

LA TIERRA

Quarterly Newsletter of the Southern Texas Archaeological Association

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T. C. Hill, Jr.
Newsletter Editor

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RENEWAL OF MEMBERSHIP FORM FOR 1975 (Enclosed)	

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Dr. Thomas R. Hester, University of Texas at San Antonio (Chairman)
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La Tierra is distributed quarterly to members of the Southern Texas Archaeological Association. For membership information, contact the Treasurer.

Manuscripts and other items for the newsletter should be submitted to T.C. Hill, Jr., Box 518, Crystal City, Texas 78839.

REMARKS FROM THE EDITOR

Well, I finally got to meet some old buddies at the September 14 STAA meeting... folks from far away places who've helped me to financially support the U.S. Mail over the years...folks who come on as exciting and "real", in person, as they did by card and letter. It was my pleasure, amigos, and we all look forward to seeing you again. What drew them in, from all over the state? A rather rare and precious experience, that's what...but we'll get to that directly.

We are throwing some really wild quarterly meetings, fellow members, some really impressive gatherings, and if you've not seen your way clear to making some of them yet, you're not getting your STAA money's worth. Each of our Saturday afternoon "main attractions" seemed, at the time, to be the absolute "peak" for class, but we've managed to come along and surprise ourselves by doing it again... and again.

Plans now call for an early December congregating in Corpus Christi, with a well-known expert on coastal archeology to head the program. A natural? You bet... so let's turn out in good numbers to make him feel welcome.

Another item...our annual membership dues are soon (now!) coming up for renewal. Many of us bought the \$5.00 ticket for '74, but thank goodness enough "heavy spenders" came in with the \$10.00 or \$20.00 options to enable us to shoestring it through this first year without undue financial stress. But just barely! This La Tierra ate up the bulk of our resources rather early in the year, until we learned to reproduce and mail it more reasonably. Now we want a "bulletin" in '75, something we can take pride in and use as a standard of excellence for future annual "bulletins".

The September 14 quarterly meeting was held at the Witte Museum, with Anne Fox welcoming us to her gracious quarters. The business portion was quickly disposed of; short talks by STAA members followed. Gene Griffin discussed a couple of highly exciting, big sites in southern Illinois, where he had managed to spend some time this summer. Harvey Smith described his recent experiment in removing sections of several occupational levels, intact, from Baker Cave in Val Verde County, to be transported to the lab and dissected in a totally controlled situation, predicting recovery of tiny plant and faunal, etc., remains from all that soot and dust and trampled trash which might have been missed by field methods. (Delightfully, Jim Word...who has done so much work at Baker Cave...had come down all the way from Floydada to sit in with us. He seemed terribly interested, I thought.)

Dr. Hester reviewed the June-July UTSA Field School, with a lot of slides and snide snickering at scenes of your worthy Newsletter Editor attempting to enliven the group with nightly guitar and song. I continue to be impressed with those six students of his (see La Tierra 1, #3)...they photograph so sad and wretched, to have now recovered so completely, hitting it again on weekends!

Then came the big show...the feature! J.B. Sollberger is the number one flint flaker in our state, no doubt about it. He is also blessed with just about the keenest mind, to go with his technical skill and his wonderfully coordinated hands, that you have ever seen.

He began his odyssey 11-12 years ago, "out of curiosity", and I suspect he's causing more and more of a small uproar among the few really great knappers around the country, as he continues to smash rocks and think and read, and to find little faults among much of the present theory of the business. He goes out only very occasionally to publicly demonstrate his art, and we were able to secure him, I imagine, because he's always found us to be sympathetic and deeply in need of his compiled lore. And maybe out of simple friendship...

We've read many of Solly's published reports...he's so busy...but we needed to see him, I guess, to believe him. And now we know he's for real. (Mary Francis Chadderdon later wrote, "I was entranced by Solly...have seen a number of competent rock-knockers, he was 'way above them...such a variety of tools...and as a few people began to ask questions and he quietly gave those scholarly, technical answers, I realized that here was a man completely master of his craft, in tune with his medium...there are certain things the medium will do and certain things it will not...it will cooperate and it will refuse...the hours spent in communion with it...sometimes called "practice"...gradually reveal its nature, and then the two of them can work together...Solly knows his flint on very intimate terms".)

I had a letter from Solly, a few days after his demonstration: "Was not satisfied with my part of the program...very sluggish, not my best work...make it up to you, at a later date?" Oh, Solly, you had that crowd in your hands! You even stirred Col. Thomas Kelly and others to begin collecting flint and to smash their fingers and bleed all over the place.

Solly selected a large, thick flake, rapped it briefly with a small hammerstone, and passed around a classic end scraper. Solly laid out and discussed his kit of tools, chose a good-sized stream-tumbled, limestone-coated cobble and then proceeded to whack and blast the thing with moose antler and elk horn into a very remarkable cortex-handled Hill Country "hand axe" which lacked only the weeks of use-smoothing at the distal tip to be complete.

He picked up another similar cobble from which to fashion a super-thin pear-shaped Hill Country biface, billet-flaking it to thinner than I've ever seen, and then...and then...undertook to thin it even further by removing a large thin circular flake from one of its faces.

