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About the Cover: In 1906, when Edward S. Curtis was actively photographing the Apache, some of them were still harvesting **Agave** in traditional fashion, and in 1907 Curtis published an entire series of photos documenting the harvesting and pit baking process, a method essentially identical to that used by native populations of Nuevo Leon in 1649-50, as recorded by Alonso de León. The pencil sketch is an adaptation of one of the Curtis photos. It shows an Apache woman using an expedient hammerstone (a rock collected nearby) to hammer a mescal chisel (a type of pounded, chisel-pointed digging stick) into the root-stock of a plant. Note the tall inflorescence, which indicates the plant is almost ready to pollinate, suggesting the photo was taken in the springtime.

Ken Brown

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EDITORIAL

La Tierra is now 14 years old and has become an extremely important publication in representing the diverse interests of its members. The Southern Texas Archaeological Association is composed of professional as well as avocational people bent on learning about and preserving the historic and prehistoric cultures that occupied this vast area, the state of Texas. Our writers, illustrators, and workers in all fields unite with one goal in mind -- Get all the information available and present it to the members through the written word.

There are many projects presently being worked on and still more that have been completed. Please consider sharing your efforts through **La Tierra**. In the interest of our readers we need short articles as well as the longer reports of your projects. Artifact documentation is important, especially when it seems out-of-place, and we all want to know about it.

Guidelines have been presented in the first quarterly issue of each volume to help the writer compose the manuscript for publication. Let's continue to make our journal the leader in the field of archaeological publications for southern Texas. Send your original papers to the editor at your earliest convenience. Reports are needed for the last two issues of 1988, Volume 15, Numbers 3 and 4.

Evelyn Lewis
Editor

NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1988-2

Studies of an Obsidian Clovis Point from the Central Texas Coast, and Other Paleo-Indian Obsidian Artifacts from Texas

Thomas R. Hester

In my NOTES 86-2, published in **La Tierra**, Vol. 13, No. 2, I reported the results of trace element studies done for an obsidian artifact of Late Prehistoric date from site 41 LK 51. Nuclear chemistry, using the technique known as x-ray fluorescence (XRF) by colleagues at the Lawrence Berkeley Laboratory had provided a chemical characterization that linked that piece with a geologic source near Malad, southeastern Idaho. A number of Late Prehistoric specimens in Texas were also linked to that distant source.

Most of the obsidian specimens studied from Texas over the past 17 years are derived from Late Prehistoric and Late Archaic contexts. At the other end of the time spectrum another group of specimens have been documented from Paleo-Indian sites. These include an obsidian point base associated with Late Pleistocene fauna at Kincaid Rockshelter in Uvalde County, and tied to a geologic source in Querétero, Mexico (Hester et al. 1985). Other obsidian artifacts of Paleo-Indian age have been found at both Lubbock Lake and Blackwater Draw (New Mexico) on the Southern Plains. The Lubbock Lake artifact (a projectile point of undefined type, dated to ca. 10,000 B.P.) and a Clovis point from Blackwater Draw are linked by XRF to the Valles Caldera source in northern New Mexico (Johnson et al. 1985:51-52). While there has been success in geologic source identification of these three specimens, four other obsidian artifacts of this vintage from Texas, New Mexico and Louisiana remain unknown as to source. These include a spurred scraper from Louisiana, an obsidian biface from Blackwater Draw (see Johnson et al. 1985:51-52), and two lanceolate points from surface contexts in Val Verde County, Texas (Carroll 1978).

We can now add to the sample of Paleo-Indian obsidian artifacts, and at the same time add to the problem of geologic source identification, an obsidian Clovis point found on the central Texas coast. At the July 1987 meeting of the Southern Texas Archaeological Association held in Victoria, E. H. Schmiedlin called to my attention this unique artifact, in a surface collection from site 41 CL 72 near Port Lavaca. The artifact had been collected by Nic Harrison of Port Lavaca, from a strip of beach along the edge of Lavaca Bay. The specimen is heavily weathered and abraded from "beach-rolling" processes. It is 47 mm long, 23 mm wide, and 6 mm thick. Weight is 9.1 gm. The point (Figure 1, a,a') is fluted on both faces, the flutes being 23 mm on one side (a single flute; Figure 1, a') and 22-30 mm on the other (two adjacent narrow flutes; Figure 1, a). The material is a smokey, clear gray obsidian. Mr. Harrison very kindly loaned the specimen to me and it was sent for non-destructive XRF analysis by Drs. Frank Asaro and Fred Stross, and Helen Michel, at the Lawrence Berkeley Laboratory. The XRF trace element data proved inconclusive as to geologic source. Fred Stross (personal cummunication) informs me that there were some similarities to a source area in Washoe County, Nevada, but that he and his fellow researchers do not feel that the data are sufficient to attribute the artifact material to that specific source. They also compared the trace element characterization from the Port Lavaca Clovis point to the other Texas-Louisiana-New Mexico obsidian artifacts of unknown geologic origin and found no similarities with any specimens in the group.

Fluted points are certainly not very common along the Texas coast (cf. Hester 1980), though some have indeed been documented. Complicating the picture is the fact that the late Pleistocene shores were 50-140 miles east of the modern coastline (LeBlanc and Hodgson 1959). Of particular interest is the McFaddin Beach locality further up the Texas coast in Jefferson County. Beach

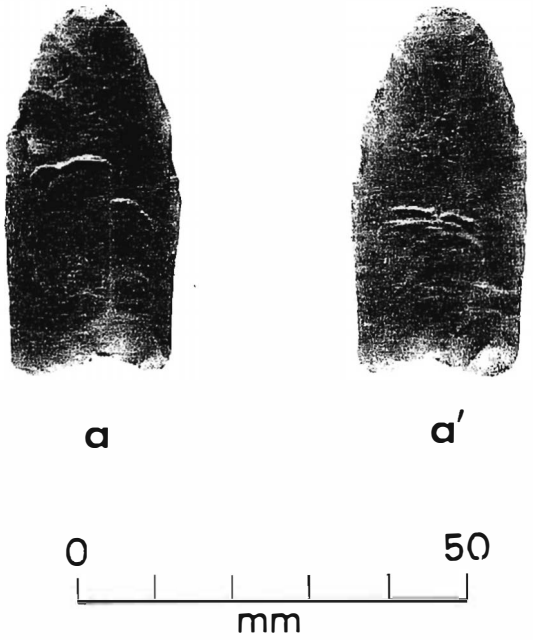

Figure 1. Obsidian Clovis point found on the beach along edge of Lavaca Bay, Texas.

erosion has exposed Pleistocene fauna, along with a number of Clovis points (none made, however, of obsidian). There are also later Paleo-Indian types, including San Patrice, Plainview and Scottsbluff at McFaddin Beach (Long 1977, 1986).

The possibility of finding additional obsidian Paleo-Indian artifacts along the Texas coast are, I would think, extremely remote. And, in the case of the Port Lavaca Clovis point, it may be some years before the link between artifact and geologic source can be made. It was more than a decade before specimens of a chemical characterization, that we know is now the Malad source, could be conclusively linked to that specific locality.

But the story of obsidian on the coast does not end here. While this paper is being written, the Berkeley group is analyzing a tiny obsidian flake excavated by Bob Ricklis at site 41 NU 221 in Nueces County, found in a level with a Bell point and three unstemmed points, and with radiocarbon assays indicating an age of greater than 5000 B.P. (Ricklis ms.).

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SOME ANNOTATED EXCERPTS FROM ALONSO DE LEÓN'S HISTORY OF NUEVO LEON

Kenneth M. Brown

ABSTRACT

Alonso de León's history of the conquest of Nuevo León, dated 1649, became available to scholars when published in a collection of original documents in 1905 by García; in 1924 Davenport published an English translation of excerpts as an extended footnote to Oviedo. Ruecking, in a series of articles published in the 1950s, used bits and pieces of the De León history patched together to reconstruct an **ex post facto** Coahuiltecan ethnography. Most recent scholars have relied for the most part on Davenport or Ruecking. A more recent translation by Duaine (1971) of De León's entire history, along with that of Chapa and Sánchez de Zamora seems to have been overlooked by most scholars.

Presented here is a suggested translation of parts of two of De León's chapters. The first, concerning subsistence, differs little from Davenport or Duaine although we can now add some comments in the light of current knowledge of the archaeology of the Lower Pecos region of Texas, an area somewhat removed geographically, but probably quite relevant from the standpoint of aboriginal economies. The second, on warfare, appears in Duaine but not in Davenport and is of interest chiefly for its detailed description of arrow construction.

INTRODUCTION

Alonso de León (1637-1691) is perhaps most familiar to students of Texas history as the leader of a series of expeditions, the most notable of which was his search for Fort Saint Louis, in present-day Victoria County, in 1689. However, his father, Alonso de León the elder, was a notable figure in his own right in the conquest and settlement of northern Mexico. The elder De León, a native of Mexico City, left New Spain in 1635 and was one of the first settlers of the village of (San Juan Bautista de) Cadereyta, founded in 1637 in central Nuevo Leon, serving as Procurador General (attorney general), Alcalde Ordinario (magistrate), and Teniente de Justicia Mayor (or deputy Alcalde Mayor; Cavazos Garza 1964:135; see Barnes, Naylor, and Polzer 1981 for definitions of administrative terms; see Jones 1979 and Cavazos Garza 1976:832-840 for a history of the region). He also served as a captain in the frontier militia, helping subjugate the Indians of Nuevo Leon, during which time he had the opportunity to observe them at first hand, and was cited in 1655 for 14 years of continuous military service (Cavazos Garza 1964:136). It is the elder Alonso de León who, in 1649 or 1650, left us the history entitled **Relación y Discursos del Descubrimiento, Población y Pacificación de este Nuevo Reino de León.** The published version is dated 1649, although near the end of the work an Indian attack in March 1650 is recounted, suggesting the manuscript may not have been finished until that date. De León later died in the Valle del Pilón, in 1661 (Roel 1944:39).

Alonso de León's history was published in 1905 by Genaro García in a series of original source documents and later reprinted in 1975. This translation is from the 1975 reprint. Davenport (1924:292-295) provided a fair English translation of Chapters 6-8 as an extended footnote to his translation of Oviedo, and though I cannot improve much on Davenport's version, I can comment on some specific points in the light of current ethnographic and archaeological knowledge. I also offer a translation of part of Chapter 15, the bulk of which is an interesting and detailed description of the methods of construction of arrows. A number of others, of course, have also translated De

León. Ruecking, in a series of articles published in the 1950s (see particularly Ruecking 1953), extracted bits and pieces of the De León narrative to compile an **ex post facto** generalized Coahuiltecan ethnography, and others have either done the same thing or, like Newcomb (1961) relied to a significant extent on Ruecking. We will comment on both Davenport's and Ruecking's translations of specific points. Taylor (1972) has compared the archaeological record at Frightful Cave, Fat Burro Cave, and Nopal Shelter in central Coahuila both to De León's account and to published Spanish records from the Laguna district and has anticipated many of the conclusions repeated here. The difficulty with most of these previous treatments is that none of these scholars provide the complete, unexpurgated text and some of them extract and recombine data from various sources without indicating exactly which item derives from which source, as Nunley (1971:308) has remarked. Duaine (1971) has translated the entire history, as well as the accounts of Chapa and Sánchez de Zamora reprinted by Genaro García. His effort has largely been overlooked by ethnohistorians and archaeologists, perhaps because it is privately published in a limited edition of only 500 copies. His translation agrees fairly well with my version of the two excerpts discussed here, except for a few minor points. However, Duaine's is by no means a literal translation (especially since there are a number of inexplicably erroneous dates given), and those interested in precise detail on specific points would do well to consult the original Spanish.

