distinctive and rather complicated letter which, in conjunction with its two neighbors, gives the immediate appearance of Canaanite to the inscription, and which has led many individuals with no formal training in Semitic paleography (including W.W. Strong, Joseph Corey Ayoob, Henriette Mertz, Mahan, and the present author) mistakenly to identify it as "Phoenician." In classical Phoenician and most other Canaanite contexts, including early Paleo-Hebrew, however, this letter has the same elements, but the stem is either vertical or else even rotated clockwise, with the legs held horizontal, to form a "Z"-like letter with an extra leg to the left. The particular stance of iv, with the stem rotated counter-clockwise from vertical some 45°, appears primarily on the coins of the Jewish War (Kadman 1960: 124-32), on the late Hasmonaean coins of Antigonus Mattathias, 40-37 B.C. (Birnbaum I: 92, chart 54*) and on certain of the "Dead Sea Scrolls" dating from roughly 200 B.C. to 70 A.D., e.g. the Psalms Scroll tetragrammaton (Naveh 1982: plate 14D). In this downward-facing position, the right leg is usually at a right angle to the stem and parallel to the two left legs. The distinctly acute angle between the right leg and the stem, holding the other two legs perpendicular to the stem, which appears in iv, is a cursive trait which in a lapidary context appears only on certain of the Jewish War coins (e.g. Kadman 1960: plate I.7). The small drilled dot at the top of the right leg (which appears also at the top of v and the base of vi) is an ornamental detail to which Gordon has called attention. It is common in the Jewish War coins but is less conspicuous or entirely absent in Hasmonaean coins and in those of the Bar Kokhba War (132-135 A.D.). These dots were used in imitation of the similar ornamental dots, called "pearls," appearing on Greek-text coins circulating in the region during the period immediately preceding the Jewish War./8/ They are analogous to the ornamental

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8. See, for example, the tetradrachms of Antiochus VIII, 110 B.C. (Jewish Museum 1983: 14), the shekels of Tyre, 34 A.D. (ibid.: 19), and the bronzes of Procurator Antonius Felix of Judea, 54 A.D. (ibid.: 26). These Tyrian silver shekels were used in Jerusalem for payments at the Temple up until their suppression by Nero in 65 A.D. (ibid.: 19).

Table 3. Bat Creek as Paleo-Hebrew. Stone held as in Figure 1.

	Letter	Paleo-Hebrew	Fit	Century	Reference
i.		daleth	2	1st A.D.	D
ii.		waw	2	1st A.D.	E
		waw	1	4th B.C.	C
iii.		he	1	1st A.D.	D
iv.		yod	1	1st A.D.	E
v.		lamed	1	1st A.D.	D
vi.		qoph	2*	1st A.D.	D
		qoph	2*	1st A.D.	D
vii.		resh	3	1st A.D.	D
		resh	2	2nd A.D.	A

Table continued on next page.

Table 3, Continued.

Letter	Paleo-Hebrew	Fit	Century	Reference
viii.	waw	2**	1st A.D., 2nd B.C.	B
	aleph	3	1st A.D.	D

*   Upgraded from 3 (see text)

**   Downgraded from 1 (see text)

Key to fit codes:
1 = Good	(ii, iii, iv, v)	
2 = Fair	(i, vi, vii, viii)	
3 = Conceivable	(none)	
4 = Impossible	(none)	

References:
(A) Birnbaum 1954: Plate 61.
(B) Birnbaum 1971: 94, Chart 58*; 81, chart 48*.
(C) Cross 1969: Figs. 34, 35.
(D) Kadman 1969: 124-32
(E) Kadman 1969: Plate I.7

serifs used on Latin letters, and betray a Hellenistic influence. By Bar Kokhba times, the stem of yod ordinarily reverts to vertical (Mildenberg 1984: 375). Many other forms of yod also appear there, including the 45° counterclockwise stance (Birnbaum 1971: 98, chart 61*), but these are for the most part rare. (Mildenberg is particularly careful to single out the typical forms of the letters on the Bar Kokhba coins, since most of the forms that appear in Birnbaum and earlier letter charts are flukes that sometimes simply represent outright engraving errors.)

iii. (he) Classically, he is tipped about 30° counterclockwise to face downwards, the top leg juts beyond the stem, and the stem juts beyond the bottom leg. In most of the Hasmonaean coins, a unique form quite different from iii is ordinarily used. In the late Hasmonaean coins of Antigonus Mattathias, the classical he with its tipped stance reappears, with or without the juts (Birnbaum 1971: 92, chart 54*). The vertical stance of iii, and only the vertical stance, is characteristic of the Jewish War coins, usually with the juts (Kadman 1969: 124-32). In iii the bottom jut is (vestigially) present, but the top jut is altogether missing. However, the absence of juts in the late Hasmonaean coins mentioned indicates that they are not essential. (Their occasional absence in this period is perhaps another Hellenistic influence, from he's Greek cousin epsilon.) In the Bar Kokhba coins, he is highly variable. It may have the vertical stance of iii (Birnbaum 1971: 98, chart 61*), but this stance is not distinctive.

v. (lamed) This style of lamed could be quite old, were it positioned upward so that its horizontal leg was in line with the tops of the other letters and its vertical leg extended well above the other letters. Finding it down with the other letters occurs consistently in the Jewish War coins. It might be thought that this is only an expedient to make it fit on the coins. But we see the same stance in other late inscriptions that are not constrained by space, notably the Samaritan capital from Emmaus (Naveh 1982: 122, fig. 110) and the "Abba" inscription from late Second Temple Jerusalem (Naveh 1982: 121-3, also plate 15A). The barely 60° angle between the two legs is characteristic of Canaanite, as contrasted with Latin L or certain Cherokee letters. In Bar Kokhba coins, the acute angle and low stance are preserved, but the upper leg is typically vertical, with the lower leg tipped distinctly upwards (Mildenberg 1984: 135).

The three letters discussed above, when found in combination, are sufficient to identify the inscription as a good candidate for some sort of Canaanite, using even the primitive 1872 dictionary chart cited by Thomas in the same article in which he published the Bat Creek inscription upside down (1894: 642). On closer examination, we see that their particular form and stance by themselves actually narrow the style of the inscription pretty much to that of the first century A.D. We now examine the other letters, from left to right.

i. (daleth) A good daleth's vertical stroke should not jut beyond the top bar as it does here, and the bottom bar should meet the vertical to close the head, which it does not quite do. The top bar should jut beyond the vertical as it does here. As such, it could be from almost any period, and is not very distinctive. It could conceivably also be an irregularly made classical aleph, but, as Gordon points out, that would be inconsistent with the apparent period of the other letters.

    ii.   (waw)   Gordon, working from the 1970 photograph, was under the erroneous impression that this letter did not bend back to the right at the top, as it clearly does in Figure 1, and upon examination of the tablet itself. The problem here is that the tablet has a peculiar two-layer composition, which has been described as a (light tan colored) iron-rich siltstone, encrusted on one side with a (dark gray) iron oxide crust. For the most part, the letters have been scratched through the dark crust on the upper side to reveal the light matrix beneath, making the letters stand out so brightly that the photographs appear to have been enhanced with chalk dust, even though they have not. In a few places, however, the crust was either thicker or the engraver lost patience, and the light matrix does not show through. This is the case with the upper portion of letter ii. In the 1970 photograph, it appears to be a mere scratch in comparison with the rest of the letter, but in fact, it clearly is deliberately made. (The zig-zag next to ii, on the other hand, is a mere scratch. Similarly, the curl next to iii is a natural flaw in the stone.) Given the letter's true shape, ii is still clearly waw, however, as identified by Gordon. (In a different context, it might be a Punic mem, but this appears to be irrelevant here.) In the coins of the Jewish War, the elongated "S" line is composed of three straight segments (or of only the bottom two as in the coin forms cited by Gordon, but in these cases the upper one may just be missing off the edge of the coin or blending into the border of the coin), rather than a smooth curve. First Temple cursive forms and Lachish ostraca have an "S" shaped vertical, but with the top curve very tight and bottom quite straight. Second Temple cursive forms either omit the upper reversal in the curve, or else incorporate the upper curve into the crossbar. The Abba form is symmetrical top and bottom, but is unique in that its vertical is perfectly straight. The chronologically closest example of waw with an "S" that is both smoothly curved and symmetrical top and bottom appears in the seal of a governor of Samaria (c. 335-375 B.C.), as published by Cross (1969: figs. 34, 35). In Cross's photograph this letter appears to be rather broken, but his sketch reconstructs it to virtually the Bat Creek form. (His crossbar is somewhat wavy, but in all other waw forms it is a short straight line.) As Cross himself points out (1969: 60), the Samaritan and Paleo-Hebrew scripts do not go their separate ways until the first century B.C., after the irreconcilable rift of 128 B.C. This seal, although Samaritan, may therefore be taken as a prime example of Second Temple Paleo-Hebrew. Thanks to Cross, letter ii is therefore consistent with the Second Temple period, though contrary to Gordon, it does not particularly point to the Jewish War period and tends, if anything, to be a few centuries earlier.

    Despite Gordon's misreading of the shape of ii, we are in full agreement with him over his identification of the first 5 letters, all appearing to the left of the commma-shaped word divider and therefore apparently forming a single word. We also agree with him that all these letters are either specific to, or consistent with, a date best approximated by that of the Jewish War of 66-73 A.D., even though we do disagree with him as to precisely which letters are specific and which are merely consistent.