He prepared us for this display by explaining that he stood a good chance to bust the springy, fragile flint piece squarely in two, if he should not manage to hold it just right and to make contact at the exactly necessary angle to the prepared platform with his explosively swung, delicately controlled billet instrument. Taking a stance, he made a practice swing or two, then drew back and unleashed one of the most magnificently wicked cuts I've ever witnessed...and missed it completely! He set up again, swung, and again missed. This went on for some time, until the crowd began to get pretty tense. He finally grooved his swing to catch a fingernail-thin edge of the platform, a tremendous crashing shatter was heard, then he slowly opened his hand to allow the huge, super-thin flake to fall away from its scar. The crowd expelled its breath and grinned at each other, in a sort of "I told you so" exultation.

He whipped out a couple more things, using all his tool-assortment, pressure-flaking with an offhand, rapid abandon that took your breath, blasting and banging and snorting, riding the wave...and then just quit, stood up and ducked his head and grinned and said, "Thank you".

Impressive? I was impressed...but then, I get up-tight watching a good glass blower, or a fine sheet-metal man, or a really great plumber...that sort, who must combine experience and imagination (and, what, Ms. Chadderdon? Communion with the medium?) to whip out their own incredible works of art.

Solly impressed me with his purse-mouthed, ten-second studies of his hand-held cores. What went on in his mind, in that brief moment, before platforming and striking? He explained a bit of it...holes and hollows are there, they'll influence your flake to shallow-out and speed up and maybe take off on unexpected routes...humps and bumps will entrap your flake's course in thickness, slow its speed and tend to turn it one way or the other, into "hinge-flake" or busted artifact. And there are many other vital considerations, for that one single flake.

"Platforming" was accomplished in a snappy, 3-4 second grinding of the core's edge with a hard grainy quartzite...no doubt the angle was determined by the size and shape of the flake he proposed to extract, divided by the obstacles (humps and hollows) he'd discovered upon that particular face of the core, multiplied by the tool chosen for the job and the required power or delicacy of the swing.

The "swings" varied from tremendous explosive licks with great "follow-through" to gentle taps which trimmed and finished sharp edges and shapes, often involving the use of the same tool! The racket he made startled me...clubbing swings produced the sound of a shattered pane of glass, with sherds sailing off everywhere and making even more noise. Pressure-flaking with deer-tine or copper tool produced a combination of sounds, all in a series of rapid "place-tine-to-platform, press-in, and twist", repeated over and over, often with the work-area hidden from view and operating strictly on instinct! Pretty fantastic work. Supreme technology...11-12 years of studying, learning, doing, feeling, dreaming...laid right out on the line.

But something about all this puzzles me, causes me concern (aside from the fact that I've seen it done and still can't comprehend but just a fraction of the causes and effects of Solly's weird business). Solly began it all as a highly respected, busy amateur archeologist, providing us over the years with excellent thought-provoking reports of various sites and situations. As he grew more intimate with the mysteries of rock-knocking, his reports tended to combine more of his older love for archeology with his new infatuation for the fractured flints, and I felt that he'd begun to verge upon a plateau of serious "greatness", a level of usefulness to archeology which might easily occupy his lifetime.

He had begun to crawl into the very minds of those old folks whose tools and artifacts he was replicating...fooling around with the everyday objects of their everyday lives, integrating "cause and effect" with "why, how, when?", he gradually attained an "insight" which, to me, became the rarest achievement of his career. (For a little simple, clean fun, read his "Beveled Knife" paper which appeared a couple of years ago in a Plains Anthropologist.)

But lately I've had the feeling that Solly's committed himself entirely to the rocks, plunging up into the puzzling atmosphere of "ring-cracks", "Hertzian Cones", "planar conversion of cones", a whole new world. Believing that he's discovered important deficiencies within the present published works of the grand masters of flaking, flaws and incompletions which must be resolved and explained,

he feels that it is up to him to undertake this corrective work, given a little time and attention. And, you know, it just might be precisely in this area that Solly'll achieve his best fame.

I'd think the tight little world of the few great rock-knockers might easily be able to include Solly...he's put in his apprenticeship, read everybody, learned the complicated spooky language and is ready to roll. (He'll admit, "We all read each other and quote each other fluently, but sometimes I wonder if we all understand each other?" I'll admit, "That's nothing, I don't understand any of of you, but you sure make impressive sounds!" But then, I never was well-known for being smart...)

So what worries me? For one thing, how long will it take all this vast knowledge of flakes and chips to become refined into my language (simple South Texas) and to filter on down to me? I take a notion to go out and scabble among some Old Fellow's trash and waste (recall that ankle-deep flake junk all around Solly's feet, at the end?), I'd surely like to be able to come up with some educated guess at what the Old Fellow was doing, besides just "flaking flint".

A recent exchange of mail with Solly, dealing with some of the above thoughts, stirred him to exclaim, "...brought on several days of questioning myself, my goals, and what do I really have to offer and to whom?" He said a lot more, some things about possibly being considered more of a "side show" than anything else... then he went on and said several pages of delightful "South Texas" words regarding flaking and archeology and insight, which would have furnished much more interesting reading than we've been tediously involved in here.

Ol' Solly, I'd just like to say this: J.B. Sollberger is a very limited quantity of about one in a couple of million, one of the rare ones who see the visions and work their lives away to render them into solid form. So you tend to your own business as very best you're able to define it...you're the one who's out there sweating and straining, day in and day out, and so you'll have to decide where you're most needed. But every so often, when things go stale and you need a rest or a change of scenery, why not jot down some of your impressions concerning lithic junk and trash in an archeological site, and share it with us...in pure South Texas jargon, that is...because we have a lot of blank pages here just waiting on you.