A few examples will show why this is so. De León writes "**El verano** [summer], **y desde que empieza a brotar el nopal...,**" which Duaine translates "In the spring, as soon as the prickly pear begins to bloom...." De León writes "**sacaran de ella, al tiempo, más de cuatro mil fanegas...**" [there will be removed from it, in time, more than four thousand fanegas] which Duaine translates as "we have taken from time to time more than four thousand bushels...." De León writes "**...igual en el tamaño y grosor en almanacate o huso que tienen los obrajeros cuando hilan**" [equal in size and thickness to a malacate or spindle that workers use when they spin] which Duaine translates as "The size and thickness of the stick depends on the use that the arrow maker has in mind."

We should also note that translation has more of the art than science about it; one must walk a tightrope between translating too literally, which may garble the text, and translating too freely, which may eradicate the flavor of the original or distort its meaning. On occasion the difficulty comes from De León himself, where his phrasing is obscure or where he has too few subjects to account for the number of verbs used. Below will appear the two chapters translated (both were completed before consulting Davenport or Duaine), followed by a general discussion. Specific points in the text are addressed by endnotes in brackets, and the original Spanish is given if the interpretation seems open to dispute. Page numbers in brackets refer to the 1975 García reprint edition.

Although elsewhere De León names various specific Indian groups, such as Alzapas, Cuepanos, Cauripanes, Ayancuaras, Icauras, Guajolotes, and Caujaguas, the initial chapters in the first section do not specify any group, indicating that De León was generalizing about the Indians of the region at large. Campbell (1983:356-357) provides a mind-boggling list of nearly 300 named groups in his Area 6, many of which are presumably represented in De León's composite description (see also Duaine 1971:186). As Campbell observes, "it is clear that some of the groups described by León were those collectively known to Spaniards by such names as Borrados, Pintos, Rayados, and Pelones, and that some of them spoke dialects of a language designated as Quinigua" (Campbell 1983:352). A few of the bands named by De León, such as the Catujanos (or Catujan) and the Pastanquia (or Pastancoya) ranged into Coahuila and appear at the Guerrero missions, as Campbell (1979) has already noted.

The area under consideration -- the Nuevo Reino de León -- corresponded rather closely to the modern state of Nuevo Leon and extended from the Río

Pánuco on the south to the Rio Grande (Bravo) on the north. An early map dating to 1799 (Roel 1944:9) gives some idea of the contemporary boundaries, which were somewhat vague. A slightly earlier map, that of Escandon (dated 1792) is rather ambiguous and shows no boundary with Coahuila (facsimile map to accompany Kilgore 1975). From how much of this area De León drew upon for his acquaintance with the native people is unclear, but it is probably safe to assume he was most familiar with the Indian populations in the vicinity of Cadereyta, Cerralvo, and Monterrey (Figure 1) and therefore most of the descriptive material may be presumed to apply chiefly to this area. Most of this part of Nuevo Leon lies in the Tamaulipan biotic province and has an annual rainfall of about 60 cm (23 inches), which is slightly greater than the 40 cm of rainfall characteristic of the Lower Pecos region. Higher areas in this part of Nuevo Leon receive up to 90 cm of rainfall. The climate here in the first half of the seventeenth century might have differed somewhat from that of today, with heavy rainfall and flooding documented in 1636, 1642, 1644, and 1648 in Monterrey and Cerralvo (García 1975:78-79). According to De León, frost from November to March was common, with snow in December and January and little in the way of summer rainfall until September in this region covered with dense thornscrub, ebony, brazil, guayacán, live oak, laurel, rhubarb, "cocolmecate, que llaman china" [according to Santamaria (1974:261-262) **cocolméca** or **raiz de china** is **Smilax rotundifolia** or **S. pseudo-china**, although Martinez (1955:39) applies the term to **S. cordifolia** and Ford (1975:165) to **Salix mexicana**], "yerba tembladora" (**Mimosa** sp.), and indigo, with cypress, willows, and cottonwoods along the major streamcourses, populated with deer, rabbits, jackrabbits, "gallinas monteses" (Duaine judges these to be prairie chickens), javelina, armadillos, badgers, predaceous cats (bobcats, perhaps) and hostile Indians (García 1975:44-45). Presumably the area where De León most often encountered Indians corresponded to the Eastern Coastal Plain Scrub and Piedmont Scrub biomes as defined by Muller (1939:697-699; Plate 7).

TRANSLATED EXCERPTS

Chapter 8: Of the Foods Of These Peoples

[Page 22] The people of this Province [1] are so strange in their food habits that if one observes carefully, they differ in condition and custom from all other men. Their usual food is, in wintertime, one which they call **mescal**, which they make by cutting the leaves and heart of the lechuguilla and roasting it for two days and nights [2]; they eat the juice and pulp, chewing and sucking it, and throw out the fiber, on top of which they walk and sleep, and this lasts as long as it is not the warm season, for then it spoils [3]. Lacking food, they return to collect it, trampled and dried by the sun [4] and grind it in the wooden mortars [5] that are generally used, and eat the flour. This food is hot, of little substance [6], but in this season they go lean and hungry [7]. It is a purgative [8]. They eat it both hot and cold, however it best suits them; it can keep for many days [9]. In the summer, after the prickly pear begins to bud, they eat the flowers and the immature tunas themselves, roasting them [10], since there is a great abundance throughout the land. This takes place while they are not yet ripe; after that, each man carries a net bag [11], with which they collect, clean, and easily eat the tunas, discarding only the well-sucked core. Of these there are many kinds, some better than others, and all bad, although the best does not compare with the worst of New Spain. They make dried fruits of them, sometimes whole and at other times split lengthwise, spread under the sun on mats or on the ground. They then eat the mesquite, of which there is an abundance; they eat it from when it begins to ripen until it is dry [12], and they grind it in their mortars, preserving it, sometimes sifted and sometimes with seeds, placed on small mats, like sacks, made for this purpose, or in slit prickly pear pads [13]: they call it **mesquitamal**; it is a very substantial food, hot and dry [14].

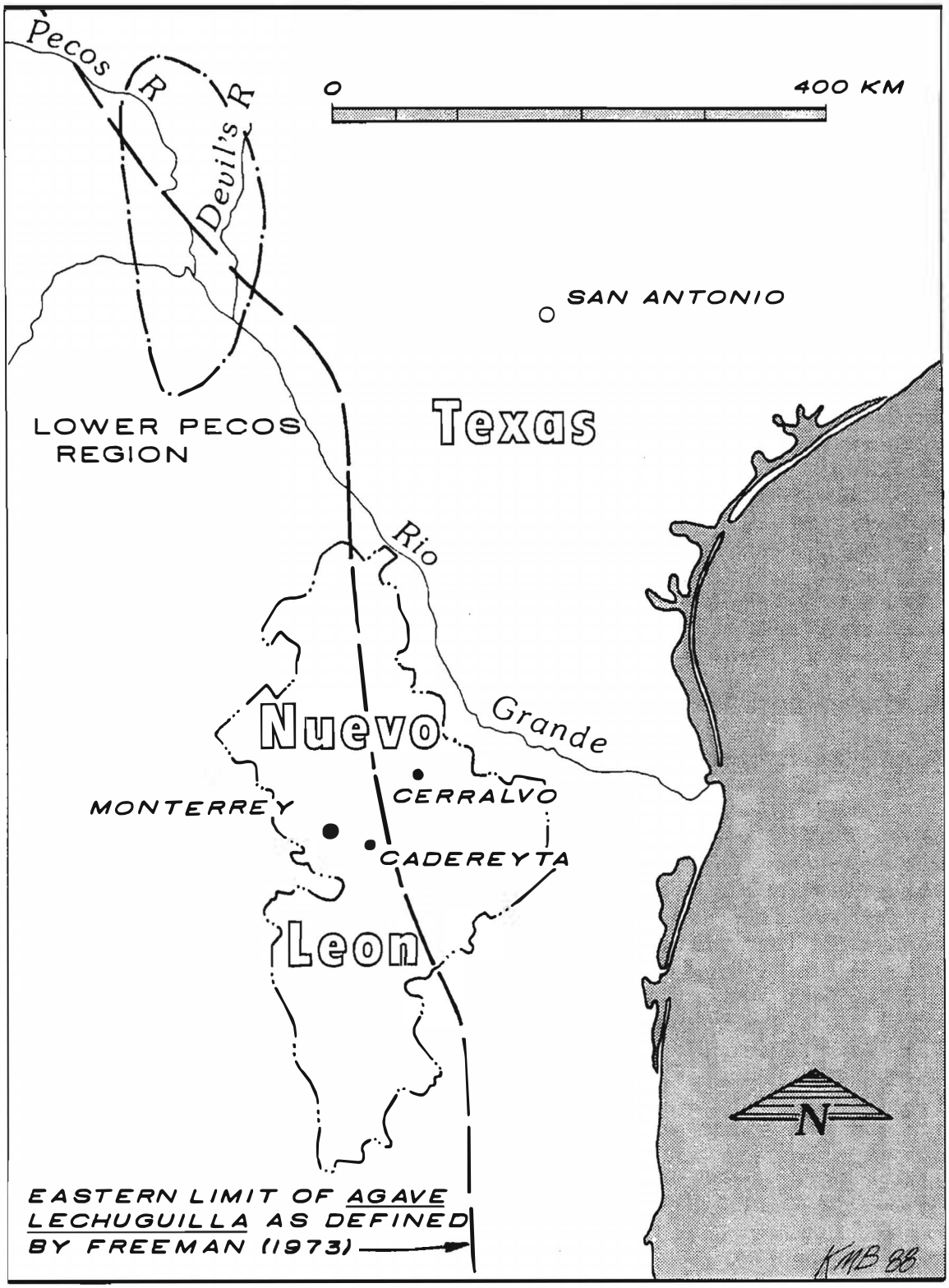

Figure 1. Location of Area Discussed in Text. Limits of the present state of Nuevo Leon are shown. Most of De León's observations probably pertain to the area around Cadereyta, Monterrey, and Cerralvo.