    According to Gordon, these 5 letters, read from right to left, spell "for Judea," the initial lamed forming the dative. Gordon notes that a ninth letter appears to have broken off the left end of the tablet, a small portion of which is still visible. Reconstructing this as a mem, which would form a plural, Gordon's

preferred reading is "for the Jews." (Gordon points out that another yod before the mem would improve the orthography, but that this is not absolutely essential.)

vi. (qoph) The very short foot at the base of this letter appears to be just an ornamental pearl such as appears on the yod and the lamed. An exact match cannot be found, but it appears to be intermediate between two qoph forms typical of the Jewish War coins (Kadman 1960: 124-32). The first form shown has an arm with a hook coming in from the left to a point below the top of the vertical stem, and a loop to the right which begins at the top of the vertical and comes back below the junction with the left arm. In the second form, the loop to the right collapses into the right arm of a crossbar that goes straight across the top as a continuation of the left arm. In vi, the loop has only partially collapsed onto its upper portion, and the left arm still meets below the top of the vertical. I would give only a "conceivable" to either of the Jewish War forms in isolation, but given that their difference is apparently inessential and that vi is intermediate, I give this letter a "fair" overall, and have accordingly upgraded its score from 3 to 2.

In addition to qoph, Gordon proposes sadhe as a possible reading of vi, based on cursive forms from the Qumran Manual of Discipline and the Habbakuk Commentary. I regard this as inadmissible, not because they are cursive (the objection Gordon raises), but because these are Square Hebrew letter forms, not Paleo-Hebrew!

vii (resh) This peculiar letter has a "P"-like loop on the right, and a clear-cut short horizontal foot. Were the loop on the left, and were it not for the foot, this would be an obvious resh of the Jewish War coins and many other contexts. However, the loop is on the wrong side and the foot cannot be dismissed as an ornamental serif, since in this post-Hellenistic context pearls should substitute for serifs. Nevertheless, resh appears with exactly this foot in four different Bar Kokhba coin dies./9/ Furthermore, in three of these four dies, the vertical stroke juts slightly above the loop, exactly as it does in vii. The only error in vii is therefore that it is made backwards, a fault which merely demotes it from "good" to "fair". Inverting this letter would have been an easy error to make in a post-Hellenistic environment: rho on the Greek-text "Roman" coins of Procurator Antonius Felix of Judea, 54 A.D., (Jewish Museum 1983: 26, #54) is the exact mirror image of its country cousin resh on typical Jewish War coins just one decade later./10/ Recall that some of our "fair" Cherokee matches consisted of "good" letters made backwards. It would be unfair not to give a shipwrecked Judean sailor an equal benefit of the doubt. In any event, he would not have been the last Tennessee frontiersman to have written a letter backwards.

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9. Namely, small silver (denarius/drachm) die R1 (Mildenberg 1984: 351, line 24), small silver die O5 (Mildenberg 1984: 351, line 28), small silver die R14' (Mildenberg 1984: 351, line 30), and a large bronze die that does not show up in Mildenberg's photographs, but which is absolutely clear in one of Birnbaum's plates (1954: plate 61).

10. The Masada ostraca discussed below demonstrate that the Zealots had a working knowledge of both the Greek and Paleo-Hebrew alphabets, and in fact used letters drawn from them side by side, perhaps to determine the suicide sequence by lots.

Gordon (following a suggestion of his student Robert Stieglitz) tentatively identified vii as zayin, based on two mirror-image forms shown in Levy's antiquated 1862 work on Jewish coins. (These forms also appear identically in turn-of-the-century British Museum letter charts.) Mildenberg points out that one of these two forms simply represents a blunder by a die-cutter who neglected to make one die in mirror image, so that the zayin in the name Elazar, along with every other letter, not to mention the letter order itself, comes out backwards on all the coins made from it! The inverted form itself bears only a tenuous similarity to vii, at best a "fair," and the non-inverted form is worse./11/ Since resh is merely backwards, but otherwise perfect, I regard it as a safer choice.

Gordon tentatively translates zayin - qoph as "comet", so that the main line of text would read, "A comet for the Jews." Gordon points out that this would make some sense as a personal title for a Judean leader, in view of the Star Prophecy which was then current./12/ I am informed by an Israeli colleague that resh - qoph with the dative can mean "only," giving instead "Only for the Jews" (or "Only for Judea" if we disregard the broken letter), which would also make sense, as a nationalistic slogan. Our proposed substitution of resh for zayin for vii therefore does not impair the inscription's legibility as Hebrew, and may even improve it./13/

viii. (waw?) Gordon tentatively identifies this letter as aleph, but this has two problems in a Jewish War context: First, the lower horizontal should extend to the right but not cross over to the left. And second, the two horizontals should extend much further to the right than the upper does to the left. I rate this as merely a "conceivable". Forms of aleph in which the upper horizontal is symmetrically placed and in the right proportion occur giving a "fair" (e.g. 6th century B.C. seals, Birnbaum 1954: plate 37), but generally these are too early for the rest of the inscription. However, Birnbaum actually gives the precise form of viii as a type of waw from coins of both Antigonus Mattathias (1971: 42, 1954: plate 54) and the Jewish War itself (1971: 94, chart 58*)! To be sure, Hasmonaean coins are notorious for their broken letters, and I am unable to find a photograph of a Jewish War coin with this waw form. Apparently it is from one of the smaller coins which are very difficult to read in photographs, which are more susceptible to a slip of the engraver's tool, and which in any event were not made with as much care as the larger coins. I suspect it is merely a broken form of a distinct type (with a horizontal uppermost bar) which appears frequently in Jewish War coins. In any event, it would be most peculiar/14/ (but for the considerations below) for a letter

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11. On the evolution of zayin, see Naveh (1982: 95).

12. The fact that this prophecy received considerable attention at the time is confirmed by Eisenman (1983: 25, 74 note 135). Thus it is not merely an invention of Gordon's.

13. Despite the fact that Mertz (1964: 130) misidentifed several of the letters, she deserves credit for originally identifying this letter as resh.

14. Peculiar, but not unprecedented. In the brief Abba inscription (Naveh 1982: 112-4, and plate 15A), he appears in four different forms!

to appear in two different forms in the same inscription. I therefore have downgraded it from "good" to just "fair," despite its perfect fit./15/

Gordon tentatively interprets this lone letter as a numeral, and suggests that this may be indicated by the dot to the right of it. (The dot is deliberately made, and not just a flaw in the stone.) As aleph it would mean "Year 1" of some era. As waw, it would mean "Year 6." If this is a numeral, the objection to a second form of waw would be mitigated, since it would not be unreasonable to use an alternate style to differentiate letters used as numerals from letters used phonetically.

Gordon also attempted to decipher a pair of vertical strokes now present at the top left of the tablet when held as in Figure 1. (These are the ninth letter referred to by McKusick above.) These strokes, however, do not appear in our illustration from Thomas's 1890 book despite its immaculate detail. Nor are they in the slightly blurry photograph in his 1894 report, nor even in a handwritten sketch submitted from the field by the agent who discovered it (Emmert 1889c). Yet they are very clearly present on the tablet today, as they were in the 1970 photograph Gordon worked from. These strokes are therefore merely doodles (or possibly tool-sharpening marks) added to the inscription sometime between 1894 and 1970, while the stone was in the Museum of Natural History in Washington. It is a tribute either to Gordon's analysis or to his serendipity that he could not identify them as Hebrew, but merely pronounced them "enigmatic" in a footnote (1972: 18, note 13)./16/

We concur with Gordon that the internal paleographic evidence points to the first or second century A.D. as the approximate date of the Bat Creek Inscription. We would prefer the former century. One letter (vii) did fit better to the Bar Kokhba coins of two or three generations later, and another (ii) to a fourth century B.C. seal, but as Eisenman points out (1983: 28-31, 81-82), the evolution of Paleo-Hebrew was surely one of many parallel and competing traditions that would emerge, disappear and then reappear, rather than a uniform linear march, so that it is quite possible that these forms were also in use in the first century A.D./17/

The fit of the Bat Creek inscription to Paleo-Hebrew is by no means completely satisfying; four of the eight characters are only "fair" fits. It is by no means

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15. This letter could also conceivably be a samekh. This letter should have three crossbars near the top, not two. Nevertheless, one could imagine one of them atrophying by analogy to the evolution of heth, whose three crossbars simplify to two, and eventually even to one (Naveh 1982: 96).
16. Gus Van Beek, Curator of Old World Archaeology at the Smithsonian Institution at the time, spoke of two "scratches" that were added to the stone after its discovery, apparently having in mind these two strokes (quoted by Ford 1972). He evidently neglected to inform Gordon that they were not originally present.

17. In the 1971 version of his paper, Gordon prefers the second century A.D., more on the basis of the nearby coin finds than on any internal evidence from the inscription itself. In the definitive 1972 version, he simply identifies the inscription as being of "Roman era," which in Judea could mean either the first or second century A.D.

unheard of for Paleo-Hebrew inscriptions to have unprecedented letter forms. The "Abba" inscription, for example, has no less than five different letters that are identifiable from their context, but which are not elsewhere attested in the Paleo-Hebrew references cited here./18/ However, this precedent provides cold comfort at best. If the Bat Creek inscription were similarly long enough to find the irregular characters recurring with the same letter values, the case that it is really Paleo-Hebrew would be open and shut. Nevertheless, at least until some better alternative is proposed, we find this identification of it to be entirely persuasive.