T. C. Hill, Jr.

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THE NEXT ISSUE OF LA TIERRA

The editor has been receiving a number of papers from STAA members and the first issue of La Tierra in 1975 will include contributions by L.W. Patterson (writing about a quarry site in Medina County) and Mary F. Chadderdon (documenting a major collection in San Antonio). There's still room for your news and reports. Write the editor.

STAA TO MEET IN CORPUS CHRISTI, DECEMBER 7

The final quarterly meeting of the STAA will be held on Saturday, December 7, in Corpus Christi. The meeting is being held in Corpus Christi at the invitation of the Coastal Bend Archeological Society. The CBAS is handling local arrangements. Final arrangements have yet not been completed but members will receive a special notice about the meeting in the mail in late November. Please mark your calendars and plan to attend.

Guest lecturer for the December 7 program will be Dr. Thomas N. Campbell of the University of Texas at Austin. Dr. Campbell is a leading expert on the Indians and archaeology of the Texas coast. The topic of his lecture will be: "THE AMERICAN INDIAN IN SOUTHERN TEXAS, 1527-1850". He will discuss the available evidence, as gleaned from historical records, on the aboriginal peoples in south Texas (the interior and the coast). Dr. Campbell will present new ideas and thoughts about the region's native populations as drawn from his recent research in this field. It promises to be a highly interesting and very important lecture.

As in past programs, several other short papers dealing with south Texas archaeology will be presented. In addition, various publications will be on sale, and space will be provided for exhibits.

On Sunday, December 8, a field trip will be held, weather permitting. Present plans are for site survey work in McMullen County, near Tilden. This will permit those members from San Antonio to be "half way home" after the day's field work is done.

Members wishing to present papers at the meeting, or wanting information on the field trip, available camper facilities, etc., should contact: MR. DAVID ESPY, 1218 VERNON, CORPUS CHRISTI (phone 512-883-9197).

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BURIALS FOUND AT CORPUS CHRISTI SITE

Human skeletal remains were recently discovered during excavation for a sewer trench at the Suntide Refinery in Corpus Christi. The find was initially investigated by personnel from the Corpus Christi Museum. Later work at the site was carried out by members of the Coastal Bend Archeological Society, including Jim Warren, Dave Espy, Rex Wayland, Sam Fitzpatrick, Floy Lee Hoelscher and Rose Lee Hoelscher (all are also members of the STAA). Their activities at the site led to the preparation of a site survey form (the designation 41 NU 60 was assigned), a profile was drawn of the trench wall, and the site was accurately plotted on an aerial photograph and a USGS topographic sheet. The prehistoric materials, which include one or two burials, pits, and a hearth, lie at a depth of 1.3 meters and are covered with at least two layers of modern fill.

The owner of the property has been very cooperative and forbidden digging by unauthorized people. The Coastal Bend society plans further systematic work at the site.

ACTIVITIES OF STAA MEMBERS

The program for the October meeting of the Coastal Bend Archeological Society (Corpus Christi) was presented by STAA member Harvey P. Smith, Jr. of San Antonio. Mr. Smith discussed his extensive field experience in the Trans Pecos area.

C. D. Orchard and Col. T. C. Kelly have continued their archaeological survey work in the Plum Creek area of Gonzales and Caldwell Counties. A number of new sites have been recorded and site survey reports have been prepared.

Ralph Robinson of Austin has been obtaining stratigraphic information on two Travis County sites. Both sites are Archaic in age, and appear to result from Middle to Early Archaic occupations.

The Center for Archaeological Research at The University of Texas at San Antonio has carried out a number of recent archaeological surveys for the Soil Conservation Service, according to the Center's director, Dr. Thomas R. Hester. Surveys have been done or are underway in Starr County (under the field direction of Dr. Parker Nunley), Austin County, Calhoun County, and projects currently underway in northern Bexar County, Comal County, Kleberg County, Jim Wells County, and Karnes County. Graduate students at UTSA have been employed by the Center and these include Feris Bass, M. F. Chadderdon, Ned Harris, and T. C. Kelly (all are members of the STAA). Anne Fox (Witte Museum) has also assisted in the survey work.

STAA members have also been engaged in other kinds of archaeological activity. Dr. R. E. W. Adams attended the 41st International Congress of Americanists meeting in Mexico City in early September, and during the week of October 14-18, Dr. Adams co-chaired a conference entitled "Origins of Maya Civilization", held in Santa Fe. Dr. Thomas R. Hester presented a paper at the 41st International Congress of Americanists meeting in Mexico City. During the week of October 6-13, Dr. Hester visited a number of Maya sites in Yucatan and Chiapas, Mexico.

Harvey Kohnitz (San Antonio) carried out a "motorboat survey" in early October. He plotted and photographed 59 archaeological sites along the Rio Grande south of Langtry.

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JOURNAL OF SOUTH TEXAS

The first issue of the Journal of South Texas, published by the South Texas Historical Society, is now available for purchase. In addition to articles on South Texas history, this issue contains a paper on metal projectile points from the region (by J. L. Mitchell) and "A Bibliographic Guide to the Archaeology of Southern Texas" (by T. R. Hester). Order your copy now by sending \$5.00 to: Richard Moore, Box 288, Del Mar College, Corpus Christi, Texas.

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ASPHALT HAFTED TOOLS FROM BEE COUNTY, TEXAS

Harry J. Shafer and Roy Hanus

ABSTRACT

This paper reports the occurrence of two biface tools which bear traces of asphaltum on the stems. Both specimens were recovered from surface scatter sites yielding predominately arrow points and dating in the Late Prehistoric Period of the South Texas chronology.