They become fat at this time. There are many kinds of wild fruits, present all over the Province, so that in the summer they eat the fruits, in the winter the roots, and then they go about like hogs, venturing into the field to collect them, and carry a large quantity.

Wherever night finds them, they sleep. They make a fire wherever they want, rubbing two sticks together skillfully [15]. They are great hunters and thus when they leave, nothing is left alive. They run like the deer, the meat of which is the best they have, and on killing it, leave it and the next day send the women after it, who find it by following the trail left and bring it in. The hunter owns the hide but does not eat the meat; all share among themselves [16]. There is no bird or animal they do not eat, even unclean and poisonous ones, such as snakes, vipers, rats and other things, except the toad and the swift [17]. They are, men as well as women, great fishermen. They fish with various methods, with the arrow, with nets, blinding the fish at night, and entering their caves [18] to seek them out. They roast them with tripe, often after two days; [page 23] the stench does not bother them, and thus they will eat anything dead for eight days, infested with maggots.

They are gluttons, self-indulgent [19], languid and slothful. Their women are the ones who, day and night, find the food and prepare it, while they sleep or go about. Often an Indian will have a heap of tunas within easy reach [20] when he reclines, equivalent to a **fanega** of any other commodity, and that night, without raising his head, eats it all and even awakens ravenously to retrieve the skins he has discarded. They eat salt, and if they lack it eat a kind of herb like wild rosemary in its place, charred and reduced to ashes [21]. They drink any water very well with the hands, when they are standing in it and when afar, the women carry twelve or fourteen hollow **nopales**, full of water, without the pulp affecting the taste, in net bags reinforced with two withes, the thickness of a finger, which they carry on the shoulders [22], and in which a **fanega** of wheat would fit. When drying tunas, distant from water, they make pits, shaped like a cone of sugar, in the well-trampled ground; over it they place sticks and grass, and there crush the tunas, so the pit fills up with the juice, and of that they drink slaking their thirst and refreshing themselves greatly.

Whatever effort they put into making dried fruit and **mesquitamal**, which they could have all year, lasts them only during the season of green fruit, showing how temporarily provisioned they are [23]. They consume their supplies in their gluttonies, without taking care to conserve for tomorrow, eating more to satisfy the stomach, without being satiated, than to conserve life like men, arising eagerly in the morning to seek sustenance for that day, like the practice of irrational brutes.

Omitted Material: Not translated here is one paragraph of hortative rhetoric advocating religious conversion of the Indians, forming the end of Chapter 8.

Discussion

From the viewpoint of the archaeologist, the most interesting thing here is the unmistakable indication of seasonal variation in diet. There is a clear distinction between the principal warm-season foods, first mesquite pods and then **Opuntia** flowers and tunas, and the cold-season staple, lechuguilla leaf bases and bulbs. Particularly important is the identification of lechuguilla as a winter ("starvation") food. Judging by the sometimes massive amounts of roasted lechuguilla leaf bases and caudex fragments recovered from dry shelters in the Lower Pecos region of Texas, archaeologists have always presumed that lechuguilla (**Agave lechuguilla**; and sotol, **Dasylirion texanum**) assumed a staple role in prehistoric diet, but no one has yet demonstrated a preponderance of lechuguilla in the diet at any particular season. As a perennial plant in which the principal edible part is the rootstock and basal part of the rosette,

rather than seeds, pods, or the like, lechuguilla is both available and edible year-round.

Most of the coprolite studies that have been done in the Lower Pecos region have found spring and summer to be the most likely season of deposition, based on the presence of pollen from plants that flower during these seasons (see Bryant 1969, 1974; Riskind 1970; Williams-Dean 1978; and Stock 1983). In some cases Bryant or others found coprolites wholly or nearly lacking pollen, but Bryant cautions these need not necessarily represent a winter occupation. At Frightful Cave in Coahuila, Bryant suggests a summer and fall season of deposition for most of the coprolites, except for three specimens which might have been deposited in fall or winter (Bryant 1975:101). The macrofossil content of these specimens has not yet been published by Fry. Another problem of analysis is the difficulty of identifying macerated fiber in studies of macrofossil content. Stock (1983:84-85) found the fiber content in her study sample ranging from 25 percent to 99 percent, yet in most cases was unable to identify the fiber because of lack of diagnostic features.

Of the many Indian groups reviewed by Castetter **et al.** (1938) in the southwestern United States and northern Mexico, where seasonal data are given most reported gathering **Agave** during the spring. Only the Yavapai and some of the Paiute are mentioned as relying in winter on **Agave.** Among the Northeastern and Western Yavapai, "beginning in November, parties of the Northeastern group sometimes remained in the hills three or four months gathering and preparing the mescal, although it was available year round" (Castetter **et al.** 1938:40). The Kaibab Paiute are reported as having "gathered mostly in winter and spring when food was short" (Castetter **et al.** 1938:46).

Recently completed research on seasonal changes in the nutritional condition of lechuguilla and sotol, a cooperative project by the Center for Archaeological Research and the Texas A&M University Agricultural Research and Extension Center at Uvalde, is based on about 18 months of seasonally spaced plant collections in Val Verde County. Evaluation of the data is still underway, but the results so far seem to indicate that for lechuguilla, seasonal changes in nutritional status are not dramatic (and are probably much less substantial than changes in nutritional state of individual plants during the flowering process). Some of the lab data seem to indicate that the **relative proportions** of constituents such as fiber content and percentage of cell solubles (including carbohydrates, proteins, and lipids) may be partially controlled by moisture content in the plant, which may in turn be affected somewhat by the amount of soil moisture at whatever time the plant is collected.

Lechuguilla contains a natural soap (saponin) which must be rendered harmless by somewhat prolonged cooking. The baking time, here given as 48 hours, agrees with most of the available ethnobotanical data from elsewhere in northern Mexico and the southwestern United States. Because considerable labor must be invested in harvesting, pit-digging, fueling and baking, the caloric return is obviously considerably less than from foods requiring no processing (tunas) or less processing (mesquite pods). It is interesting, then, to see that De León also clearly notes a pattern of seasonal weight loss in which the Indians in winter are both **flacos** (lean) and **agalgados** (hungry, listless), while in the summer they **hácelos engordar** (become fat), as Ruecking (1953:489) has already noted. Also significant is the indication that fibrous remnants (quids) are reprocessed, perhaps as a sort of desperation food. Here De León seems to be indicating that bands return to recently vacated winter occupation sites. Whether this truly indicates reduced mobility during the winter season, we can only speculate.

Perhaps equally interesting is the complete lack of any indication of seasonal variation in animal foods. There are indications, however, in the references to fishing, drinking, and tuna-juicing of considerable variation in availability of water. Whether this is seasonal, or represents geographic variation within a single band's annual round, or whether De León is talking

about differences between different parts of the entire province is not evident.

Chapter 15: Of The Method Of Fighting Of The Indians Of This Province, And Their Arms

[Page 35] Since the time of Lamech, descendant of Cain, wickedness began to spread in the world, and armaments had their beginning. The first used [page 36] were the bow and arrow, and their use has been so extensive that they have become customary, and it is clear that they have never ceased to exist in any nation; in the most remote and unknown ones that have been discovered, in the eastern as well as these western regions these have been found to be the most common, in the exercise of which there are the most dextrous archers. They make the bow of a size they can manage, of different kinds of wood; the best and most flexible, according to them, are those of the mesquite root; the cord is of fiber that comes from the lechuguilla, so well twisted and arranged, that it appears made of one piece, so that it is the thickness of six or seven harpstrings [24]; the arrows are of a slender, hard reed, cured in the fire; at one end, a notch which engages the cord, so it will not slip off and will have more force propelling it, from which end extending toward the other they place feathers, some nations using two and some three, some four fingers in length, some more and some less, up to a hand-breadth; these are either glued with a bitumen which they call **sautle**, [25] or are lashed at the ends with deer sinew so well applied that there are no visible knots nor can one see where the binding begins or ends as long as it does not get wet; at the other end of the reed they place a scorched shaft, equal in size and thickness to an **almanacate** [26] or spindle that workers use when they spin; this is inserted about four fingers into the cane, and butted up against one of the joints, and they lash it to itself with sinew, which is so strong and tight-fitting that only in the material does it differ [27]; at the far end of this shaft they make a notch, and in it they place a sharp-pointed stone, in the shape of a lance head, making some barbs at the rear, so that when it penetrates any part, the stone remains there, if it chances to meet with anything, or opens a cruel wound; it has the design of an anchor point, which has two barbs; this they lash with sinew or glue with **sautle**, and it remains, by one or the other means, very strong and equal to any use; this is of flint and some are made of iron, if they find it at hand; the entire arrow is half the arm length of the marksman [28]. On the left arm, almost from the wrist to the elbow, they wear the skin of a coyote or other animal, a strip of which is wound about four or five times and tied, which serves as a guard against the damage, upon shooting, which the bowstring might do to the arm; it is called the **batidos** [29]; or they also use two-edged flints, a hand-breadth long and the width of two thin fingers, in the hand like a dagger and glued with the same bitumen [30] on a stick which serves as a hatchet for their use; they carry them in the bindings of the **batidos** in the uppermost strap, defending themselves with it, and they can stab with it like a knife.

Omitted Material: Omitted from translation here are two paragraphs at the end of Chapter 15 describing pursuit of Indians, Indian methods of ambush and of preparing scalps, and rituals performed when greeting returning war parties.

Discussion

The bulk of the text obviously describes the type of compound arrow used in the region. Because of his long service in the Indian wars on the northern frontier, De León undoubtedly had plenty of opportunities to examine arrows removed from the bodies of Spaniards, their Indian allies, or their horses and livestock. The mainshaft was of cane, perhaps firehardened. De León does not mention a separate hardwood nock; arrows recovered from Cueva de la Candelaria,

in Coahuila lacked separate nocks, with the proximal end of the mainshaft simply tapered and notched (Aveleyra Arroyo de Anda 1956a:134,Plate 31). Some variability in the method of fletching is indicated, differing among the various bands. **Sautle** is perhaps a form of asphaltum, as indicated by the term **betumen** rather than a vegetal gum. De León's testimony that one cannot "see where the binding begins or ends" indicates that the sinew binding on the fletching was whipped with the ends carefully tucked under the turns; similarly whipped bindings can be seen on arrow foreshafts from prehistoric shelters in the Lower Pecos region of Texas (see also Aveleyra Arroyo de Anda 1956b:Plate 11). The "scorched" shaft mentioned seems to indicate that foreshafts were firehardened, although such treatment does not seem to be common on the Lower Pecos foreshafts.

