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Prehistory in the Lower Pecos:
An Overview

by Solveig A. Turpin

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Figure 1. The confluence of the Rio Grande and Pecos River prior to inundation by Lake Amistad. Looking down the Rio Grande canyon, mouth of Pecos at lower left.

PREHISTORY OF THE LOWER PECOS RIVER REGION: AN OVERVIEW

The Lower Pecos River Region has one of the best documented records of continuous human occupation in the New World. This area, surrounding the confluence of the Pecos and Devil's rivers with the Rio Grande, can also claim a diverse and complex body of Native American rock art, painted or carved into the hard limestone walls of canyons and shelters. The boundaries of the region are most often defined by the extent of the distinctive Pecos River style pictographs and by a commonality in items found in dry shelter deposits. In terms of modern political divisions, the region includes Val Verde County and adjacent areas of Terrell, Crockett and Sutton counties, Texas and part of Northern Mexico bordering the Rio Grande. The lack of archeological work immediately south of the Rio Grande inhibits a clear definition of the southern boundary of the Lower Pecos cultural area.

By far the majority of Lower Pecos archeological studies were sponsored by the National Park Service in anticipation of the construction of Lake Amistad. These and other investigations, outside the area of the reservoir, suggest that the people of the Lower Pecos region led a common way of life over a long span of prehistory. The extent of their shared traditions and their interaction with surrounding regions probably expanded and contracted under the influence of environmental conditions and population density. Thus, the boundaries of the cultural area shown in Figure 2 can not be rigidly drawn as they were not a constant throughout prehistory.

The Environmental Setting

One measure of civilization is the degree to which humankind devises buffers between itself and the environment. In modern society, technology moderates the effect of climate, creates artificial environments through light, heat and air conditioning, and accelerates food production to the point where the everyday citizen is remote from nature. Prehistoric hunters and gatherers, such as those that inhabited the Lower Pecos throughout prehistory, present the opposite extreme. Their relationship to their habitat was more intimate. Rather than drastically modifying their physical world, the people adapted to the available resources and much of this adaptation was through cultural means. Thus, it seems only reasonable to assume that environment played a significant role in influencing the course of cultural development.