INTRODUCTION

The artifacts described in this paper were recovered by the junior author while examining surface scatter localities along drainages of the Aransas River in Bee County, Texas. A small collection of chipped stone artifacts and plain bone-tempered pottery was made; these collections were brought to the senior author for examination. It was at this time that the first example of asphaltum on the stem of a projectile point was noted. Further examination of the localities by the junior author yielded one additional specimen. These specimens are described below.

Description of the Specimens

The first specimen (Fig. 1,A) is an expanding stem "dart point" of gray translucent chert. The specimen was fashioned mainly by pressure flaking. The stem has been formed by corner-notching a subtriangular preform. It is snapped near the distal tip. Lateral edges are sinuous to nearly serrated due to pressure flaking presumably by a sharp-pointed flaking implement. These edges do not show obvious wear although the specimen was not examined under the microscope. Traces of asphaltum adhere to both sides of the stem. It is assumed that this substance served as a glue for hafting.

The second specimen (Fig. 1,B) is a side-notched dart point (of a tan opaque chert) resembling the Ensor type of central Texas (Suhm and Jelks 1962:189). The base is slightly convex and the lateral edges of the blade are approximately straight. Examination of the edges under a binocular microscope revealed extensive lateral smoothing, minute crushing and edge-polish; smoothing is especially pronounced toward the distal end. Traces of asphaltum adhere to both sides of the stem. Here again, the use of asphaltum is presumably for securing a haft.

Discussion

None of the arrow points found in the sites where the two asphalt-hafted "dart points" were recovered revealed traces of asphalt. Three arrow point forms predominated; a side-notched variety similar to Scallorn, but with deeply serrated lateral edges, a triangular form also having deeply serrated lateral edges, and a stemmed form identified as Perdiz. Plain, bone-tempered pottery occurred in one of the sites. An assortment of uniface, biface and flake artifacts were also found in each site.

The main point of interest is the occurrence of expanding stem and notched "dart points" hafted with the aid of asphaltum and occurring in apparent context with

Late Prehistoric period artifacts (see Hester, 1971 for a discussion of south Texas chronology). Evidence of the use of asphaltum as a hafting aid comes from sites in nearby Victoria County. At site 41VT29, W. W. Birmingham, Jr. has collected Morhiss and Marcos dart points with traces of asphaltum adhering to the stems (T.R. Hester, personal communication; see also Birmingham 1968). Asphaltum hafted dart points are not uncommon in southeast Texas (Shafer 1968: 52-58), but these forms are either contracting or parallel stem varieties and were probably hafted by socketing into hollow cane shafts. By contrast, the Bee County examples are corner or side-notched and required different hafting procedures. The southeast Texas examples occur in Late Archaic and Early Ceramic periods and are not associated with arrow points.

The presence of dart points and arrow points on the same surface may be due to several factors: 1) the deposits were once separate, but became mixed by natural erosional and depositional processes; 2) the deposits were once separate, but became mixed through either prehistoric or modern cultural activities; 3) the materials were deposited at different times on the same surface; 4) the dart points were picked up and recycled either as tools or for use as raw material by later inhabitants; 5) the artifacts were made and used by the same peoples. The first three cases probably explain most examples of mixing for much of southern Texas where deflated surfaces, old stable terraces, sheet wash and plowing are common. The fourth factor may explain the seeming contemporaneity of dart points and arrow points in situations where the collections contain mostly arrow points, especially in coastal zones where natural lithic resources are either scarce or absent. The fifth factor seems to be the least likely since it would imply a dual weaponry system. Employment of dual weaponry systems are known in ethnographic accounts of Indians in the southeastern United States (Swanton 1946: 571-587) where the bow and arrow and blowgun were used. To our knowledge, there are no published accounts of pre-contact Indians in the south Texas area or adjacent regions using both the bow and arrow and the atlatl and spear.

The authors are cautiously suggesting that the asphalt hafted specimens from Bee County were used by Late Prehistoric period groups for cutting tools such as knives or saws and not as dart points. The wear on one of the side-notched specimen indicates use in a back and forth cutting motion. We further suggest the artifacts were probably made to be used as dart points by Late Archaic peoples and were picked up and recycled by Late Prehistoric populations. This interpretation is based on the nearly exclusive occurrence of arrow points in the two sites.

The occurrence of asphalt-hafted stemmed bifaces in a context which suggests their use as something other than dart points stands as an example of the importance of viewing the archeological context in which specimens occur and conducting functional studies of artifacts. Functional patterns can usually be inferred on the basis of several things in addition to context; among them are form, ethnographic analogy, and sometimes, experimentation. There are, of course, a number of variables which must be considered regarding any one of these lines of investigation. Take the archeological context, for example: important variables include the associations and frequencies of artifacts in the particular archeological deposit, the pattern(s) of occurrence of the artifacts, and the physical condition of the deposit which may either preserve or destroy the cultural patterning and which may result in fortuitous clustering.

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Figure 1. "Dart points" with traces of asphaltum on the stems. Asphaltum is indicated by black spots.