From De León's remarks it seems clear enough that most of the arrow points were made of chert, although by 1649 some points were being made of iron when it could be scavenged. Of particular interest is the description of what evidently were rather prominent barbs. This suggests that the points were not Guerrero points, which generally lack well-developed barbs (Turner and Hester 1985:177), but might have resembled something like Starr, Perdiz, or bulbar stemmed points (Turner and Hester 1985:190, 187, 166).

The mastic-hafted "two-edged flints" most likely represent something similar to the large triangular mastic-hafted bifaces recovered from Cueva de la Candelaria (Aveleyra Arroyo de Anda 1956;:Plates 12-16), which suggests the interesting possibility that the Candelaria specimens might be primarily defensive weapons. Taylor (1972:174) has already called attention to this possibility. Alternatively, the "flints" De León saw might represent something like the sotol or agave knives recovered from Lower Pecos sites (Shafer 1986:111), although the latter have been interpreted as women's tools.

CONCLUSIONS

San Antonio and the mouth of the Pecos River both lie roughly 500 kilometers, or 300 miles, from the territory frequented by De León and his observed Indians. This is a considerable distance over which to extrapolate behavioral inferences, and yet it is precisely because early accounts of native behavior are so rare that the De León account has repeatedly been used by various scholars as an aid to understanding both historic and prehistoric populations in both areas. When selected bits of information are extracted, however, to reappear first in secondary, then in tertiary and quaternary sources, there is some danger of distortion. Some archaeologists, operating as consumers of ethnohistoric data, may not even be aware of the ultimate source of the data. In this regard, it is reassuring to discover what seems to be a healthy concordance between De León's seventeenth-century descriptions of economic behavior and some aspects of material culture on the one hand, and the material remains of prehistoric aboriginal culture in the dry shelters of the Lower Pecos on the other. Clearly some aspects of economic adaptation are both regional in nature and quite enduring, as Taylor (1972) has already noted. If so, the extreme skepticism regarding the ethnohistoric record expressed by Nunley (1971) may be overly pessimistic.

ACKNOWLEDGMENTS

I would like to thank Dora Guerra, Special Collections Librarian at UTSA, who checked my translation; but since I haven't always followed her advice, she shouldn't be held responsible for any mistakes. Dr. Thomas N. Campbell (University of Texas at Austin) also reviewed an earlier draft, but since he doesn't approve of everything I've done here, he should also be held blameless. Anne Fox also assisted by making her personal library available.

ENDNOTES

1. I have translated **reino** as "province" simply because that is the closest English equivalent, although the **reino** and the **provincia** were actually distinct administrative units (Barnes, Naylor and Polzer 1981:61-62).

2. **Mescal** seems to refer simply to cooked lechuguilla, not to some type of fermented beverage such as **tesvino** or **pulque** or the like (however, see Ruecking 1953:487). Mescal, as defined in dictionaries of regional Spanish (Islas Escarcega 1961:171; Santamaria 1974:721) is usually defined as an alcoholic beverage distilled from maguey (see Garcia Conde 1945). However, this use of the term most characteristically pertains to the central Mexican plateau, and in particular to cultivated species of **Agave** such as **A. tequilana** (Gentry 1982), especially in Spanish colonial and postcolonial times. Castetter **et al.** (1938:60-62) describe beverages made from fermented **Agave** among the Apache, Papago, Pima, and Zuni, but whether the practice in northern Mexico was indigenous or introduced is less clear. De León says nothing about fermentation of the **mescal**, and distillation can certainly be ruled out. Most likely it was the Spanish themselves who spread the process into the northern provinces. See Berlandier (1980:529-530) for a description of the method of preparing the fermented type of mescal in adjacent Tamaulipas in 1831. In northwestern Mexico the term mescal is applied indiscriminately to various agave species. Of the various species of **Agave** occurring in Nuevo Leon, **Agave lechuguilla** seems most likely to be the plant identified in the text, although other taxa such as **A. lophantha** are possible. Nearly all of the area under consideration here is well within the eastern limits of the present distribution of **Agave lechuguilla** (see Freeman 1973:Figure 1, and Gentry 1982). Species such as **A. americana, A. bracteosa**, or **A. striata** seem somewhat unlikely (see Gentry 1982, especially Figure 7.22; but cf. Newcomb 1961:41). The original phrase **"hacen en barbacoa"** has been translated as roasting because the procedure clearly refers to pit baking in an earth oven. Gentry (1963:90-91) gives an excellent description of pit baking, for consumption of the bulb and leaf bases, of various **Agave** species, including **A. yaquiana, A. bovicornuta**, and **A. shrevi** among the Warihio of Sonora and Chihuahua. The latter two species are locally termed "lechuguilla" by Spanish-speaking natives. Rendón (1947:225) gives a similar description of **mezcal en barbacoa** among the Tarascans.

3. De León says "**y esto dura mientras el tiempo no calienta, porque entonces se les daña,**" which Davenport (1924:293) translates "they do not cook, because it is injurious." I believe his translation is wrong.

4. This evidently refers to recycling of previously discarded quids or perhaps unused leaf bases from the exterior of the plant, which have a lower moisture and nutrient content. It is difficult to envision such recycled fiber having much food value, especially considering the energy loss involved in processing. Native encampments must have been like the Gosiute camps in the Great Basin described by J. H. Simpson in 1859: "The offal around, and in a few feet of it, was so offensive as to cause by stomach to retch, and cause a hasty retreat. Mr. Bean told me the truth when he spoke of the immense piles of **faeces** voided by these Indians, about their habitations, caused doubtless by the vegetable, innutritious charcter of the "food" (Simpson 1876:56). Elsewhere De León likewise observed, **"no usan el barrer y toda la porquería está, así en el rancho como fuera de él, y es verquenza...llegar a una ranchería, segun las inmundicias...y hedentina."** See also Taylor (1972:171).

5. See Collins and Hester (1968) for a description of a wooden mortar from an archaeological context in the Lower Pecos region.

6. This probably refers to the widespread Latin American folk concept of "hot" and "cold" substances; see also note 14. Kelly (1954:33-34) gives an account of contemporary attitudes of this sort in the Laguna district of Coahuila.

7. De León uses the term **agalgados**, which is evidently a form of the term **galgo**, hungry or lethargic, derived from **galgo**, a greyhound or similar dog. See Islas Escarcega (1961:127) and Santamaria (1974:545).

8. Although we do not contemplate any experimental research, we may speculate that the saponin in the lechuguilla tissue might very well act as as laxative if taken in quantity (as De León succinctly observed, **"es purgativa"**); how much is necessary to achieve the effect, and to what extent cooking neutralizes the effect is unknown. Gentry (1963:91) notes the same result; Corbusier (1886:327) observed "it frequently acts as a purge, and when dysentery or diarrhoea exists often aggravates the disease. If the plant is not well cooked, or if too young, it produces the same effect." The typical loose appearance of Lower Pecos coprolites might to due to this kind of effect, as Alexander (1970:59-60) has already observed.

9. De León says **"puede guardar muchos días,"** which Davenport for some reason translates as "it rots if kept for many days," which is obviously contrary to the intended meaning.

10. León says **"en barbacoa,"** again evidently referring to pit baking.

11. De León uses the term **redecilla**, perhaps referring to a small, unreinforced net carrying bag (Shafer 1986:112), rather than to a **cacaxtle** or burden basket composed of netting suspended from a hoop made of lashed withes (see Shafer 1986:121), which is normally considered to be a woman's artifact.

12. This refers to the ripening of the pods, which are fully formed but green in about late June, becoming dry and yellow by late August, at which time they are typically attacked and bored by ants.

13. A prickly pear internode, marginally sewn with **Nolina** fiber and recovered from Fate Bell Shelter may represent something similar to this; see Gilmore (1937). Similar specimens were found in Amistad Reservoir at 41 VV 87 and 41 VV 160 (Collins 1969:95, Figure 51,b). Others have been recovered from Frightful Cave in Coahuila (Taylor 1972:175).

14. Compare with Note 6.

15. This, of course, refers to the use of the fire drill.

16. This is almost a worldwide universal among hunter-gatherers. Typically animals killed are shared reciprocally throughout the residential community, a sensible strategy for mobile hunters lacking refrigeration or the means to transport dried meat. The practice also ensures that isolated members of the community who are not kin to any active hunters nevertheless participate in distribution of meat. See Dowling (1968).

17. De León uses the term **lagartija**, which might mean any sort of small fence swift or other lizard.

18. The term **cuevas** is somewhat problematical; presumably some sort of rocky overhang is meant.

19. De León uses the term **epicureos,** or epicures, as he launches into a judgmental essay on aboriginal orientation toward immediate gra tification. The observaton that the women supply the bulk of the food is consistent with our current und erstanding of foraging economies. The same thing is true, for example, of Australian bushmen or !Kung foragers in Africa. It is also consistent with the idea that native food economies in Nuevo Leon were chiefly plant-based.

20. De León uses the term **"a la cabecera,"** i.e., "at the head of the bed," so to speak.

21. This reference is interesting. The Nuevo Reino de León included territory both with and without natural salines (curiously, the major reference on salines of northern Mexico, Ewald 1985 , is silent concerning De León's San Lorenzo saline, discovered in 1643, as well as the rest of Nuevo Leon). Most foraging peoples obtain adequate amounts of dietary salt from animal tissue, but northern Mexican plant-based foragers whose meat intake was chiefly from occasional small mammals might have a salt-deficient diet, if they lived in a salt-free area (see Driver 1969:94, Map 9, and De Mendizábel 1928:Figure 2). Some Amerindian peoples used potassium salts derived from **culinary ashes,** like those described here. The Navajo, for example, burn green juniper braches to produce an artificial salt (Wolfe **et al.** 1985). This, however, would only be effective as a temporary substitute since it would only exacerbate the imbalance between levels of sodium and potassium ions in the electrolyte system. A proper ratio is necessary for normal functioning of the human nervous system.

22. De León refers to these as **cacaxtles de red,** using the somewhat awkward phrasing **"los cuales cargan a las espaldas de la frente."** Others, such as Ruecking (1953:482), Newcomb (1961:44), and Taylor (1972:174) have interpreted the phrase **de la frente** to indicate the use of a tumpline. This may be correct, but in the absence of any specific mention of such a device I have omitted it here. Duaine (1971:30) translates it as "which they carry over their shoulder, back and front."

23. Here is another phrase difficult to render in English: **caso de notar cuán poco proveídos son;** the translation given here is not literal. Davenport says "but only during the time the fruit is green do they take note how few provisions are," which make little sense. Duaine (1971:31) translates it as "This is a case to note, showing how improvident they are."

24. This phrasing is also obscure. De León says **cual un bordón de una arpa, si bien es del gordor seis o siete bordones.** Ruecking (1953:482) simply says the bowstring "was quite thick." Duaine (1971:41) says "If made well, the thickness of the bow-string is six or seven times that of a harp string."