Hebrew versus Cherokee (and English)

Purely by chance, an inscription may very well have a few letters in common with any randomly chosen alphabet or syllabary. No one would argue that Bat Creek is English, yet it is possible to find a few English letters in it. If we hold it as originally published by Thomas, we can find d (good), h (conceivable), E (good), S (fair), and b (conceivable), with three letters completely unidentifiable (score 4). The score as English is thus 2 good, 1 fair, 2 conceivable, and 3 impossible, only a little worse than Cherokee (2 good, 1 fair, 4 conceivable, and 1 impossible) in this orientation.

If we invert the tablet as in Figure 1, we have numeral 4 (fair) and letters S (fair), E (only fair because now backwards), L (only fair because of the distinctly acute angle in spite of the vertical stem of the E), Y (conceivable), P (good), and perhaps T (only conceivable because of the redundant crossbar), with only one character impossible. The English score is now 1 good, 4 fair, 2 conceivable, and 1 impossible, essentially the same as the Cherokee score in this orientation (2, 3, 1, 2, respectively). The score as English, therefore, is quite similar to that as Cherokee, either way we hold it.

If the inscription is truly Cherokee, the probability of any given level of fit or better must be higher for Cherokee than it is for Hebrew./19/ We begin by comparing the Cherokee matches of Table 1 (2 good, 1 fair, 4 conceivable and 1 impossible) to the Hebrew matches of Table 3 (4 good, 4 fair, 0 conceivable and 0 impossible). The probability of Cherokee performing as poorly relative to Hebrew as it did, contingent on the null hypothesis that Cherokee is actually better in terms of the underlying probabilities, depends on the true value of the latter probabilities. However, a valid upper bound on the former probability is 0.037.

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18. Specifically, samekh, caph, aleph, yod, and waw. See Naveh (1973).

19. It might be objected that this comparison is actually highly unfair to Hebrew, since it would seem that the probability of a random fit to one of the 22 letters of the Paleo-Hebrew alphabet must be much smaller than that of a random fit to one of the 85 letters of the Cherokee syllabary. This is probably not the case, however, since most of the Paleo-Hebrew letters took on many distinct shapes over the many centuries the script was used, so that the total pool of different shapes is almost comparable in size to that of Cherokee, even when Worcester is augmented with Foster.

This is less than the 0.05 probability level customarily employed as the threshhold of "statistical significance" (i.e. at the 95% confidence level). We may therefore state that Hebrew fits significantly better than Cherokee with this orientation./20/

Using the improved Cherokee matches of Table 2 (2 good, 3 fair, 1 conceivable and 2 impossible), the upper bound on this probability becomes 0.236. Although Hebrew does fit substantially better in this orientation, the difference is not statistically significant. Note, however, that none of the proponents of Cherokee has ever claimed that this is the correct orientation.

Tests based on a simple "body count" of matches are no substitute for the experienced judgement of scholars who have a feel for both the script and the underlying language. Unfortunately, there are very few scholars who have been trained equally in both Paleo-Hebrew and Cherokee. (The present author is equally qualified in both, but only in the sense that he has no formal training whatsoever in either!) Although the fit is clearly better as Paleo-Hebrew than as Cherokee, the fact that only four of the eight letters rate a "good" fit is disappointing, as noted above. The reader will undoubtedly want to hear the views of both Cherokee scholars and Hebrew paleographers before jumping to any conclusions about this rather unique artifact. To date there has been a deplorable dearth of public comments by experts, one way or the other, on either Thomas's or Gordon's identification of the script.

One possibility that may have occurred to the reader is whether Bat Creek might not be both Hebrew and Cherokee! That is, if it is Hebrew, and if Cherokee does go back before Sequoyah as Fowke suspected and as Traveller Bird claims, is it possible that the modern Cherokee script ultimately evolved from Paleo-Hebrew, perhaps from this very contact? Indeed, on the basis of certain American Indian customs and expressions, James Adair (1775), John Haywood (1823) and others believed that there was some sort of a cultural link between the American Indians, and in particular the Cherokee themselves, and the ancient Judeans.

Whatever the merits of the Adair-Haywood argument,/21/ and despite the

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20. The test employed here formally tests the null hypothesis that the inscription is Cherokee against the alternative that it is Hebrew in a manner which takes account of the qualitative information contained in our ranking. A simple contingency table test does not take into account the order of its columns and is therefore not as powerful for the problem at hand. The details of this test are contained in an unpublished appendix to this paper, available from the author on request.

21. It is interesting to note that the conclusive argument against Adair's long-forgotten theory was the complete absence of any Hebrew inscriptions in North America (Warden 1834:145). Likewise, the conclusive argument against the authenticity of David Wyrick's two Hebrew inscriptions from Newark, Ohio is today the complete absence (apart from the three inscriptions found there after his death) of any further evidence of Hebrew presence "in the 125 years of subsequent archaeological research" (Lepper [c1986]). On Adair's comparisons of Hebrew and

intrinsic improbability that anyone ever invented a functional, non-pictographic phonetic writing system from whole cloth, it is highly unlikely that the Cherokee syllabary evolved from Paleo-Hebrew or any other true alphabet. On the one hand, a syllabary is very unlikely to evolve from an alphabet, unless the symbols for the different syllables are basically modifications of a common consonant symbol, as is the case with the Cree, Ethiopian, and Burmese syllabaries, for example, but which is not the case with Cherokee. And on the other hand, there are almost no (even halfway) isophonic isomorphs when we compare Paleo-Hebrew with Cherokee./22/

The Historical Setting

Gordon, particularly in the definitive 1972 version of his position, argues that there was a substantial maritime dimension to ancient Israel which is often neglected by historians, and that a contact dating from the Jewish War period would not be unreasonable or even improbable. Again, skeptics may suspect that Gordon has simply exaggerated the importance of a few isolated, trivial, or even disputed events drawn from his vast knowledge of Biblical history to make an artificially strong case for his pet theory. Rather than accept Gordon's conceivably selective reading of Judean history, we will therefore refer instead to an independent source, in this case Kadman's capsule history of the Jewish War (1960: 14-41). Kadman draws on the standard ancient sources, as qualified by modern archaeological evidence and perspective.

According to Kadman, Joppe (Jaffa) was the base of a Judean navy during this war, which, although "small," was sufficiently active to be able to block sea traffic between Syria, Phoenicia, and Egypt. A Roman fleet effectively destroyed this navy in 68 A.D. The Romans went on to capture Jerusalem in 70 A.D. At this time, the entire population of Jerusalem was either massacred or enslaved, with the exception of 2500 who, according to Kadman, perished in the ampitheater, "either at the stake or in gladitorial and wild beast combats."/23/ The Romans were so notoriously cruel to their captives that the last holdouts at the Masada fortress chose suicide over capture when their position became untenable in 73 A.D.

Indian vocabulary, Warden does cite a Discourse on the Religion of the Indian Tribes of North America, written in 1820 by a Dr. Jarvis (p. 13).

22. Barry Fell (1980:80) has suggested the Cypro-Minoan syllabary as a source for Cherokee. This proposal is far more plausible on its face value, but one would want to see careful documentation of several intermediate stages (beginning perhaps with Fell 1980:78, 1982:112) leading to one of the pre-Worcester versions of Cherokee before accepting it. Mahan (1983: 127) has suggested the Brahmi and related semi-alphabets of India. However, these are not full syllabaries, and are therefore subject to the same objection as any true alphabet.

23. Mildenberg (1984: 73-109) points out that a sizeable Judean population outside of Jerusalem must have been spared slaughter and deportation, since otherwise the subsequent Bar Kokhba rebellion would have been impossible.

To repeat, the existence and defeat of this Judean navy is not just a figment of Gordon's hyperactive imagination, but rather is an elementary and uncontroversial historical fact.

One would conjecture that this hastily assembled "navy" was a ragtag swarm of commandeered fishing boats and merchant ships, rather than a few large galleys built expressly for war. It is not necessary to assume that the Roman fleet captured or destroyed every single one of these vessels during the battle of 68 A.D. In the confusion of battle, it would not be unlikely that a few boats could have escaped while the less numerous but more effective Roman galleys were elsewhere engaged. In any event, at least a few sailors may have been able to cling undetected to wreckage and eventually to have reached shore, where they may have been able to "liberate" other small craft surreptitously. These hypothetical but not improbable survivors would have taken any risk to escape the Roman world and capture. The overland route to the Parthian Empire was blocked by the Roman armies. This left only the sea and whatever lay beyond the Gates of Gibraltar. Even though the Mediterranean was "controlled" by the Romans, it is sufficiently vast that it would probably have been possible for a small ship to slip across it without being challenged, particularly if it stopped only at the smallest villages for supplies (if at all). And whatever unknown terrors the Atlantic may have held in store, they would have seemed minor in comparison with the certain alternative prospect of playing cat and mouse with the lions in Caesarea.