USE-WEAR ANALYSIS OF "CLEAR FORK" TOOLS FROM
THE FALCON RESERVOIR AREA, SOUTHERN TEXAS

C. K. Chandler

In this paper, the results of a study of 22 specimens of "Clear Fork" tools from sites along the Rio Grande near Falcon Dam are presented. These artifacts were collected by Roy W. Hickman, now of Houston, Texas from several surface sites along both sides of the Rio Grande during the building of Falcon Dam. They were found in association with numerous bifaces, dart points and some arrow points, but no pottery. The entire collection could not be examined because all of the projectile points had been dispersed among several different individuals; however, all of the non-projectile point bifaces were examined. Of 204 total bifaces examined, 121 are typically of various sizes and shapes without beveled edges. Of the remainder, 12 are triangular averaging about 2.5 cm. in length with one edge beveled and slightly scooped out. These have the appearance of "Olmos Bifaces" described by Shafer and Hester (1971). Twenty-seven are triangular with pointed ends and one steeply beveled edge. These appear to be broken projectile points with the broken edge beveled for possible use as scrapers. Eighteen are sub-triangular with convex edges and one steeply beveled edge. Four are rectangular with one or more steeply beveled edges. This description of associated tools is given simply to establish that the "Clear Fork" tools were found in association with a wide variety of bifaces, many of which appear to be designed to function as scraping or gouging tools.

The presence of large areas of cortex on the ventral surfaces of all the "Clear Fork" specimens led to questions concerning the uniqueness of this trait. Research of available literature and personal communication with several knowledgeable persons throughout Texas reveals that, while these "Clear Fork" tools have wide spatial distribution throughout Texas, northeastern Mexico, and even into southwestern Oklahoma, when cortex occurs on these tools from other areas, it is usually found on the dorsal rather than the ventral surface.

The amount of cortex on the ventral faces of these 22 specimens varies from 40% to 100%, with the average 85% (Table I).

The presence of 100% cortex on the ventral surface of gouge-like tools is reported by Story for certain artifacts from Cedar Creek Reservoir (1965:208), and these artifacts are given the name "Gossett" gouges. They are generally smaller than the "Clear Fork" tools and are made from small stream-worn pebbles with "flaking confined to one surface." They do not resemble the "Clear Fork" tools reported here.

It is my impression that cortex coverage on the ventral faces of "Clear Fork" tools is one of the most frequent attributes of this tool form in the Falcon area, and is a trait restricted to that particular area.

While my initial intention in reporting on these artifacts was simply to establish the uniqueness of the cortex areas on the ventral surface, in an effort to understand their function and improve on my own ignorance, I further undertook a study of the wear patterns on the edges and surfaces of these tools.

In addition to macroscopic examination, I examined the surfaces and all edges of each specimen microscopically, using a 36X Bausch and Lomb binocular microscope. To insure consistent recording procedures, each specimen was laid on a flat surface with the bit or working edge directed away from me and with the flaked surface upward. With this orientation, use wear or other modification was recorded for the bit, left and right lateral edges, proximal end, and both cortex and flaked surfaces.

The specialty of lithic analysis has produced its own jargon, which is not always understood by the reader, and inevitably, the jargon of most authors requires some explanation for more complete understanding. Following are explanations of some important terms used in this paper which require full understanding.

Ventral, as used in this paper, refers to the plano side of the artifact, which in all cases, is the cortex lower surface of the artifact when in presumed functionally operating position. I recognize that exceptions will be taken to this usage, but it is my position that the dorsal surface of a flake from which an artifact is made does not necessarily remain the dorsal surface of the completed functional artifact.

A medium cobble as used herein is 128 to 256 mm. in maximum dimension.

Smoothing indicates the dulling of an edge or surface to the extent all protrusions are rounded off (blunted), and where this smoothing is extensive, edge protrusions are removed and adjacent flake scars are obliterated.

Nibbling has been defined by others (cf. Hester, Gilbow and Albee 1973) as tiny, usually uniform-sized flake scars occurring along an edge.

Morphological Characteristics

Nineteen (86%) of the specimens are triangular or sub-triangular in outline and most, but not all, have a steeply beveled working edge or bit. Two are sub-rectangular and one is ovoid (Table I).

All except one appear to be made on primary decortication flakes. One, of a very fine-grained granite, is so heavily coated with patina that the original cortex surface is difficult to identify with certainty, and this specimen appears to be made of tabular material rather than a flake struck from a stream cobble. The striking platform is present on only one specimen, and this is on the proximal end. The morphology of most specimens indicate they are made on flakes struck from medium-sized cobbles with the striking platform the end of the cobble. Fourteen examples are unifacial, and eight are bifacial. On the bifacial specimens, the flaking on the cortex face is never on the bit edge. Most specimens are basically plano-convex in cross section. Some have a tendency toward being biconvex in cross section, but this is due primarily to the slight natural curbing of the cortex ventral surface.

The bits of eight are straight, ten are slightly concave, one is markedly concave, and three are slightly convex.

An edge must conform to the job it is expected to do, and whether or not a given edge is suitable to a specific task is pertinent to presumption of function. The unaltered cortex edges, in particular along the bit, present a more uniform and straighter edge than bifacial alteration would produce, and the cortex ventral surface would reduce the friction when the artifact is used as a "planer-gouge" or as an adze, and would also produce a smoother finished product.

It may be that these unifacial cortex edges represent a specialized lithic tool technology and a higher degree of technological understanding than does the bifacial variety of the "Clear Fork" tools.

The artifacts are made from a variety of raw materials (Table I). Eight (36%) are of quartzitic siltstone (Jack Klatt, personal communication), six (27%) are of quartzite, five (22%) are of a very fine-grained granite, two (9%) are of phyllite (banded metamorphous slate with mica), and only one is of flint.

Artifact dimensions are, length 41 to 85 mm. (avg. 58), width 34 to 49 mm. (avg. 40), thickness 10 to 26 mm. (avg. 14). Bit contour varied from +1 mm. to -5 mm.