25. De León explicitly uses the word **betumen,** suggesting a natural asphaltum. However Hester (1971) and Aveleyra Arroyo de Anda indicate the mastic on hafted unifaces and bifaces from Coahuila archaeological sites is vegetal in origin, not asphaltum; Arroyo de Anda speculates that the mastic substance on the Candelaria specimens is a vegetal gum similar to candelilla wax (Aveleyra Arroyo de Anda 1956a:92). Other natural resins available in the region include natural exudates from species such as mesquite (**Prosopis** sp.), juniper (**Juniperus** sp.), and blackbrush (**Acacia rigidula**), which may be initiated by damage to the plant, as well as resin such as that forming on the pods of guajillo (**Acacia berlandieri**) as a result of insect predation upon maturity (many of the acacias, in fact, are prone to such exudates). Other possibilities include substances such as lac from creosote bush (**Larrea** sp.) or wax from ocotillo

(**Fouquieria splendens**). However, none of these substances is black like asphaltum, and some are rather light in color. See also Taylor's comments (Taylor 1972:174).

26. In Mesoamerica a **malacate** refers to the spindle whorl used on a spindle (see Manrique C. 1969:Figure 29 and Madsen 1969-614).

27. Evidently what De León means here is that the hardwood foreshaft and reed mainshaft are so well-fitted and of such uniform thickness that only by observing the different kinds of material does the joint become evident.

28. Ruecking (1953:482) has interpreted this as "about eighteen to twenty inches in length" which in Newcomb (1961:43) becomes "about twenty inches long."

29. This is problematical. García interpreted it as **bastidor**, or framework, which makes little sense.

30. See Note 25. The phrase **"un palo que sirve de hacha"** is somewhat puzzling, though the following phrase **"se puede dar una puñalada como con un fierro"** seems clearly to indicate the weapon is sharply pointed.

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ANALYSIS OF SURFACE-COLLECTED MATERIALS FROM SITE 41 GL 19, A LATE PREHISTORIC SITE IN GILLESPIE COUNTY, TEXAS

William E. Moore

ABSTRACT

This article describes artifacts taken from the surface of site 41 GL 19 on the Pedernales River in the south-central part of Gillespie County, Texas (Figure 1). Dart point types Darl and Ensor and arrow point types Scallorn, Edwards, and Perdiz suggest this site was occupied from the Transitional Archaic through Late Prehistoric times. Bifaces, probably preforms, from the site indicate that projectile points were made at the site. Some of the bifaces may represent finished tools which were used for special purposes such as cutting and scraping.

INTRODUCTION

In 1968, I recorded several prehistoric sites in Gillespie County while living in Comfort, Texas. Site 41 GL 19 was found by asking local residents about known archaeological sites in the area. I made several collection trips to this site and collected only diagnostic artifacts such as projectile points and obvious worked bifaces. Flakes were not collected but were observed as numerous. No photographs of the site were taken and no attempt was made to map the site or accurately define its boundaries.

THE SITE

Site 41 GL 19 is located in a plowed field on a terrace of the Pedernales River. The site has been extensively disturbed through plowing, and it was very difficult to determine its boundaries; however, it may have extended to the banks of the river on the south. A dirt road cuts through the part of the site next to the river and the western edge has been damaged by the construction of State Highway 87. Recently, a site was observed across Highway 87 to the west and on the same side of the river, but it is not known if it is part of 41 GL 19. This new site has not been recorded, either as part of 41 GL 19 or as a separate site, at this time.

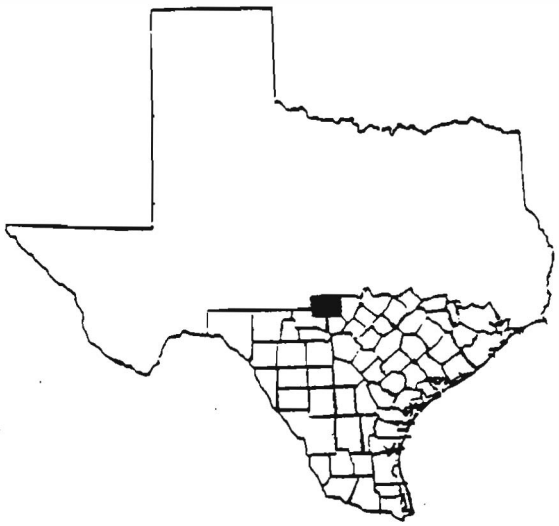

Figure 1. Location of Gillespie County, Texas (darkened area).

Burned limestone rock was observed scattered over the surface of the site but, due to extensive plowing, it could not be determined if the site was a burned rock mound or midden. This site is known to collectors and, according to the owner, a large number of artifacts have been found at this site.

Site 41 GL 12, a site containing primarily artifacts from the Middle and Late Archaic periods, is located nearby (Figure 1). This site has been reported on in earlier issues of **La Tierra** (Moore 1983, 1985).

ARTIFACTS

Artifacts collected from 41 GL 19 include arrow points, dart points, and miscellaneous bifaces, some of which may represent projectile point preforms. A total of 24 artifacts was recovered from this site. Six specimens are projectile points and the remaining 18 are bifaces. Artifacts from 41 GL 19 have been given to the Center for Archaeological Research, The University of Texas at San Antonio, for permanent curation. Type names assigned to artifacts from this site are taken from Suhm and Jelks (1962) and Turner and Hester (1985).

ARROW POINTS

Four of the artifacts from 41 GL 19 are classified as arrow points. They are described below.

Scallorn (Figure 2, a)

One specimen of this type was found. The base is straight and the specimen is corner-notched with shoulders that are well barbed. The stem is expanding and the lateral edges appear to be straight. One of the barbs is missing as well as part of the distal tip. The length is 1.7 cm and the width is 1.2 cm.

Perdiz (Figure 2, b)

One specimen of this type was found. This point has well-barbed shoulders and a contracting stem. The base is straight or slightly convex. Much of the distal area is missing. The length is 2.2 cm (complete specimen was larger) and the width is 1.7 cm.

Perdiz-like (Figure 2, c)

One arrow point was found that resembles the Perdiz type and does not seem to conform to other known arrow point types for Central Texas. According to Turner and Hester (1985:187), "There is much variation in size and proportions" in this type. Therefore, it is believed that this artifact may belong to the Perdiz type.

This specimen is triangular with shoulders that are not well barbed. It has a contracting stem that is sharply pointed. The length of this specimen is 2.4 cm and the width is 1.4 cm.

Edwards (Figure 2, d)

One specimen of the Edwards type was found. The lateral edges are basically straight with possibly very light serration on one edge. The shoulders or barbs are prominent and pointed (one barb is missing) and the expanding stem is deeply divided and recurved providing projections which curve downward. Length is 2.5 cm and width is 1.7 cm.

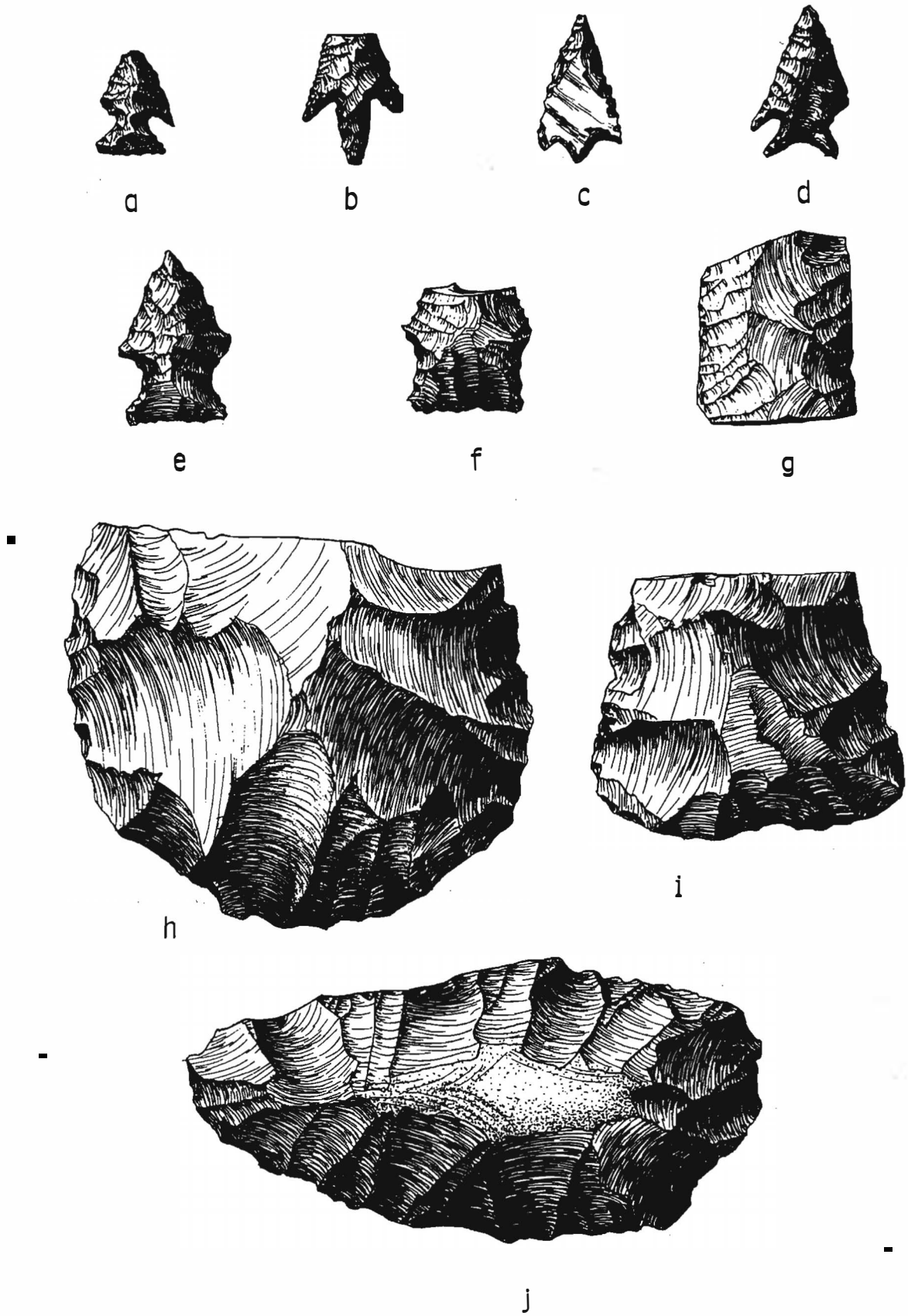

Figure 2. Artifacts from 41 GL 19. a, Scallorn; b, Perdiz; c, Perdiz-like; d, Edwards; e, Ensor-like; f, Darl-like; g, medial fragment; h, i, preforms; j, miscellaneous biface.

DART POINTS

Two specimens found at 41 GL 19 are believed to have functioned as dart points. These artifacts are described below.