There were many disturbances in Second Temple Judea among the various political and religious factions that could have forced the losers into exile (Eisenman 1983). These purely internal conflicts, however, would not have forced the exiles to leave the known world altogether, but merely to relocate to Alexandria, Rome, or any of the many other centers of Jewish settlement. Naveh's Abba, for example, complained of having been exiled, but he went no further than Babylon (Naveh 1982: 121-3). The Jewish War appears to have been the unique conflict in which both Rome was the adversary and the Judeans had access to ships and the coast. There is some paleographic evidence (and, as we shall see below, controversial numismatic evidence) pointing to the Bar Kokhba War, but according to Mildenberg (1984: 73-109), these rebels never controlled any coast but that of the Dead Sea./24/ Historically, as paleographically, the period of the Jewish War therefore seems like the most likely context for this inscription.

The coins of the Jewish war are dated with letters of the Paleo-Hebrew alphabet acting as numerals, starting with aleph = Year 1 = 65/66 A.D. Gordon's reading of letter viii as aleph would not fit into this chronology, since "Year 1" was one of optimism and high hopes rather than one of defeat and escape. Gordon instead suggested that this was Year 1 of some (unspecified) new era, perhaps associated with the leadership of the person buried with the inscription. If, however, we accept Birnbaum's waw form for viii, which would give it the numerical value 6, and

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24. Note, however, that Steiglitz (1976: 4) cites the epitaph of a Roman admiral as evidence of a naval dimension to the Bar Kokhba war, and also suggests the "Diaspora Rebellion" of 115-117 A.D. as a possible context for this contact.

if we assume that the inscription was made by survivors of the naval battle of 68 A.D., then it is perfectly reasonable to read this character as Year 6 of the Jewish War, i.e. 70/71 A.D./25/

In 1971, Samuel Eliot Morison (1971: Chapter V) gave the impression that fourteenth and fifteenth century improvements to the caravel made sailing into the wind on the ocean and hence trans-Atlantic crossings feasible for the first time. If so, an ancient Judean inscription in the New World would be impossible.

We know today, however, that the Atlantic can be crossed in vessels as primitive as an oversized wicker basket (Heyerdahl 1971) or leather bucket (Severin 1977). Vikings could and did reach the New World without caravels (Ingstad 1971). Even ocean-going rafts can sail into the wind with the aid of leeboards (Doran 1971). Stout wooden merchant ships have been used in the Eastern Mediterranean since at least the 14th century B.C., as evidenced by a wreck recently excavated there (Bass 1987). This ship was similar in size to the tiny, yet ocean-worthy pinnace Discovery, which carried a crew of 8 and 12 passengers to the Jamestown colony in 1607./26/ J.V. Luce (1971: 64-66) confirms that the ancients knew how to tack – in formation, no less – from at least the fourth century B.C., and clearly had the capability of crossing the Atlantic. According to David Kelley (1971: 64), all that is wanting to confirm the existence of early Atlantic crossings is a well-documented inscription.

This still leaves the problem of the isolated location of the Bat Creek mound group. Why would these visitors have ended up so far into the interior of the continent, in an area that cannot be reached by water travel from the Gulf without portages, and which is blocked from the Atlantic coast by the Great Smoky Mountains?

As it happens, the current view (Chapman 1985: 97) is that the very first extracontinental visitor to the interior of the eastern United States after Columbus, Hernando De Soto in 1539-43, simply left his ships in Florida, scrambled over the mountains to the north of the Smokys with 600 men and baggage, and then came down the Tennessee River to camp for 6 days at the mouth of the Little Tennessee, only 12 miles downstream from the Bat Creek mounds. His main force remained there during this period, but he is believed to have sent cavalry up the Little Tennessee to explore its valley (Hudson 1987: 79). Such a foray would have passed within a pike's throw of the Bat Creek mound group. Not long afterwards, in 1567, Juan Pardo reached Satapo (Citico) on the Little Tennessee just 19 miles above Bat Creek (Hudson 1987: 84).

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25. After Year 1, a shin (abbreviation for the Hebrew word for year) ordinarily appears before the numeral giving the date in the coins, but is absent here. As noted, Gordon suggests that the dot before (i.e. to the right of) viii may serve as a substitute.

26. A reproduction of the 20-ton Discovery is on display at the Jamestown Festival Park, Virginia. According to staff, similar pinnaces were routinely used to resupply the colony.

The lower Little Tennessee Valley evidently held a magnetic attraction to early modern explorers, one which would have been no less irresistible in the first century A.D.

The Use of Paleo-Hebrew

Paleo-Hebrew is the Canaanite script originally used to write Hebrew during First Temple times. Sometime during or after the Judeans' Babylonian captivity, traditionally during the time of Ezra in the fifth century B.C., and surely by the second century B.C., the Aramaic script replaced the original Hebrew script for mainstream religious purposes, even for the writing of Hebrew. The Aramaic script was of course also used to write the Aramaic language, which had become the everyday language of most Judeans. This Aramaic script quickly evolved into the "Square Hebrew" script which has been used exclusively to write Hebrew since the collapse of the Bar Kokhba rebellion in 135 A.D. All but a handful of the "Dead Sea Scrolls" from Qumran are written in Square Hebrew./27/

Despite the pre-eminence of the Square Hebrew script, Paleo-Hebrew survived into the second century A.D. It seems to have been the preferred script for nationalistic purposes, and was used almost exclusively for coin legends whenever Judea shook off foreign control, the Aramaic script being associated with Persian domination. A handful of the Qumran manuscripts were written in Paleo-Hebrew, suggesting that at least some religious factions preferred the old script. Even those Qumran manuscripts that were written in Square Hebrew often employed Paleo-Hebrew to write the ineffable name YHWH (Yahweh or Jehovah) of God./28/ At Masada, ostraca have been found bearing isolated Paleo-Hebrew letters, alongside isolated Greek letters and proper names written in Aramaic script (Yadin 1966: 190). Even though Paleo-Hebrew was no longer in primary use, it was apparently expected to be understood by anyone with a minimal education and was trotted out for special purposes, much as we use Roman numerals on appropriate occasions today even though they were "replaced" some 500 years ago by Arabic numerals, or Greek letters to name college societies. The Samaritans to the north of Judea continued to use a variety of Paleo-Hebrew down to the present century.

Birnbaum (1971: 70-87) strongly insists that the use of Paleo-Hebrew in the coins was a strictly artificial revival of a script no one could even understand, and that the great diversity of letter forms in the Hasmonaean and Bar Kokhba coins is evidence that the engravers had little or no idea of what they were writing. If

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27. See Naveh (1982: 112-24, 162-74) for an overview of this transition from the "Hebrew" (i.e. Paleo-Hebrew) to the "Jewish" (i.e. Square Hebrew) script.

28. One might think that this practice was intended to sanctify the divine name, but Birnbaum (1971: 63), following M.H. Segal, actually takes the opposite position, that its use was intended to desanctify the scroll so that it could be handled with less ceremony! My own theory is that it merely served as a red flag to prevent novices, whose primary language would have been Aramaic or even Greek, from blurting out the forbidden name while reading phoenetically from a text they might not fully understand.

so, we would not expect to find sailors of the first century A.D. who could read it, let alone write it.

However, Birnbaum is virtually alone in his view. Almost all scholars (Cross 1961: 189 note 4; Hanson 1964: 42; Naveh 1982: 112-124; Eisenman 1983: 28, 78 note 149; Kadman 1960: 124-32) concur that Paleo-Hebrew was a living tradition up to at least 70 A.D. The Abba inscription cited by Naveh (1982: 121-123), a Judean (i.e. non-Samaritan) funerary inscription occurring in late Second Temple Jerusalem, is conclusive proof that it was still used in some circles. By the second century A.D. its use may have become artificial, as evidenced by the fact that Simon Bar Kosiba (Bar Kokhba) himself use Square Hebrew letters even when communicating in Hebrew with his followers (Birnbaum 1971: 79), but such a late date does not necessarily concern us./29/

The Burial

The inscribed tablet was found in Bat Creek Mound #3, one of a group of three mounds on the land of M.M. Tipton near the mouth of Bat Creek, by an agent of the Bureau of American Ethnology. The Bureau made a point of not paying farmers for the right to dig, and instead promised the farmers the prospective glory of having their names associated with any noteworthy finds. By all rights the tablet should therefore be called the "Tipton tablet" rather than the "Bat Creek tablet."

The Bureau agent, John W. Emmert, turned in a plat of the Bat Creek group, but it is missing from the Archives./30/ The Little Tennessee River has recently been dammed to form Lake Tellico (elev. 813 feet), but Bat Creek Mounds #2 and 3, being on the second terrace, which begins at about 820 feet, would be just above the lake level. In fact, these two mounds (which were only 100 feet apart, center to center) appear from his description to be the unnatural wiggle in the 840 foot contour on the Loudon, Tenn. quadrangle at UTM coordinates E486, N490 (zone 16). Bat Creek Mound #1, which appeared to Emmert to be just a large shell midden, was more extensively excavated by Schroedl (1975), and, being on the first terrace, would presently be under water. According to Schroedl, the sites of Mounds #2 and 3 had been covered with buildings at the time of his excavations.