Use Wear Evidence

Evidence of use wear was derived by both macroscopic and microscopic examination (Table II). Seven (32%) of the specimens have macroscopically visible smoothing and polish of the flaked face with the arrises between flake scars nearly obliterated. Five of these are of quartzitic siltstone and two are quartzite. Under microscopic examination, one other quartzite specimen exhibited similar smoothing and polish. Four of these with macroscopically visible smoothing and polish have resharpened bits without smoothing of the bit face. Two other specimens have resharpened bits and these two have no evidence of smoothing on any of the flaked surfaces.

On seven specimens (32%), the left edge and left bit corner have been resharpened. Several step flakes have been removed at the bit corner with these flake scars extending along the left lateral edge, decreasing in size toward the proximal end. This has produced a slightly more abrupt bevel along the left edge, and on four of these, the bit corner is rounded off. This modification is visible on macroscopic examination and appears due to rejuvenation rather than use wear.

The most commonly observed wear was smoothing and polish of the bit and both right and left lateral edges. This wear occurred on thirteen (62%) of the specimens and was much more pronounced along the left lateral edge. Eight of these (36%) have striations on the bit edge parallel to the long axis with two showing very pronounced striations.

All of these striations extend around the bit edge toward the ventral side, and in some cases, onto the ventral cortex surface without similar evidence on the edge toward the flaked face.

The location and direction of striations on the bit edge indicates these artifacts were used either in a forward pushing motion or in a downward arc, such as would be common with a hafted adze. The resharpening of this bit edge would also tend to indicate this was the primary functional edge. However, we must not overlook the extensive wear evidence on the lateral edges. Some authors have stated that the heavy dulling and wear on the lateral edges and proximal ends of "Clear Fork" tools is probably due to modes of hafting rather than use wear. While I agree that some of this dulling may be due to hafting techniques, I do not agree that most or all of this wear can be accounted for in this manner. On this sample, where heavy lateral edge dulling occurs, it extends the full length of the edge and onto the bit corners.

Nibbling occurred on 64% of the bit edges, on 34% of the left lateral edges, and on 27% of the right lateral edges. In most cases, this nibbling on the lateral edges was all but obliterated by the heavy edge dulling.

Seventeen (73%) have extensive smoothing of the cortex ventral surface, with varying areas of polish on seven of these. In an effort to determine if this smoothing and polish of the cortex areas was the result of use wear or was a natural occurrence, I microscopically examined the smoothed and polished surfaces of several selected artifacts known to have been shaped by grinding. These included manos, celts, grooved axes, and stone figurines. The polished surface of many of these, but not all, were nearly identical to the polished cortex ventral surfaces of the "Clear Fork" tools. Striations on the polished surfaces were rare.

While it is impossible to determine whether this polish is due to use or from stream abrasion, I feel that some of the polish on the sample examined was produced by use wear rather than by stream abrasion of the source material.

Diagonal striations were found on the left lateral edge of two specimens, and three other specimens exhibited smoothing and polish on the proximal end.

Since all of these specimens are surface finds, some have undoubtedly been exposed to weathering processes such as sand blasting. This might account for some of the distinctive smoothing on the flaked faces and edges; however, on the resharpened specimens, the flaked bit faces did not show any of this smoothing and polish.

Summary

Cortex coverage on the ventral surface of "Clear Fork" tools appears to be one of the most frequent attributes of this tool form in the Falcon area and appears to be a trait restricted to that area. The most characteristic use wear indicators are distinctive smoothing of the flaked faces and lateral edges with a high percentage of edge nibbling on the bit and lateral edges.

The location and direction of striations on the bit edges, supported by limited personal experiments, indicate these tools were probably used in a pushing fashion (i.e., planer gouge) on a hard, unyielding surface, probably wood.

The heavy smoothing of the lateral edges, specially along the left edge, indicates extensive usage as a scraper with the edge being held at basically right angles to the material being worked.

Artifact dimensions, shape, and geological identification.
All measurements are in millimeters.

No.	L	W	T	W _b	B _d	M _p	S	G
1	65	49	14	47	0	0	∇	Q
2	57	43	14	42	1	25%	∇	QS
3	54	43	14	41	2	10%	∇	QS
4	62	46	10	35	0	10%	∇	QS
5	53	41	13	40	4	7%	∇	QS
6	64	48	13	38	2	50%	∇	FG
7	49	43	14	41	1	0%	∇	Q
8	68	41	18	34	0	0%	∇	Q
9	64	36	13	30	1	60%	∇	PH
10	50	37	14	37	0	7%	∇	FG
11	50	40	14	40	3	4%	∇	Q
12	50	37	13	37	0	25%	∇	QS
13	54	47	13	41	1	35%	∇	QS
14	57	47	16	46	2	20%	∇	PH
15	52	47	13	45	5	4%	∇	QS
16	60	44	18	40	1	4%	∇	QS
17	55	40	18	39	2	25%	∇	QS
18	66	37	11	37	3	3%	∇	FG
19	63	46	14	44	0	3%	∇	FG
20	66	42	16	38	1	20%	□	QS
21	41	34	13	28	+1	0%	□	FG
22	85	41	26	29	+1	20%	○	F
Range	41-85	34-49	10-26	28-47	+1 -5	0-60		
Average	58	40	15	39	1.2	15		