Ensor-like (Figure 2, e)

One specimen which resembles the Ensor type was found at this site. The side notches are shallow and the base is slightly concave. The short blade size suggests this artifact may have been refurbished, possibly during a later group's occupation of the site. The length is 2.9 cm and the width is 2.0 cm.

Darl-like (Figure 2, f)

One specimen which resembles the Darl type was found at this site. Darl points are typically long, slender, carefully flaked, and possessing an expanding or rectangular stem (Turner and Hester 1985:84). This point is too broken to determine its actual length. However, it appears that this specimen may have been broken during manufacture due to the presence of slight hinge or snap fractures observed on the body. Beveling on the stem is present but appears to be unfinished. The width is 2.2 cm. Length was not measured.

MISCELLANEOUS BIFACES

The artifacts in this category could not be confidently placed in any of the known biface types as defined by Turner and Hester (1985). Basically, they represent failures in the lithic reduction process or bifacial tools that could have been used for such tasks as cutting and scraping. The categories of bifaces from this site are discussed below.

Medial Fragments (Figure 2, g)

Two specimens representing the medial portions of bifaces were found. The illustrated specimen may be part of a projectile point as it has been thinned and is alternately beveled. No determination can be made about the other specimen.

Preforms (Figure 2, h, j)

Sixteen bifaces found at this site appear to represent various stages of lithic reduction and have been classified as preforms. One specimen (Figure 2 h) is an example of a biface failure probably due to breakage during the reduction process. This is exemplified by the presence of hinge or snap fractures on the artifact.

The flintknapper had good success in thinning one of the specimens (Figure 2, i) before it broke. Cause of breakage is uncertain, but there is an area of impurity at the point where it broke.

With another artifact (Figure 2, j), the flintknapper simply could not reduce the preform any more. The presence of some of the flake scars along the edge suggests that this artifact may have been salvaged as a tool for scraping or cutting rather than discarded as a projectile point failure. It is possible that the flintknapper never intended for this specimen to function as a projectile point.

The remaining 13 specimens include distal tips, basal portions, and unidentifiable biface fragments.

CONCLUSIONS

Admittedly, the size of the artifact sample from site 41 GL 19 is small and the collection procedures were biased in favor of diagnostic artifacts, but certain statements can be made regarding this site. The point types, for example, suggest a recent occupation, probably Transitional Archaic through Late Prehistoric times.

The dart points are the oldest artifact types from this site. Ensor points, according to Turner and Hester (1985:94), belong to the Transitional Archaic, circa 200 B.C. to A.D. 600 and are widespread in Central and South Texas. Darl points are also considered to be Transitional Archaic (circa A.D. 200) and are commonly found in Central Texas (Turner and Hester 1985:84).

Following the Transitional Archaic, the Late Prehistoric Period began. During this time, arrow points were the main point form. Edwards, Scallorn, and Perdiz points, found at site 41 GL 19, are all typical of the Late Prehistoric period. Edwards points are common in south-central Texas and date from A.D. 960 to A.D. 1040 (Turner and Hester 1985:173). Scallorn points are found over most of the state and date from A.D. 700 to A.D. 1200. These points are sometimes found with or in burials (Turner and Hester 1985:189). The Perdiz type is also found throughout most of Texas and dates from circa A.D. 1200 to A.D. 1500.

The artifact sample, therefore, suggests that this site was occupied from the Transitional Archaic through the Late Prehistoric periods. If the ratio of arrow points to dart points is valid, the primary occupation of 41 GL 19 would be during the Late Prehistoric period. A larger sample would be needed to support this statement.

The presence of preforms indicates that projectile points were made at the site. Some of these bifaces may have been used for other purposes such as cutting and scraping, but the function of these artifacts cannot be ascertained. Edge wear studies, needed to identify tool function, are very difficult on specimens found in an area that has been plowed and used by hoofed animals for grazing. An excellent discussion of plow damage to artifacts and the problems that result is found in a study conducted by Mallouf (1981).

Site types during the Late Prehistoric period, according to Prewitt (1981:82-83), are terraces and rockshelters. Site 41 GL 19, located on a terrace, conforms to Prewitt's findings. Prewitt (1981:82-83) states that basin hearths are common features during the Austin Phase while large flat hearths and basin hearths are common in the Toyah Phase. No firm evidence of hearths was found at this site although burned rock was seen scattered over the surface.

Due to the very disturbed condition of this site, good data regarding this site can best be obtained from controlled excavation. Surface materials are so scattered that a controlled surface collection seems inadequate.

ACKNOWLEDGMENTS

The author would like to thank Evelyn D. Lewis for her editorial assistance. Michael R. Bradle catalogued and measured the artifacts. H. Blaine Ensor looked at the collection and offered suggestions concerning point typology. The artifacts were drafted by Richard McReynolds.

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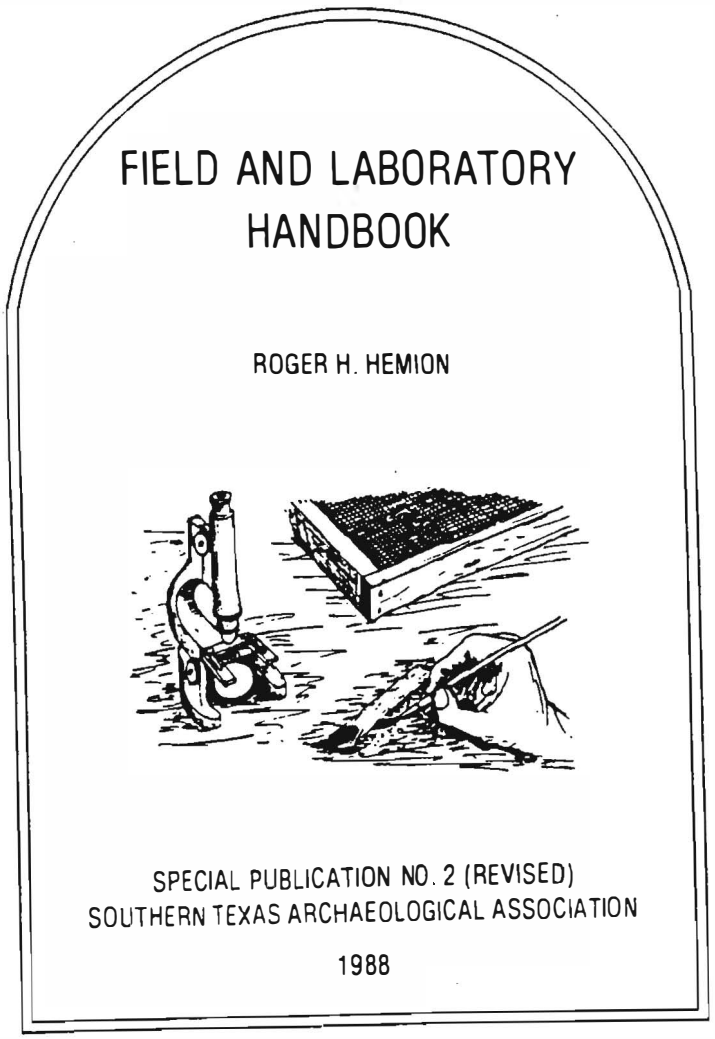

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A POSSIBLE LATE PALEO-INDIAN SITE ON CHILTIPIN CREEK, SAN PATRICIO COUNTY, TEXAS

R. K. Saunders

ABSTRACT

A potential Paleo-Indian site was exposed by recent flood control work along Chiltipin Creek in San Patricio County, east of Sinton, Texas. Two hearths were uncovered by recent bulldozing. Several artifacts were found on the surface of this, as yet, unrecorded site, including an early stemmed lanceolate point (the tentative "Victoria" type), indicating a probable Late Paleo-Indian component. Other artifacts recovered were several Late Paleo-Indian or Early Archaic projectile points, numerous chert flakes, and several bone fragments, including some deer bones and what appears to be a piece of human skull.

INTRODUCTION

Chiltipin Creek is a major drainage running basically west to east through central San Patricio County; it empties into Copano Bay on the central Texas coast (see Figure 1). A number of Paleo-Indian and Early Archaic artifacts have previously been documented from the upper reaches of this drainage system by C. K. Chandler (1982, 1983).

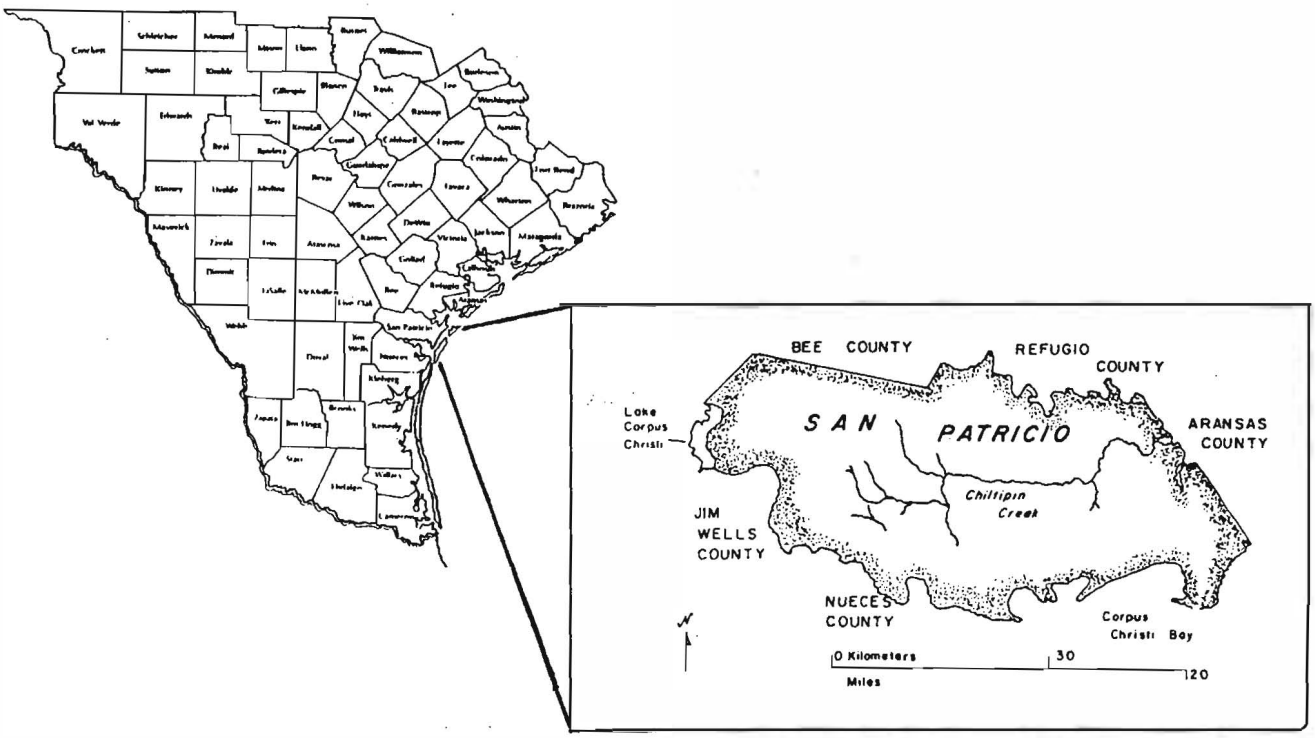


Figure 1. Map of the Lower Texas Coast. Insert of San Patricio County shows location of Chiltipin Creek in the county.

is 31.4 mm; length is 90.0 mm, and maximum thickness is 8.1 mm. The stem base and edges have been ground smooth up to the small shoulders.