Mound #3 contained nine skeletons laid on the original surface of the earth in a careful arrangement relative to one another, who therefore appear to have been buried simultaneously at the time the mound was originally built. There were no other burials in the mound. All nine skeletons were badly decayed, suggesting considerable age. Immediately under the skull and jaw bones of one of the skeletons

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29. On the other hand, the erratic letter forms appearing on some of Bar Kokhba's coins may simply indicate that his engravers were Gentiles hastily brought in from abroad to practice this specialized craft, who may well have been ignorant of Hebrew altogether.

30. A second group of three mounds on the Tipton property, a plat of which does survive in the files, is two miles further up the Little Tennessee, near the old Morganton ferry landing. The two Tipton groups should not be confused.

were found the inscribed tablet, two bracelets identified by Emmert and Thomas as copper, a small drilled fossil, a copper bead, a bone implement, and some pieces of polished wood that may have been earspools. The engraved stone was lying just under the back part of the skull. Emmert reported that he struck the tablet, but only on its rough side, with a steel rod in probing before he came to the skeletons. These artifacts, along with the mandible of the skull resting on the tablet, have been in the Museum of Natural History's collections in Washington ever since their discovery in 1889./31/

The mound was rather small in size, particularly to have contained nine skeletons, being only 28 feet in diameter and 5 feet high. Nevertheless, it constituted a well-defined archaeological context. Emmert, who was by 1889 perhaps the Bureau's most experienced mound explorer, was careful to look for evidence of age and intrusion. According to his field report (1889d),

> I found some large sasafras [sic] trees standing on the mound and Mr. Tipton told me that he had choped [sic] other trees off of it forty years ago and that the mound had been a cluster of trees and grape vines as far back as the oldest setler [sic] could recolect [sic]. There was an old rotten stump yet in the center of this mound the roots of which ran down in the mound almost or quite to where the skeletons were found. That any one could have ever worked this mound without leaving some evidence of it I think it imposable [sic].
> I worked this mound by cuting [sic] a pit 8 feet Square right down from the top to the bottom, taking out old rotten roots all the way. I found the entire mound to be of hard red clay all the way from top to bottom without any change of color whatever. Not any seams in the earth which would have been if the ground had ever been disturbed.

The excavations performed by the Mound Survey were not documented to modern archaeological standards, but it is clear enough from Emmert's report where and in what context the stone was found.

The "Copper" Bracelets

The bracelets found with the inscription/32/ were originally identified without analysis by both Emmert and Thomas as "copper," on the strength of the nineteenth century doctrine, originating with Squier and Davis (1848: 202-3) if not even earlier, that all cupreous mound artifacts are made of native copper, ordinarily from the Lake Superior region. Upon analysis in 1970 by the Smithsonian's

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31. The Smithsonian erroneously states that the tablet was merely "acquired" by the Museum, four years after its discovery (Smithsonian, [c1971]). The term "acquired" misleadingly connotes uncertainty as to source. The mysterious four year gap is perhaps based on the mistaken notion that Emmert, who became a regular assistant in 1885, did all his work for the Bureau in that year.

32. A photograph of these bracelets has been published by Mahan (1971: 40, 1983: 54).

Conservation-Analytical Laboratory, however, the Bat Creek bracelets turned out instead to be copper alloyed with approximately 27% zinc and 3.3% lead, i.e. heavily leaded yellow brass.

According to a recent survey of the holdings of the British Museum by Paul Craddock (1977, 1978), brasses with similar zinc contents occur in antiquity, but only during a rather brief time period. Prior to the first century B.C., literary references to brass occur, but allude to it as a very rare and expensive metal probably originating from Asia Minor. Actual artifacts from this period are rare and ordinarily contain far less than 27% zinc.

Sometime around 45 B.C., however, the "cementation" process of producing brass seems to have been perfected, making brass production economical, and suddenly brass coins and other everyday objects became common. At first this brass regularly contained 22 to 28% zinc, 28% being the equilibrium to which the cementation process tends when carried to completion. Later, however, it became common to dilute the raw cementation brass with cheap scrap bronze (copper alloyed with tin and sometimes lead, but not zinc) in order to achieve a less expensive, more golden-colored alloy, approximately 13% zinc being the most favored concentration. Craddock (1978: 13) notes that 13 of 82 first century A.D. Roman brasses and coins have over 22% zinc, but only 2 of the 94 second century, and none of the 32 third and fourth century Roman brasses surveyed has more than 22% zinc. By the third century, therefore, undiluted cementation brass became virtually unused. The Bat Creek bracelets, if of ancient Mediterranean origin, are therefore highly indicative of the period 45 B.C. to 200 A.D., and most likely date from prior to 100 A.D. They therefore correlate perfectly with the paleographic evidence pointing to a Jewish War (or conceivably Bar Kokhba) context./33/

Brasses similar to the Bat Creek bracelets also occur in modern times, from at least the 14th century on (Metal Industry 1950: 50). Today brass is no longer constrained to the 28% upper limit of the cementation process, and brasses with up to 40% zinc are common, since zinc is now less expensive than copper. Nevertheless, brass with an approximate composition of 24% zinc, 3% lead, and 1% tin is today a commonly used foundry metal, frequently employed in plumbing fittings, ornamental work, chandeliers and andirons (West 1982: 7.10). On purely metallurgical grounds, the Bat Creek bracelets could therefore easily be modern, but this is ruled out by the mound burial itself, not to mention the carbon date discused below.

The late Earle Caley's thorough 1964 study of the composition of Roman brass coins found that Roman coins with over 22.4% zinc never have more than 0.5% lead plus tin (1964: 110). The 12 non-coin copper alloy Roman origin objects containing 8% or more zinc that he analyzed (p. 107) are all consistent with the coin composition. Caley concluded from this limited evidence that coins were the source of all Roman brass objects, even though only one of the 12 items he examined was too large to have been made from a single coin. In 1970, when Caley's book was the most

33. After 45 B.C., the new brass technology quickly spread to India and China. I have not seen any details of the composition of Indian or Chinese brass, but I assume it is irrelevant in the present context.

comprehensive study of Roman era brass available,   the   conclusion   could   therefore
have   legitimately   been   drawn that the bracelets found with the tablet, because of
their high concentration of both zinc and lead, could not have been ancient and must
instead   have   been post-Columbian trade goods that somehow found their way into the
mound, placing a recent date on the   entire   burial.   To   judge   from   an   internal
memorandum   referring   to   Caley's   tables accompanying a copy of the lab report, in
fact, this reasoning may actually have been followed by the Smithsonian's   staff   to
reach   their   otherwise unsubstantiated conclusions to the effect that "recent tests
by our Conservation Laboratory on the   brass   bracelets   found   in   the   same   grave
definitely established that they are 18-19th century trade goods and do not have the
chemical composition of brass of the Roman or early Semitic periods."/34/

Craddock's   far   more   comprehensive   survey,   however,   shows   that Caley's
generalization was   incorrect.   He analyzes 444 Roman copper alloy   noncoin   objects,
108 of which contain 4% or more zinc, and 32 of which contain 22% or more zinc.   His
Figure 5 (1978: 10) shows that of these 32 Roman brasses having 22% or more zinc, 12
have   3%   or   more   lead   plus   tin,   6 have 5% or more lead plus tin, and all but 6
contain 1% or more lead plus tin.   His results therefore clearly   contradict   Caley,
only one of whose 12 objects contained as much as 22% zinc.   In Part 2 of his series
he gives the actual composition of a late Hellenistic (first century B.C.) statuette
of   Hermes   leading a lady, found in Egypt (1977: 120, #261)./35/   He describes this
as "the earliest known statuette of brass made by the cementation process."   (1977:
107-8)   Its composition, together with that of the Bat Creek bracelets, is shown in
Table 4.

The   only   noteworthy   difference   between   the   Bat   Creek   bracelets   and the
Hellenistic Hermes with Lady is the presence of .50% tin in   the   latter.   However,
both   the   tin and lead would have been deliberate additions in high-zinc brass that
has not been diluted with scrap bronze.   Tin strengthens the alloy, while lead makes
it   easier   to   cast.   Strength   would   have   been important in the statuette, which
presumably supports its weight by the thin ankles of the figures,   but   not   in   the
massive bracelets.   The   fact   that   it   is   omitted in the bracelets is therefore
inconsequential./36/

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34.   (Smithsonian, [c1971]).   The allusion to the "early Semitic period," which must
refer   to   the   Akkadian   takeover   of Mesopotamia from Sumer in the third millenium
B.C., is mystifying.

35.   The   Hellenistic period in Egypt did not end until the death of Cleopatra in 30
B.C.   Craddock notes that the statuette could conceivably be early Roman era instead
of Hellenistic.

36.   In   a   letter   dated   24 May 1988, Craddock indicated in response to an earlier
draft   of   this   section   that "The date range of 45 B.C. - 200 A.D. you give on the
brasses   is   rather tight.   Brasses with this composition are known from the Coptic,
Islamic,   Byzantine and Medieval world, and are certainly not excluded from the late
Roman   Empire although it is correct that the high zinc brasses do seem to belong to
the   late   Republican   and   Early   Imperial   period.   It   is   also correct that the
composition   of   the bracelets is quite acceptable for the Roman period, although of
course as you admit equally acceptable for much later periods."