No. - Specimen
L - Maximum length
W - Maximum width
T - Thickness
W_b - Width of bit end
B_d - Depth of bit concavity
M_p - Per cent of modification cortex side
S - Outline
G - Geology
Q - Quartzite
QS - Quartzitic siltstone
FG - Granite
PH - Phyllite
F - Flint

TABLE I

Specimen number	Dorsal surface smoothing (flaked face)	Ventral surface smoothing and polish (cortex surface)	Resharpener bits w/o smoothing of bit face	Smoothing of bit edge	Striations on bit edge	Smoothing of left edge	Striations on left	Smoothing of right edge	Striations on right	Resharpener left edge and corner	Striations on proximal end	Smoothing and polish of proximal end	Bit Nibbling	Left edge nibbling	Right edge nibbling
1	X ^a	X ^o		X	X	X		X				X	X	X	X
2	X ^a	X	X	X	X ^p	X		X				X			
3	X ^a	X	X			X		X		X			X	X	
4	X ^a			X		X		X		X			X	X	X
5	X ^a	X	X	X		X	/	X							
6		X ^o		X	X ^p	X		X		X					
7	X ^a	X ^o				X		X			X				
8		X			X										
9				X	X	X		X					X		
10		X ^o								X			X	X	
11	X ^a	X ^o	X			X	/	X			X		X		
12		X		X		X		X		X			X		
13		X ^o		X									X		
14		X ^o	X	X		X		X					X		
15	X ^a	X		X	X					X				X	
16		X ^o											X		X
17		Heavy patina	--use	wear	not	discernible									
18		Heavy patina	--use	wear	not	discernible							X	X	X
19		X ^o	X	X	X	X		X		X			X	X	X
20		X ^o		X											
21		X		X		X							X		
22					X							X	X	X	X
8 ^a	17	6	13	8	13	2	12	7	2	3	14	8	6		

a - Smoothing of flake arrises
o - Cortex not polished
p - Prominent
/ - Diagonal

TABLE II

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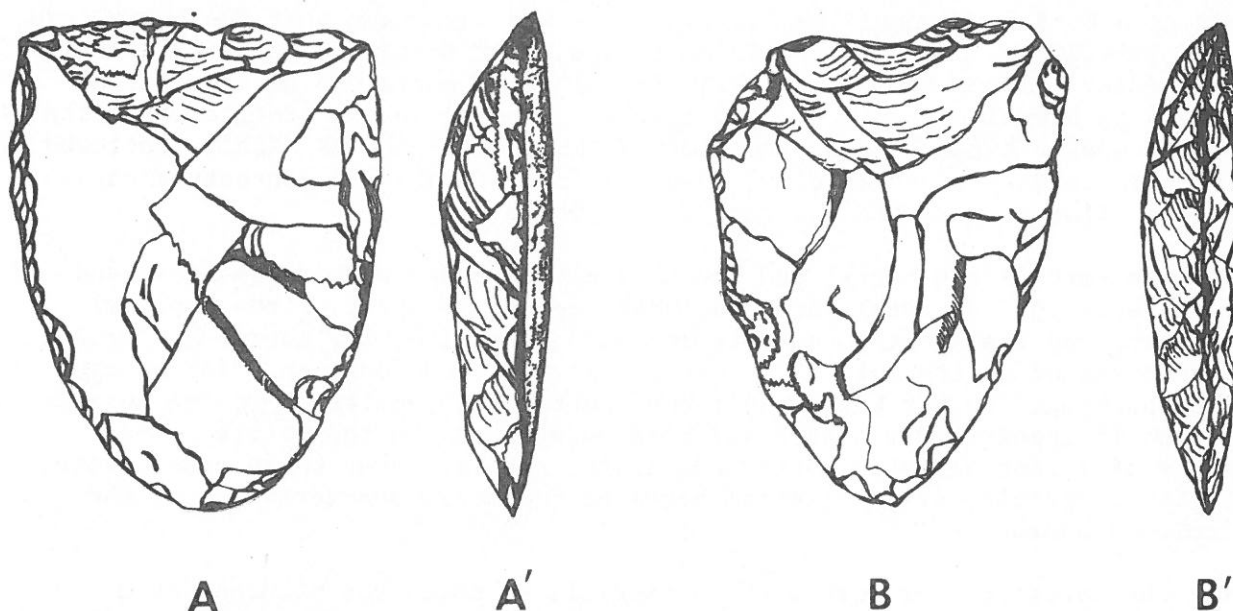


Figure 1. "Clear Fork" tools from Falcon Reservoir. A, A', unifacial specimen; B, B', bifacial specimen with evidence of left lateral edge and corner worn and rejuvenated.

NOTES ON THE MILES SITE, MCMULLEN COUNTY, TEXAS

Thomas R. Hester, Feris A. Bass, Jr. and Thomas C. Kelly

During the construction of the George Miles residence in September, 1974, archaeological materials were discovered and brought to the attention of the senior author. The residence is located on the Miles Ranch, south of Tilden in southern McMullen County, Texas. The McMullen County area is poorly known archaeologically, with published reports dealing with Paleo-Indian artifacts (Hester, 1968), sites along the middle Nueces River (Hester, 1969), and survey work in the eastern part of the county (Wakefield, 1968).

As a part of the construction activities for the Miles home, a pit (for a septic tank) was dug with a backhoe. As the digging of the pit progressed, human skeletal remains were brought up. Subsequently, in situ skeletal parts were noted in the south wall of the pit. Mr. George Miles and Mr. Jack Doyle recognized the possible importance of this find and notified professional archaeologists. On September 27, 1974, the authors visited the site.