The specimen was identified by Tom Kelly as his tentative Victoria type (Kelly 1983, and personal communication, October 1987). Turner and Hester use the term "Early Stemmed Lanceolate" for this type and state, "They have been found in loose association with other Paleo-Indian projectile points and are thought to date from that era" (Turner and Hester 1985:88). They felt that more typological research was needed to define the type further, but also noted Kelly's classification of such points in his tentative Victoria type.

Most examples of this variety of contracting stem Paleo-Indian point with deeply concave basal edges have been recovered from sites in Victoria County (hence, the tentative name) and in the Guadalupe-San Antonio Rivers drainage system. Specimens were recovered from the Johnson-Heller site (Birmingham and Hester 1976:Figure 4) and at the J-2 Ranch site (Fox et al. 1978:Figure 4, h). The recovery of the specimen reported in this paper from the Chiltipin Creek in San Patricio County extends the known distribution of the type much further south than expected. This result, of course, needs to be confirmed by the recovery of additional specimens, hopefully from excavation of a stratified site with datable materials.

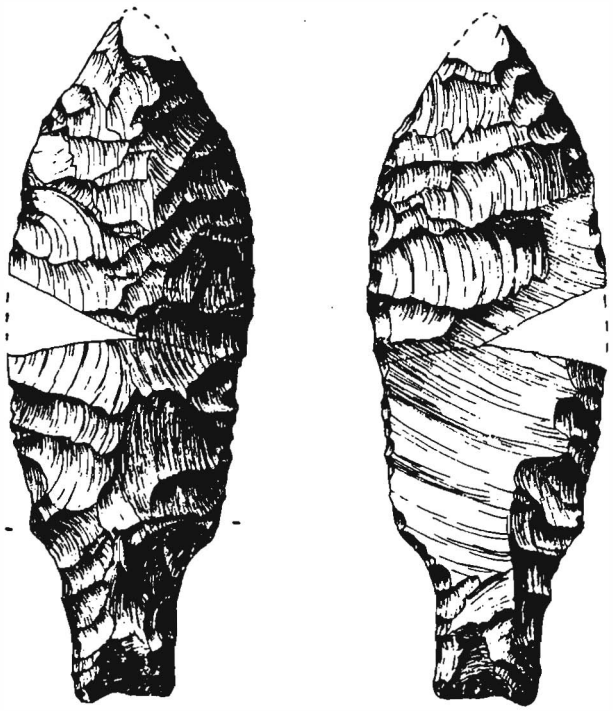


Figure 2. The Victoria point. A variety of Early Stemmed Lanceolate point found at the Chiltipin Creek site on the H&K Ranch, San Patricio County, Texas. Fine line drawing by Richard McReynolds.

Recently, flood control work has been done in the area to straighten and widen the creek. A bulldozer and dragline have been used in this work, exposing large areas of bare soil in the south side of the creek. The soil is very sandy and readily erodes, particularly in bare areas no longer covered by the normal dense growth of Coastal Bermuda grass and weeds.

In August 1987, Mr. John Beasley of Beeville, Texas, recovered a possible fluted Paleo-Indian projectile point from the surface of one such eroded area on the H&K Ranch, east of Sinton, Texas. Subsequent evaluation of the fragment indicates that the apparent fluting is most likely an impact fracture.

Inspired by Mr. Beasley's find, the author resurveyed the creek bank on the H&K Ranch on several occasions in the fall of 1987. A number of heavy rains have exposed a site which is perhaps 100 meters square, as indicated by several features and a scattering of chert flakes. The topsoil appears to have considerable depth, perhaps two meters or more, and may contain additional artifacts and features. At present, however, the surface of the site is very disturbed by the bulldozing and chaining done in rechanneling the creek.

Chert debitage is somewhat rare in most sites near the Texas coast since there are few local sources of the material. The nearest sources are two gravel bars on the Nueces River near the Nueces and Jim Wells county line (Chandler 1984). On the H&K Ranch site, 36 chert flakes and 10 chert artifacts have been recovered so far. By way of comparison, extensive excavations at Charlie's place near Ingleside conducted by the Coastal Bend Archeological Society and the STAA in 1986 produced shell, bone and a few artifacts but very few chert flakes.

About 100 meters upstream from the H&K Ranch site, several badly deteriorated **Probocidian** (mammoth/mastodon) bones were recovered. These cannot be associated with any of the artifacts reported here, and the bones were far enough away so as to be considered a separate site. Nonetheless, these **Probocidian** are sufficient to demonstrate the presence of now-extinct megafauna in the area at some time in the past.

FEATURES AND ARTIFACTS

Fire Pits - Two hearths or fire pits were found at the center of the exposed area of the site. The current soil surface has a pronounced slope up and away from the creek. All the artifacts and other materials were found near and downslope from the hearths, but were within five or six meters of the hearths. One of the hearths was deeper than the other by a few centimeters; the upper one was very nearly superimposed on the lower hearth. The lower fire pit was discovered when the sand of the upper hearth was being cleared away for a photograph. The hearths were made of sandstone; the rocks were black and reddish in color, presumably from contact with fire. There was a substantial amount of charcoal in and around these hearths and scattered down the slope toward the creek. Erosion of the upper hearth into and across the lower one made separation of discrete charcoal samples impossible; thus, no specimens of the charcoal were collected for possible dating of the site.

Victoria Point - A large, stemmed biface was recovered in two pieces about two meters downslope from the hearths (see Figure 2, a-a'). The distal end was found a few centimeters upslope from the proximal fragment which was still embedded in the ground; the fact that both pieces were found was most fortunate. The specimen has only one small wedge-shaped piece missing from its midsection and a very small portion of the tip. The breakage was probably caused by the dragline moving earth along the creek bank.

The point was made from a large blade of yellowish chert with gray inclusions. The ventral side is nearly flat with most of the flaking having been done on the dorsal surface. It weighs approximately 23.9 grams; maximum width

Small Stemmed Biface - The small stemmed point illustrated as Figure 3, a-a' is made of yellowish chert with coarse light gray inclusions. The material has a "waxy" feel indicating possible heat treatment (Turner and Hester 1985:18-19). Dimensions are: Length, 38.0 mm; maximum width, 17.1 mm; thickness, 6.1 mm; weight, 3.7 grams. The specimen seems small for a dart point, but is quite comparable in size and weight to the "unidentified" and "Gower-like" points reported from upstream Chiltipin Creek sites by Chandler (1982:Figure 3, i and k). Chandler classified these two specimens as Late Paleo-Indian or very Early Archaic points.

Abosolo - The proximal fragment of a large dart point is illustrated as Figure 3, b. It has the distinctive well-rounded base which is characteristic of the Abosolo type. Dimensions are: Length, 30.4 mm; base width, 27.2 mm; thickness, 9.9 mm; and weight, 10.1 grams. The Abosolo type was used during much of the Early to Middle Archaic from 6000 to 1000 B.C. and is typically found in South Texas and northeastern Mexico (Turner and Hester 1985:61). Thus, if used during the early part of this period, it would not be out of place with the Small Stemmed biface and Victoria point reported above.

Possible Abosolo - A midsection fragment of another biface is shown as Figure 3, c. This specimen is made of a light beige and gray chert similar to the Abosolo point above (3, b). Dimensions are: length, 33.5 mm; maximum width, 24.2 mm; thickness, 6.8 mm; and weight, 7.0 grams. It has fine random flaking and may also be part of an Abosolo point.

Large Biface Fragment - A proximal fragment of a large biface is illustrated as Figure 3, d. It is made of brown vitreous chert with gray and white inclusions. Dimensions are: Length, 59.2 mm; maximum width, 39.5 mm; thickness, 11.3 mm; and weight, 18.9 grams. Most of the flaking on this biface consists of large percussion flakes, suggesting it may be what some would call a trading blank or a "stage 2" preform (Mitchell, Chandler and Kelly 1984:Figure 5). This specimen may suggest how chert was transported into the area.

Clear Fork Tool - Four views of this small biface are shown in the upper left corner of Figure 4 (end view = e, lateral = l; dorsal side = d; ventral = v). The artifact is made of a light brown and tan chert. Dimensions are: length, 41.8 mm; maximum width, 34.7 mm; thickness, 15.3 mm; and weight, 21.5 grams. It has a crescentic shape and the bit end is steeply beveled; cross section is plano-convex. Both the bit end and the right lateral side (dorsal view) show significant wear from use as some form of scraper. This artifact was recovered from the upper fire hearth noted earlier. In general size and morphology, this specimen seems quite similar to the Group 3, Form 1 variation of Clear Fork tools (Hall, Hester and Black 1986). Turner and Hester (1985:205-208) date such bifaces as Middle to Late Archaic, perhaps 2500 to 1000 B.C., but note that some Clear Fork tools occur as early as the Late Paleo-Indian period.

Clear Fork Uniface - Three views of this artifact are shown as l, v, and d in the upper right panel of Figure 4. It is made of a mottled multicolor chert. The edge angle of the bit end is approximately 60° and heavy edge wear is apparent on all of the side edges as well as the bit. Dimensions are: length, 45.0 mm; width, 27.4 mm; thickness, 19.0 mm, and weight, 21.9 grams. Such unifacial Clear Fork tools are thought to date from Paleo-Indian times to the Middle Archaic (Turner and Hester 1985:205).

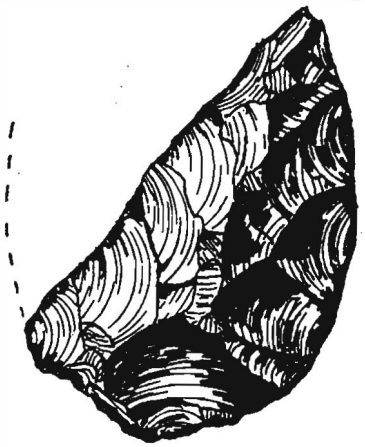
Flake Scrapers - Four additional small chert artifacts are shown in the lower panel of Figure 4. These expedient tools are evidence that site occupants made some use of any piece of chert of adequate size and shape to do a

a

a'

b

c



d

Figure 3. Projectile point and fractured artifacts from Chiltipin Creek site on the H&K Ranch, San Patricio County, Texas. Drawn by the author.