Table 4. Composition of Bracelets Found with Bat Creek Stone, Together with that of First Century B.C. Hellenistic Egyptian Statuette of Hermes Leading a Lady. (Percent of total.*)

	Bat Creek Bracelet A	Bat Creek Bracelet B	Hellenistic Egyptian Statuette (1st century B.C.)
Copper	68.2	66.5	69.0
Zinc	27.5	26.5	26.3
Lead	3.29	3.30	3.80
Tin	.005	n.d.**	.50
Reference	1	1	2

* Due to measurement error on the major components and the presence of numerous minor impurities in all three artifacts not tabulated here, total may not equal 100%.
** n.d. = not detected.
References
(1) Smithsonian Conservation-Analytic Laboratory Report # 1069, November 30, 1970.
(2) Craddock 1978: 120, #261.

Harry H. Hicks and Robert N. Anderson (1985) report success with using PIXE (Particle-Induced X-Ray Emission) spectrometry to age-date copper alloys. Their technique is based on gradual changes that take place over time in the micro-distribution of elements within the alloy. Anderson, of the San Jose State University Materials Engineering Department, has informed me that the method would work as well with brass as with bronze. There are no plans or funds available at present to apply this technique to the Bat Creek bracelets, though at some future date this could be worth pursuing.

Radiocarbon Date of the Burial

According to McKusick (1979: 139), "Thomas ... identified the burial of the tablet as dating from the period of historic European contact because there remained fragments of bark and polished wood which had not decayed in the moist environment." Thomas actually made no such inference, though it was not an unreasonable one on McKusick's part, given only the information in Thomas's 1894 report. However, the

fragments could well have been of considerable age, given the information in Emmert's field report that they were saturated with copper salts: "The pieces of wood was [sic] soft and colored green with copper rust off the Bracelets. I could squeese [sic] the green water out of them by pressing between my fingers." (Emmert 1889d) It is not uncommon for sites dating back as far as the Hopewell era to produce organic material that has been preserved by similar contact with copper.

Likewise, Gus Van Beek (quoted by Ford 1972), argued that the inscription must be relatively recent, since the two vertical strokes now present on the stone appeared to him to have the same patina as the rest of the inscription. As noted above, these two strokes were added to the stone sometime between 1894 and 1970. Van Beek concluded that the inscription must be also be modern, despite the fact that he conceded (as indirectly quoted by Science Digest 1971: 39) that "most of the letters on the stone are clearly Hebrew." Despite the patina or lack thereof, however, the inscription must be of the same age as the wood fragments, since they were found with the same burial.

The wood fragments together weigh approximately 5.5 grams, short of the 10 gm. minimum recommended for the conventional carbon-14 dating method available in 1970 when Gordon first announced his reading of the inscription and initially asked for a carbon date, even if the fragments had been totally consumed. A more expensive and time-consuming accelerator mass spectroscopy (AMS) method permitting samples as small as 10 milligrams was developed in the late 1970s, but the Smithsonian has been reluctant to expend its own funds on such a test. However, in September 1987, the Institute for the Study of American Cultures of Columbus, Ga. agreed to underwrite this cost. A sample carefully prepared by Carolyn Rose, Director of the Anthropology-Conservation Laboratory, was sent directly to Beta Analytic, Inc. in Coral Gables, Fla., for testing on the ETH accelerator in Zurich.

The sample yielded a dendrochronologically calibrated date of 427 A.D., with a 1σ range of 240 A.D. - 638 A.D. and a 2σ range of 32 A.D. - 769 A.D. (Beta-24483 / ETH-3677) The uncalibrated C-14 date, for comparison to other studies, was 1605 B.P. (345 A.D.) ± 170 yrs. The calibrated dates are considered more accurate. Appropriately enough, this calibration is largely based on the rings of the giant Sequoia.

The unusually large standard error on the carbon date (100 years or less on the uncalibrated date would be more common) is due to the fact that after pre-treatment and pyrolysis to amorphous carbon, an unusually small amount of pure carbon remained, despite the fact that 30 mg. of material was submitted. Beta Analytic has since adopted a procedure of combusion and conversion to graphite, which results in less loss of volatile carbon compounds. Retesting with the new procedure and/or a larger sample at some time in the future might therefore give a more precise date, though Murry Tamers of Beta Analytic does not recommend such a test at this time. Because of the small amount of test material, no correction for C-13 could be made.

As expected on the basis of the letter forms, the historical context, and the composition of the brass bracelets, the carbon date is consistent with a first or second century A.D. contact. Despite the large standard error, it rules out any date after 769 A.D., and therefore clashes with nineteenth century Sequoyan Cherokee

even more than Thomas originally suspected. It also demonstrates that Van Beek was mistaken about the patina.

If McKusick had been right and the letters were an early version of the Cherokee syllabary, the tablet would have constituted a sensational vindication of Traveller Bird's position, and would have destroyed the conventional wisdom that American Indians had no phonetic writing system before Columbus. The brass bracelets would have indicated a much higher level of metallurgical skill on this continent than has hitherto been suspected./37/ Since the letters are in fact Paleo-Hebrew, and not Cherokee, however, a minimalist interpretation of the cultural significance of the inscription, taken by itself, is far less dramatic, as this may well have been merely an isolated, accidental contact by representatives of people who are well known to have had phonetic writing and access to brass. Knowledge of the script may well have died with whoever made the inscription.

The mound burial itself indicates, however, that there was at least some cultural contact between the refugees and the Indians. The fact that they were buried with high Indian honors rather than being simply massacred and dumped in the river suggests that they lived peacefully among the natives and were treated by them as distinguished strangers. The fact that a letter appears to have been broken off the tablet suggests that the inscription was not made for this burial, but rather had been carried about for some time. It is therefore possible that it was an heirloom passed down from generation to generation, and hence may have been carved decades or even centuries before the burial itself. The carbon date refers, of course, to the tree growth represented by the wood fragments, and not to the inscription or the contact itself. Although the carbon date is consistent with a Jewish War date, it does indicate that a substantially later date, in the range 240 A.D. to 638 A.D., would be more likely for the burial. The individuals buried with the stone may therefore have been assimilated descendants of the original refugees, who could not even read the inscription, rather than the refugees themselves. The earspools (if indeed this is what the wood fragments are) would likewise suggest an assimilated descendant. Examination of the retained mandible by physical anthropologists might shed some light on this important issue./38/

On the basis of a limited number of carbon dates, Chapman (1987: 69-70) found that mound burials in the Southern Ridge and Valley Province date from roughly 300 B.C. to as late as 1335 A.D. He noted, however, that most of the earlier ones

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37. Mining engineer Carl Henrich (1896: 176-7) reported evidence of ancient copper smelting in nearby Ducktown, Tenn., in a context he interpreted as "mound-builder." Nevertheless, brass-making is a far more advanced process than mere copper smelting, so that these bracelets were almost surely carried to the New World by whoever made the inscription, even if copper was being smelted locally at the time.

38. Curtiss Hoffman has suggested that tooth wear may indicate whether the individual was raised on a typically Amerindian or Mediterranean diet.

employ stone in their construction and that the solid earth ones in this region that had been dated as of his writing tended to be of later, Late Woodland/Early Mississippian date (p. 65). He admitted, however, that this generalization was only tentative and that "more research is needed on burial mounds in this region, especially earlier mounds." Unlike adjacent Bat Creek Mound #2, Mound #3 did not employ stone walls in its construction, but was solid earth. Its relatively early carbon date of 427 A.D. therefore pushes back somewhat the earliest dated use of solid earth.

The Metal Artifacts from Mound #2

At the same time Emmert explored Bat Creek Mound #3, he also excavated two unusual metal artifacts from a grave in Bat Creek Mound #2, which lies a mere 100 feet from Mound #3, measured center to center (Thomas 1894: 391-2, Emmert 1889b, 1889d). He identified both of these as "buckles," but one of them, a heart-shaped ornament, is clearly a silver brooch. The other is a buckle in the shape of a shield, which may be brass, bronze, or perhaps tarnished silver. Emmert was unable to say from the appearance of the soil itself whether the burial was intrusive or not (1889d), but on the basis of the position of this burial above other, unrelated burials in the same mound, Thomas concluded persuasively in his report that it was indeed intrusive.

Because of the proximity of these finds in both time and place to that of the Bat Creek stone, they have always been vaguely associated with it. It is certainly tantalizing to wonder if they are not from the same era as the inscription. Thus, Mahan (1971: 39) publishes a photograph of them, alongside photographs of the stone and bracelets from Mound #3./39/

However, Richard Polhemus has called to my attention that the brooch is in fact a very common item of 18th century trade silver. Woodward (1970: ch. 6) shows a shelfful of these heart brooches, of British manufacture. The ones he shows are doubled and/or have crowns, but the fine outline and the little twist at the foot are immistakeable. The twist and/or the crown are supposed to make the heart represent the fifth wound of Christ. Chapman (1985: 102, Fig. 8.3) shows virtually the identical item from an historic Cherokee village, single and without the crown.

These articles, therefore, are definitely modern trade items having absolutely nothing to do with the Bat Creek inscription and bracelets from Mound #3. The intrusive burial, in fact, is in all likelihood Cherokee. The buckle has a military appearance and could have been acquired peacefully or otherwise from colonial militiamen, from British regulars stationed at Fort Loudon, or possibly from French or even Spanish soldiers. If its source can be identified, it surely tells an interesting story. The modern character of the intrusive burial is corroborated by the presence of fragments of buckskin still sticking fast to the leg bones, if we may assume that the deceased did not wear copper-clad leggings. These leg bones

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39. In a later work, Mahan (1983: 53) incorrectly identifies the buckle and brooch as having come from Mound #3.

were solid enough to have been turned in by Emmert and cataloged, and may be carbon-datable.   The burials in a limestone vault beneath this intrusive burial were very much decayed, and were surely of a much early period.