Briefly described, the Miles site lies between Elm Creek and the Nueces River, slightly less than a mile south of the confluence of these two streams. At the present time, part of the site area is occupied by the Miles residence and the rest is in a cultivated field.

When we arrived at the site, the septic tank pit had been completely excavated, and articulated skeletal remains could be seen in the south profile. This profile was carefully cleaned and a scale drawing was made. Unfortunately, no traces of a burial pit could be observed. We did ascertain that the burial was located 105-120 cm. below the surface, in the lower portion of a thick alluvial deposit (clay loam of the Trinity-Frio Soils) which contained archaeological materials to a maximum depth of 1.60 meters. Exposed in the profile were bits of mussel shell, bones of deer and rodents (much of which was highly fractured and burned), pieces of baked clay, charcoal (occasionally in concentrations), scattered flint flakes, and a worked flint pebble.

Little was left of the burial and the articulated bones were fragmentary and poorly preserved. Skeletal parts included the pelvis, part of the proximal left femur, and the sacrum. As best we could determine, the burial had probably been placed on its left side, perhaps in a flexed position. Sex or age of the individual is not known. A rodent burrow had penetrated to the burial area, and it appears that a nest had been constructed on the pelvis. The presence of rodent activity would account for the fact that there were several small bones, particularly cunieforn bones of the foot, scattered around the articulated bones.¹

During the course of our work with the burial, we noted the presence of a concentration of burned rock in the west wall of the pit. Upon cleaning the

¹ The Miles family told us that yet another burial (with an associated marine shell ornament) had been previously found during the digging of a ditch to the west of the site. We have subsequently been told of yet a third burial in the site vicinity, but this has not been confirmed.

west wall, we were able to obtain a profile view of a pit, filled with burned rock. The top of the pit was 30 cm. below ground surface, and the bottom, 70 cm. below the surface. The pit was widest at the top (45 cm.), tapering slightly to a width at the bottom of roughly 25 cm. The burned rocks within the pit varied considerably in size, most being between 10-20 cm. in length.

We were unable to explore the horizontal extent of the pit, making its interpretation more difficult. It appears to have been a shallow pit or basin into which a sizable quantity of burned rock had been placed. Other materials scattered through the pit fill were several land snails (Rabdotus sp.), mussel shell fragments, and animal bone fragments. A few bits of charcoal were also noted.

As far as the authors can determine, this is the first recorded example of this type of archaeological feature in a south Texas site. It may have been a "pit-hearth" (a basin used for cooking), or it could have conceivably functioned as an "oven", with heated stones placed in the pit for the baking of foodstuffs. Shafer (1971:113 ff.) reports considerably larger stone-filled pits from the Walker No. 2 site in west-central Texas.

We have briefly recorded here some observations on two cultural features, a disturbed burial and a stone-filled pit, found at the Miles site in McMullen County. What is certainly more significant is the fact that within the site area there are buried deposits 1.5 meters or more in thickness. If the Miles site is any indication, archaeologists may expect to find deep and potentially informative sites along this part of the Nueces River drainage. Although we have no indication as to the age of the Miles site, or the features we recorded at the site, artifacts collected by the Miles family from nearby sites on the ranch are predominately Archaic in age although there is some evidence of Late Paleo-Indian and Late Prehistoric occupations.

Notes, color slides, black and white photographs, and other documentation related to the investigations at the Miles site are on file at the Center for Archaeological Research, The University of Texas at San Antonio.

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PLANNING SITE SURVEYS

C. D. Orchard

There are more and ever increasing demands for archaeological surveys. Every new highway, dam, and area development must be preceded by a thorough survey if valuable and irreplaceable archaeological knowledge is not to be lost forever. Then too, there are all those wide blank spaces in south Texas that must yet be filled.

The problem is compounded if you must also conduct your survey outside your immediate bailiwick. The following procedures have been found helpful in a recent survey by the author and T. C. Kelly of Plum Creek in Caldwell and Gonzales Counties:

1. MAPS - The primary tool of planning.

Highway Map - Locate county seats, boundaries, streams and rivers.

U.S.G.S. Map - Contains great detail, 10' contour interval, 1:24000 scale. Your local cartographer will have them but they are much cheaper if ordered from: U.S. Geological Survey, Map Distribution Center, Denver, Colorado 80225.

Aerial Photos - The county soil survey is a gold mine of information plus photos. If your local Soil Conservation Service doesn't have them, write: Supt. of Documents, U.S. Govt. Printing Office, Washington D.C. 20402.

2. CORRESPONDENCE - The step saver.

County Clerk - He can supply you with names and addresses of:

County Commissioner - Usually a knowledgeable official knowing everyone in small counties.

Newspaper Editor - A repository of all kinds of knowledge. Your survey will be of local interest and a well written article stating your objectives and address will bring a surprising response from interested persons. It will also make access to properties much easier.

Local Historical Society - Someone in the area will be a history or archaeology buff and will volunteer guide time, information, and more contacts.

Send standard complete form letters to all individuals you locate from these efforts for permission to survey. Do not forget to make it easy for them by providing stamped, return envelopes.

3. PREVIOUS SURVEYS - The Texas Archeological Research Laboratory (Balcones Research Center) at Austin can give you information and possible contacts unless the area is a complete blank. Copies of your survey records should be filed there.

4. GET WITH IT - You can enter your area with planning such as this and be pleasantly surprised at how many friendly and helpful people are expecting you. Information that you never expected will be dumped in your lap. Your survey will be much easier and successful than any unplanned entry can possibly be.

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