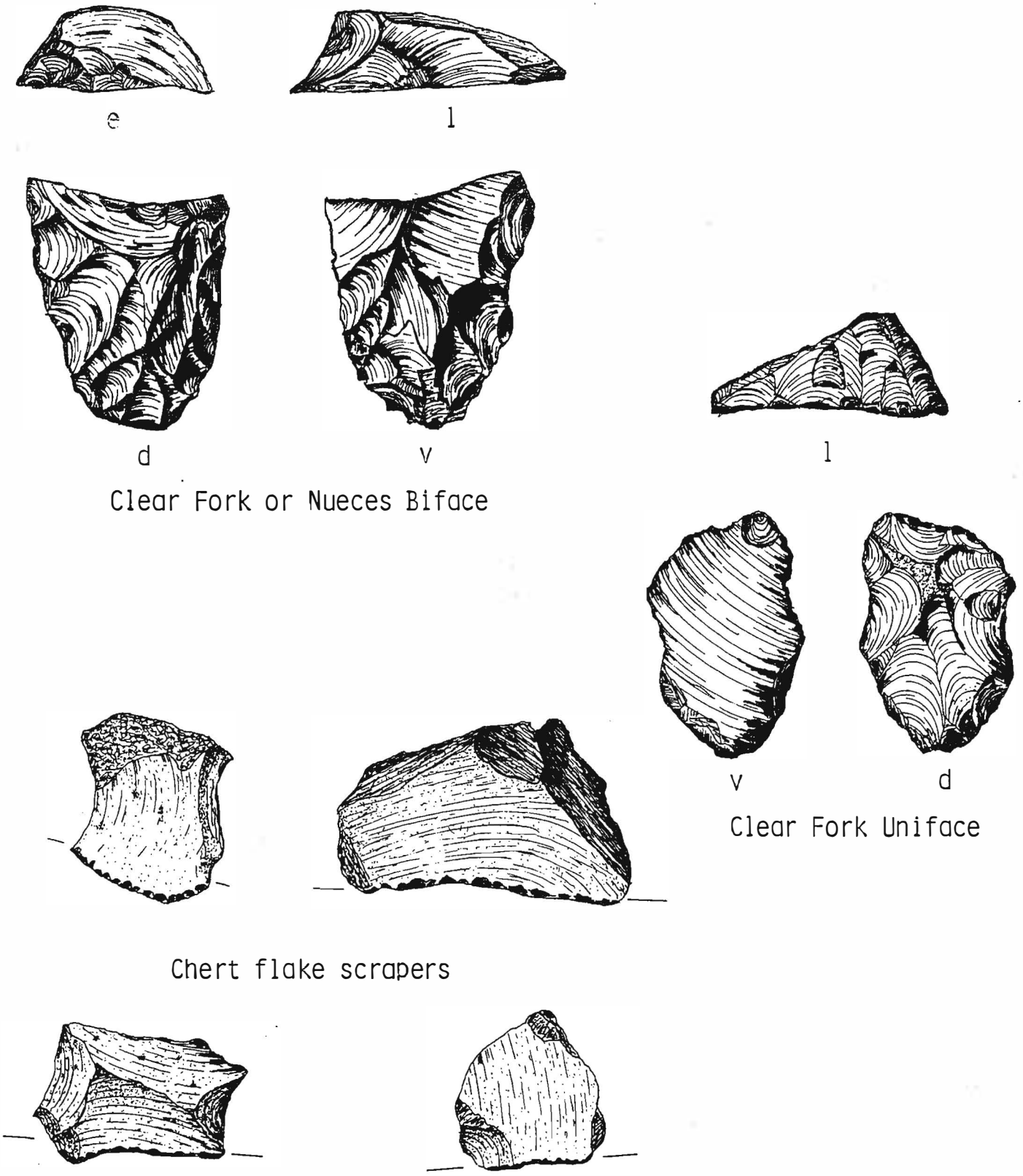


Figure 4. Variety of scraper types found at the Chiltipin Creek site on the H&K Ranch, San Patricio County, Texas. Drawn by the author.

job. Some use wear is visible to the unaided eye on at least one edge of each of these four artifacts. Microscopic examination of the other flakes recovered from the site would probably show similar utilization.

BONE SPECIMENS

Teeth - Two teeth were recovered from the surface of the site (Figure 5, a and b). They appear to be from some large herbivore, but the exact species is not known.

Large Bone - A larger piece of bone was also recovered and is shown as Figure 5, c. This fragment appears to be from the knee of a deer.

Human Skull Fragment - Three views of the third type of bone recovered are shown in the lower panel of Figure 5 (lateral view = l, dorsal view = d, Ventral = v). The ventral side is very smooth and slick. This fragment appears to be a piece of human skull. If the curvature of the lateral view is extrapolated to form a hemisphere, it would be a circle of about six inches in diameter. Similar skull fragments were recovered from Site 41 SP 69, upstream on Chiltipin Creek west of Sinton, as were artifacts ranging from early Paleo-Indian times (Clovis) through the Late Prehistoric (Perdiz and pottery) from a recognizable midden area (Chandler 1982:27).

DISCUSSION

The artifacts and bone materials recovered from this as yet undocumented site strongly suggest a multicomponent occupation ranging from the Late Paleo-Indian period through at least the Middle Archaic. The archaeological evidence of the site recovered to date was located because of channelization of the creek and flood control work. How much of the site was destroyed is not known, but perhaps the more important question is: How much of the site still remains? If one assumes that the two hearths were near the center of the site, then only that part of the site between the hearths and the creek has been destroyed. The other side of the site (away from the creek) is probably still intact although it is under several feet of soil dragged or scraped up by the flood control work.

The nature of the soil on the site is very sandy; Copano Bay and the coastline is only a few miles downstream. It is expected that with heavy rains, what remains of the site will soon be destroyed by erosion. Some immediate salvage work needs to be done in the near future if any further information is to be recovered from this site. Yet the potential for development of some significant information is there. Any work should attempt to demonstrate the possible multicomponent stratigraphy at the site. Particular attention should be given to any undisturbed charcoal and bone samples. There are no dated Late Paleo-Indian and Early Archaic sites on this section of the Central Texas coast, even though a considerable amount of materials from these periods have now been documented in the region through surface collections.

Since considerable topsoil (midden?) remains on the upbank side of the two hearths, it is very likely that additional bone and artifacts might be recovered from the site. However, if the site is to provide any additional archaeological information, controlled excavations need to be carried out in the immediate future.

ACKNOWLEDGMENTS

My thanks to John Beasley for information on the location of this site and to the owners of the H&K Ranch for permission to resurvey the area. A very special thanks to Richard McReynolds for his fine drawing of the Victoria point

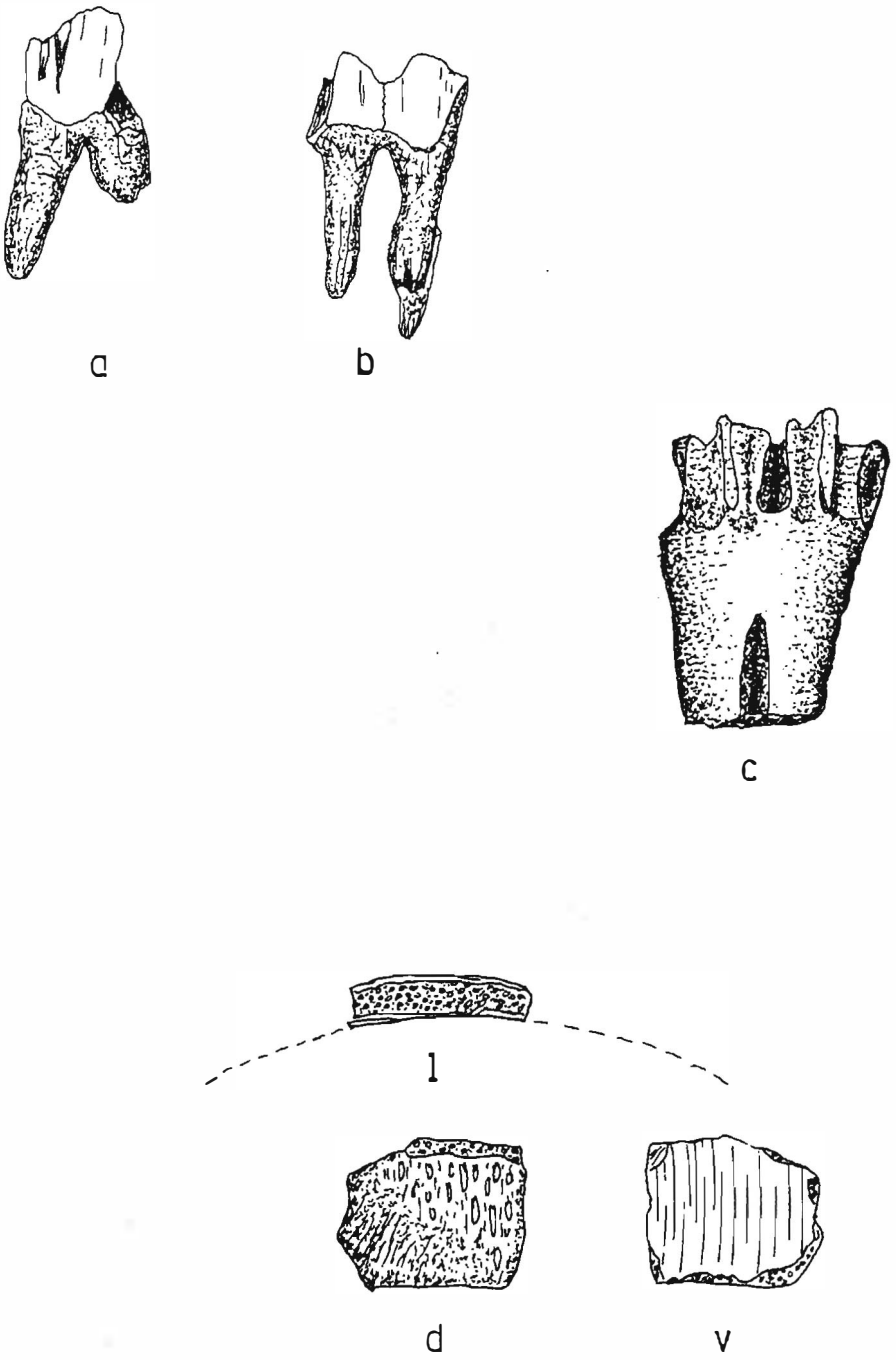


Figure 5. Three types of bone found at the Chiltipin Creek site on the H&K Ranch, San Patricio County, Texas. a, b, Teeth (surface); c, larger bone fragment, possibly from deer; Lower 3 fragments, lateral, dorsal and ventral views of human skull fragments. Drawn by the author.

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