The Bar Kokhba Coins from Kentucky

Gordon (1972: 5-6) calls attention to the fact that three ancient Hebrew coins of the Bar Kokhba rebellion of 132-135 A.D. were found at widely separated places, at different times, by different people, in neighboring Kentucky.   If these coins are genuine and were not lost by modern collectors, which seems unlikely in view of the rural location of two of the finds, we would have to conclude that the Bat Creek inscription dates from the second century A.D. rather than the first, despite the paleographic, historical and metallurgical considerations pointing to the earlier century, unless we were willing to admit the likelihood of two such extraordinary contacts in the same region just one century apart.

Jeremiah Epstein has published a survey of 40 such ancient coin finds in the United States, in which he devotes a thoughtful page to the Kentucky Bar Kokhba coins (1980: 9)./40/   Epstein sent a copy of a newspaper photograph of one of the three to Yaakov Meshorer (the very expert on whom Gordon primarily relies for coin scripts), who identified it as a copy from the beginning of the twentieth century of the type sold in Palestine to tourists and pilgrims, apparently a passably good cast of an authentic coin. In a comment immediately following Epstein's article, T.V. Buttrey (p. 12) laments that "numismatists have often had to work from descriptions, sketches, or photographs.   Gross modern forgeries can sometimes be caught in this way, but the better fakes, such as good casts from ancient specimens, can only be perceived on direct examination."   Epstein admits that Ralph Marcus of the University of Chicago personally examined the same coin, and determined it to be geniune, and that Marcus and Meshorer are both experts on the period. He also notes that Israel Naamani of the University of Louisville continued to accept Marcus's judgement even after Meshorer's verdict. But because the coin seemed similar to a fourth Bar Kokhba coin from South Carolina, also identified by Meshorer as a modern forgery (Epstein 1980: 10), Epstein concluded that it was indeed a modern copy. Having thus disposed of the one, he hastened to the conclusion that the other two were surely also of modern origin.

According to Mildenberg, in his comprehensive corpus of the Bar Kokhba coinage (1984), forgeries and copies of Bar Kokhba coins (as contrasted with the far more popular shekels of the Jewish War) are very unusual./41/   On his last page of

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40. Epstein actually quotes an entire paragraph from the Before Columbus version of Gordon's article.   This is the only concrete evidence I have seen that any mainstream scholar has ever read either version.

41. Note however, that in conjunction with its 1988 exhibition on the Judeao-Roman port city of Caesarea, the Smithsonian's gift shop was selling inexpensive reproductions of three Bar Kokhba coins (one of which was misidentified as a Jewish War shekel), along with only one Jewish War coin. The Bar Kokhba coins have evidently become more popular since Mildenberg's writing.   The Smithsonian reproductions are transparently inauthentic as to size, metal, and artistic detail.

plates, he is able to show only one specimen of a copy of a Bar Kokhba coin made for sale to pilgrims and tourists, and only a handful of one-of-a-kind forgeries. According to Gordon, the three Kentucky coins are diverse and not replicas of one another. It therefore seems highly unlikely that all three of them are copies, and thus highly likely that at least two of them must be genuine.

In sum, the Bar Kokhba coins remain in limbo. All three deserve further research, at the very minimum hands-on examination by more experts to determine if they are genuine or copies. Even if some or all are genuine, their status as essentially surface finds (extraordinary though such a grouping of surface finds would be) may preclude one from pushing the date of the Bat Creek inscription up to the second century A.D./42/

A Forgery?

Investigations by Charles Faulkner and Jefferson Chapman have uncovered the fact that Emmert had a drinking problem that led Thomas to fire him in March 1887, and made him reluctant to rehire him thereafter. They both have indicated in personal communications that they believe that Emmert planted the inscription in an attempt to "ingratiate" himself with Thomas as soon as he did go back to work in February 1889.

The correspondence/43/ indicates that Emmert became severely ill with ague (an acute fever with chills, resembling malaria) and neuralgia (acute pain radiating along the nerves) in March of 1885 after spending three months excavating the Citico mound in snow and rain. He reluctantly went home to bed, and his physician prescribed quinine and whiskey. Afterwards, he chronically suffered from "chilling," for which he continued to take this "strong medicine," with or without the quinine. By October 1885 he confessed to Thomas in a letter that he was often finding himself under the influence of the whiskey and promised to give it up, but apparently he did not. In March of 1887, just as Thomas was about to lay Emmert off anyway for lack of funds, Thomas received a letter from a postmaster reporting with undisguised glee that Emmert's drunken behavior was casting discredit upon the Bureau.

Thomas promptly fired Emmert (his letter crossed one from Emmert complaining of continued chilling), and refused throughout 1887 and 1888 to rehire him, despite Emmert's frequent entreaties and attempts at political string-pulling. (Emmert was

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42. One of the two coins not examined by Meshorer was found near Hopkinsville, a major campsite on the 1838 "Trail of Tears," where the graves of two Cherokee chiefs may still be found today (New York Times Dec. 21, 1987, p. 9). In the 1971 version of his article, Gordon ridiculed the strawman hypothesis that the Bat Creek stone was an Old World curio collected by a Cherokee chieftain to gratify his interest in ancient Hebrew relics. Could he have spoken too hastily?

43. Unless otherwise indicated, these letters are in BAE Letters Received, under "Emmert" or "Thomas."

friends or at least claimed to be friends with various important Democratic elected officials, and attributed the rumors against him to his political enemies.)

In a letter dated 12/19/88 to Thomas, Emmert (1888) expressed great sympathy for Thomas's still embryonic Cherokee theory of the origin of the midwestern mounds, and suggested that if he were rehired, proof of this theory would be forthcoming. Thomas warily rehired Emmert, who went back to work with great enthusiasm on Feb. 1, 1889. Within two weeks he had found the stone. If the Bat Creek inscription were really Cherokee, one might therefore wonder if Emmert had planted it.

There are a number of problems with the Emmert forgery hypothesis, however. The first problem is that the authoritative contemporaries, who knew the circumstances better than anyone today, accepted the tablet as genuine. Thomas expressed full confidence in Emmert's "good and faithful work," despite his "drunkenness," in an 1892 letter of reference for him. Because of the unusual nature of the inscription, which Thomas viewed as almost too neatly confirming his Cherokee theory of the midwestern mounds, Thomas actually took the unusual precaution of sending another agent (who turns out to have been James Middleton) "to the field where Mr. Emmert was at work, to learn the whole history of the find. . . . The examination by the person sent confirmed the statement by Mr. Emmert in every particular." (Thomas 1890: 37) Thomas, who was the Bureau's principal armchair authority on forgeries, had full confidence in the inscription in his 1894 report, and Fowke (himself a Bureau insider who would have been privy to any suspicions of forgery) found no reason to question its authenticity in his 1902 book, despite the fact that it appeared to clash with his own view that the mounds were much older than Thomas would allow. Fowke devoted several pages of the same book to various inscriptions he viewed as fraudulent, and was therefore himself an expert of sorts on forgeries.

The second problem is that if Emmert was not above fabricating evidence, this scandal would discredit the large portion of the Mound Survey's work that he was responsible for. Indeed, Emmert himself was the Bureau's principal field expert on forgeries, having already in 1882 discovered the North Carolina source of certain bogus pipes that Thomas triumphantly paraded in his report (1894: 346-49). Are we to believe that these might actually be fake fakes, i.e. genuine artifacts that Emmert merely passed off as fakes in order to "ingratiate" himself with Thomas? Are these conceivably the only genuine artifacts Emmert turned in? And how many obviously ancient, genuine inscriptions did Emmert quietly discard in order to give Thomas only what he wanted to see? The mind boggles at the possibilities.

The third problem is that if Emmert had forged the Bat Creek inscription to please Thomas, he could easily have done a much better job of Cherokee, since his letter of Dec. 19, 1888 indicated that he had just spent the summer with the Cherokee in North Carolina. Even if he did not himself understand Cherokee, he could easily have asked someone to write out a plausible epitaph or personal name in Cherokee script and simply copied it onto the stone. However, it fits no better as Cherokee than as English, and no one has ever suggested that the few "Cherokee" letters present make any more sense than the few "English" letters present.

The fourth problem with the Emmert forgery theory is that the inscription is intelligible (with admitted difficulties) as Paleo-Hebrew. Although Emmert had an

avid and intelligent interest in the mound project, Thomas correctly described him in his letter of reference as "not an educated man." Emmert's letters are full of misspelled words and ungrammatical constructions. He never fully mastered the present tense of the English verb to be. It is virtually "imposable" (to use Emmert's own homespun orthography) to believe that this man, drunk or sober, took it upon himself to learn the standard Square Hebrew alphabet, found a Hebrew root, correctly formed its dative, added an appropriate adverb, and then transliterated the whole consistently into arcane Second Temple Paleo-Hebrew./44/

Fifth, and conclusively, even if Emmert somehow performed this feat, he could hardly have "ingratiated" himself with Thomas, whose mission was to debunk once and for all the once-popular hypothesis that the American Indians in general, and the Moundbuilders in particular, were somehow descended from ancient Israelites, by turning in a Hebrew inscription from an Indian mound! If Thomas had spotted it for what it is, it is no exaggeration to say that Emmert would have been out the door in a second, with the stone flying through the air right behind him. It is only thanks to the fact that Thomas misidentified it as Cherokee that it was published at all.

If one insists on making the Bat Creek inscription a forgery, one could easily find far more plausible culprits than Emmert.

Take DeSoto's priests, for example. They were surely highly erudite and well trained in Hebrew. One of them may have carved it to amuse himself, and then left it behind for a Late, Late Woodland Indian to find and take with him to the Afterworld in his mound burial. This walking fossil of the Hopewell tribe just happened to be wearing earspools that had been handed down to him from father to son for 44 generations. To be sure, a full decipherment of the Paleo-Hebrew coin script was not published until the nineteenth century, so how could this priest have known about it? As it happens, Kadman (1960: 43) reports that a good woodcut of a Jewish War shekel was published in Paris in 1538, the very year before DeSoto's expedition left Spain! Evidently this priest saw the woodcut, precociously figured out the script in his spare time while on his way to the New World, and then died (for want of quinine and/or mixer) of the same ague that Emmert contracted before he could return to publish his discovery. Evidently.

Or take James Adair, whose otherwise highly respected 1775 book on The History of the American Indians devotes over 200 pages to the hypothesis that the Cherokee and neighboring tribes were descended from the ancient Jews. He traded with these tribes and probably visited, or even lived in, the Little Tennessee Valley at some time. His book shows he had a working knowledge of Hebrew, and Richard Polhemus has called to my attention that a Canaanite letter chart appeared already in the 1762

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44. It is true that the 1872 dictionary letter chart cited by Thomas (1894: 642) as the cribsheet from which his contemporary forgers worked shows versions of the letter forms present on the Bat Creek tablet. However, these are jumbled together with letters from the First Temple period and from other Canaanite scripts, along with many bizarre forms not mentioned in the modern sources used here. It even includes a spurious 23rd letter between heth and teth. The irregularities in the Bat Creek letters do not come from this letter chart.

Encyclopédie of Diderot and D'Alembert. Adair may well have had access to this chart.   Adair reports that the local tribes were continually at war. He could therefore have easily rounded up nine casualties and buried them with a tablet that he himself forged, in order to provide evidence for his theory. Anticipating carbon-14 dating, he must have shrewdly thrown in a few wood fragments from an authentic mound.   A date prior to 1775 would overcome the problem that so perplexed Thomas, that Bat Creek Mound #3 appeared to have been at least 100 years old in 1889.

If it wasn't DeSoto's priest or Adair, there is always John Haywood, who shared and elaborated upon Adair's theories. He was so fond of forgeries that in 1800 he actually resigned his position on the North Carolina Supreme Court to defend (unsuccessfully) a notorious forger of land-warrants./45/   He did not move to Tennessee until 1810, but could easily have visited there in the 1780s or 90s to plant evidence to support his views. It is not clear whether this erudite legal scholar and antiquarian knew any Hebrew. However, someone by the name of John Haywood actually published a Hebrew grammar in Cambridge, Mass. in 1808! Even if this was not the same Haywood, it demonstrates that there was no shortage of early Americans who had a working knowledge of Hebrew, and/or an axe to grind for theories that would be supported by the inscription, any one of whom would make a more plausible candidate than Emmert.

However, there is one particularly subtle Paleo-Hebrew detail on the Bat Creek stone that brings all these theories to grief, ingenious though they may be. This is the comma-shaped mark between letters v and vi, identified by Gordon as a word divider.   In Square Hebrew, as in Cherokee and English, words are divided by spaces. In Phoenician, they are simply run together. But in Paleo-Hebrew, words are divided by small marks (Naveh 1973, 1982:36). Usually these are simple dots, as in the Mesha and Kilamu steles (Birnbaum 1954: plates 013, 014). In the Qumran Leviticus fragments, not found until shortly after World War II, however, precisely this comma-shaped mark is used to separate words./46/

Any forger working from even the most perfect of letter charts to transliterate a few words of Hebrew would have omitted the word divider altogether and used a space instead.   If he was familiar with Phoenician, he might have run the words together. In the unlikely but not impossible event he had studied the Mesha stele, discovered in 1868, he would have used a dot, but not a comma. In order for one to maintain that Emmert or DeSoto's priest or Adair or Haywood or anyone else forged the Bat Creek inscription, therefore, one would have to be prepared to maintain that the culprit also took the precaution of planting the Leviticus fragments in the Qumran caves!

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45. National Cyclopaedia of American Biography Vol. 4, p. 39.

46. See (Birnbaum 1954: plates 28-30), (Naveh 1982: plate 14c). Hanson (1964:   41) dates these fragments to circa 125-175 B.C. Cross (1961: 189, note 4) concurs that they are of much later date than Birnbaum would allow. Samaritan texts ordinarily use a pair of dots, placed one over another like a colon.   In Paleo-Hebrew coins, words are ordinarily separated by design elements or appear on separate lines.

Conclusions

Contrary to Marshall McKusick's recent pronouncement, the Bat Creek inscription fits significantly better as the Paleo-Hebrew identified by Cyrus Gordon than it does as the Cherokee identified by Cyrus Thomas. As conceded already by Gus Van Beek, the inscription clearly contains several letters of Hebrew. The inscription fits only slightly better as Cherokee than as English, either way up, and actually works better as Cherokee upside-down from its supposedly Cherokee orientation (though still not as well as Hebrew). No one has ever claimed that it makes any more sense as Cherokee than as English, but as Hebrew it certainly contains the root "Judea" with a dative inflection, and appears to read "Only for the Judeans." Despite some quibbles over details, our choice of the Jewish War of 66-73 A.D. as a likely context for this contact is in basic agreement with Gordon's interpretation.

Newly published metallurgical considerations indicate that the brass bracelets found with the inscription, if from the ancient Roman world and not modern, are characteristic of the first century B.C. to the second century A.D. A new radiocarbon date on the Bat Creek burial places it between the first and eighth centuries A.D., which rules out the possibility of a modern origin for either the inscription or the bracelets.

Readers should seek out the views of qualified Semitic and Cherokee scholars before jumping to any conclusions concerning this rather extraordinary artifact. In the meanwhile the consensus of the evidence available to amateurs like myself is that it is an authentic Roman-era Judean inscription.

Whatever else the Bat Creek inscription proves, the fact that it is readily recognizable by non-experts as at least a plausible candidate for some sort of Canaanite script casts serious doubt on the ability of Cyrus Thomas, a major nineteenth century "authority" on inscribed tablets, to spot an ancient inscription if one were to bite him on the nose. A reconsideration of the inscriptions he dismissed as forgeries would therefore be in order./47/

Similarly, the fact that the bracelets found with the inscription turned out to be high-zinc yellow brass after having been dogmatically classified by Thomas as (red) native copper, casts doubt on his classification of all other cupreous objects found by the Mound Survey. These should be extensively analyzed.

In a lead editorial in Antiquity back in 1972, the late Glyn Daniel called for a thorough investigation by scholars of both sides of the case for each item put

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47. On pp. 632-43 of the same report in which Thomas published the Bat Creek stone upside-down, he drew upon his "expertise" with ancient alphabets to attack the authenticity of the Grave Creek tablet and the Davenport shale tablets. In all fairness to Thomas, it should be mentioned that the Davenport limestone tablet denounced by him on stratigraphic (rather than paleographic) grounds surely is a forgery, though McKusick (1970) has ably shown that he was wrong to insinuate that Rev. Jacob Gass was the culprit. The conspirators likewise forged the second elephant pipe. The case of Thomas and McKusick against the shale tablets and the first elephant pipe is much weaker.

forward as evidence of pre-Columbian contacts, including in particular the Bat Creek inscription (1972: 5). Gordon had already carefully presented his side of the Bat Creek case, but aside from Marshall McKusick's single paragraph, and Van Beek's allusion to the patina, no one has ever answered Daniel's call to present the other side. Instead, the Bat Creek inscription has been studiously ignored in published work: Nigel Davies makes no reference to it at all in his 1979 <u>Ancient Voyages to the New World</u>, despite his discussion of Gordon's <u>Before Columbus</u>. Gerald Schroedl's report on his recent excavations at the <u>Bat Creek site</u> (1975: 103) specifically mentions Mound #3 and that Whiteford had attributed it to the Hamilton Focus, but gives no hint of the existence of the unusual tablet, let alone of Gordon's identification of it as a Judeo-Roman trait. Likewise, Jefferson Chapman's recent survey of <u>Tellico Archaeology</u> (1985: 14) spends a page dismissing the notion that ancient Israelites once occupied North America in general, and the Little Tennessee Valley in particular, yet contains not a word about the Bat Creek inscription, not even as a curious fluke or suspected forgery. To quote McKusick (1980: 65) one last time, but now 180 degrees out of context,

> The archaeological evidence is totally ignored. It is as if scientific archaeology had vanished from the scene, or had never existed, and we had no more knowledge of the past than the early nineteenth century antiquarians.

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