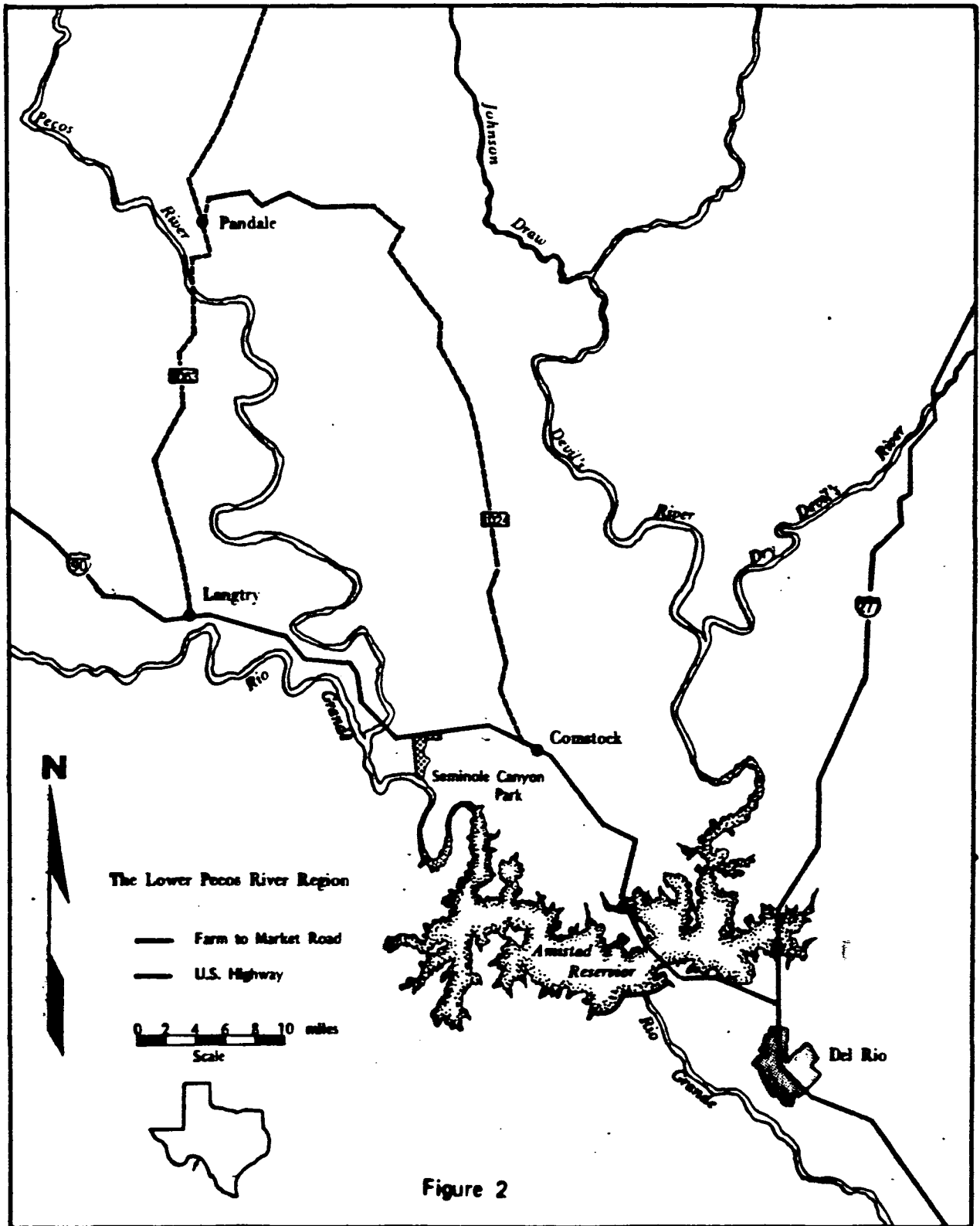


Figure 2

The landscape of the Lower Pecos region is rolling hills and rocky flats dissected by drainways which become increasingly deep and entrenched as they reach the three major rivers, the Pecos, Devils' and Rio Grande. To the casual visitor, these barren hillsides and steep canyons seem a bleak and inhospitable habitat. However, the semi-desert of today is in part a result of a century of overgrazing by domestic livestock which accelerated the effects of an increasingly drier climate. The past environment, reconstructed from plant and pollen studies, animal remains, flood sequences, and the debris of human populations, was one of deeper soils, more effective moisture, and more plentiful native foodstuffs. Within the living memory of long-time ranchers, erosion has claimed the sediment cover, floods have eradicated stands of oak and walnut, and thorny shrubs, unpalatable to livestock, have expanded their hold on the remnant rocky soils. In historic times, since natural conditions have been recorded, climate has vacillated, alternating between wet and dry years and decades. Century-long cycles similarly occurred throughout prehistory, affecting the everyday life of the aboriginal population and influencing the development of their culture.

The processes which were to influence the lifeways of the Lower Pecos inhabitants began during the Cretaceous Period, 100 million years ago, when the region lay beneath the sea. Particles drifting to the ocean floor intermingled with the shells and skeletons of marine life to form the massive beds of limestone now exposed. Changes in the depth and composition of the seas created a layered effect, visible as distinct strata. Long after the land uplifted and the water receded, erosion played its role, reducing the youngest limestone formations to remnants now seen as rolling hills. Wind, water and temperature extremes hollowed caverns along the fault lines and bedding planes exposed by the downcutting of rivers and intermittent streams. Millions of years later, these caverns became the housing of many of the Lower Pecos people.

Four of the limestone formations variously exposed throughout the region were each used in some way by man. The youngest formation, the Boquillas Flags, is a laminated shale-like limestone recognizable in road and railroad cuts by its bright red, yellow and white color. The tendency of this formation to split into tabular slabs attracted commercial exploitation. Quarrying of flagstones in the late nineteenth and early twentieth century has since become largely uneconomical but the old scars are apparent in many locations.

The second formation, the Buda limestone, is topographically expressed as rounded hills of a dull brown rock distinguished by numerous small fossils. This formation is of great help to the archeologist because the high iron content reacts to heat, turning the burned rocks of prehistoric hearths a distinctive red. Beneath the Buda formation, on caliche flats that border those domed outcrops, lies the Grayson Formation or Del Rio clay. These flat, soft surfaces were prime campgrounds in prehistory.

The oldest formation, variously called the Salmon Peak, Devils River or Georgetown, is the grey, hard-surfaced limestone exposed above and along the rivers and canyons. In addition to the excellent housing provided by the many rock shelters hollowed from this formation, the hard surface was to become the preferred canvas for prehistoric artists who created a large and diverse assemblage of rock art.

A final geological resource exploited by prehistoric man is the plentiful raw material for stone tool manufacture. Prime sources are chert nodules eroding from the parent limestone, redeposited river gravels and ancient terrace gravels now exposed on degrading upland surfaces. The abundance of this raw material would encourage extensive use, allowing for the discard of worn or broken tools, more easily replaced than repaired.

In terms of the slow clock of geologic time, little has changed during mankind's tenure in the Lower Pecos. Other environmental factors, however, did change, forcing the human population to adapt to an increasingly stringent habitat. At the end of the last Ice Age, when the human record in this area begins, the Lower Pecos was a parkland savannah. Expanses of grassland supported large game animals such as elephant, bison, camel and horse. These species disappeared as part of the mass extinction that took place throughout the continent at this time. The reasons for this widespread eradication are poorly defined but in the Lower Pecos specifically it seems a trend to aridity, which continues to today, may have reduced the food resources in their natural habitat until it could no longer support a breeding population.

By 9000 years ago, under the pressures of increasingly less moisture, the hardy plants that characterize the region today made their appearance in human diet. The preservation of many normally perishable items in the dry shelter deposits has provided an uncommon opportunity to inventory the plant resources exploited by the Archaic people. Prickly pear, lechuguilla, and eventually sotol became the mainstay of life. Smaller game such as deer, rabbits and rodents predominate in the shelter deposits. Contrary to popular opinion, in many ways the food resources of a semi-desert are more reliable than those of the forest or plains. The hardy desert succulents survive as a dependable resource and the variety in plants and animals provide alternatives if one source fails. The reconstruction of human diet from coprolites, dried human feces found in latrine deposits in the dry shelters, clearly indicates that the Lower Pecos Archaic population consumed every available edible item, ranging from grasshoppers to deer but the heaviest component was plant foods. The nutritional deficiencies in this high bulk, low protein diet are apparent in the stress indicators found in human skeletal material.

Perhaps the single most influential environmental factor affecting human settlement in semi-arid lands such as the Lower Pecos is water. Three permanent rivers, the Devils', the Pecos and the Rio Grande, traverse the region, providing a constant source of water.

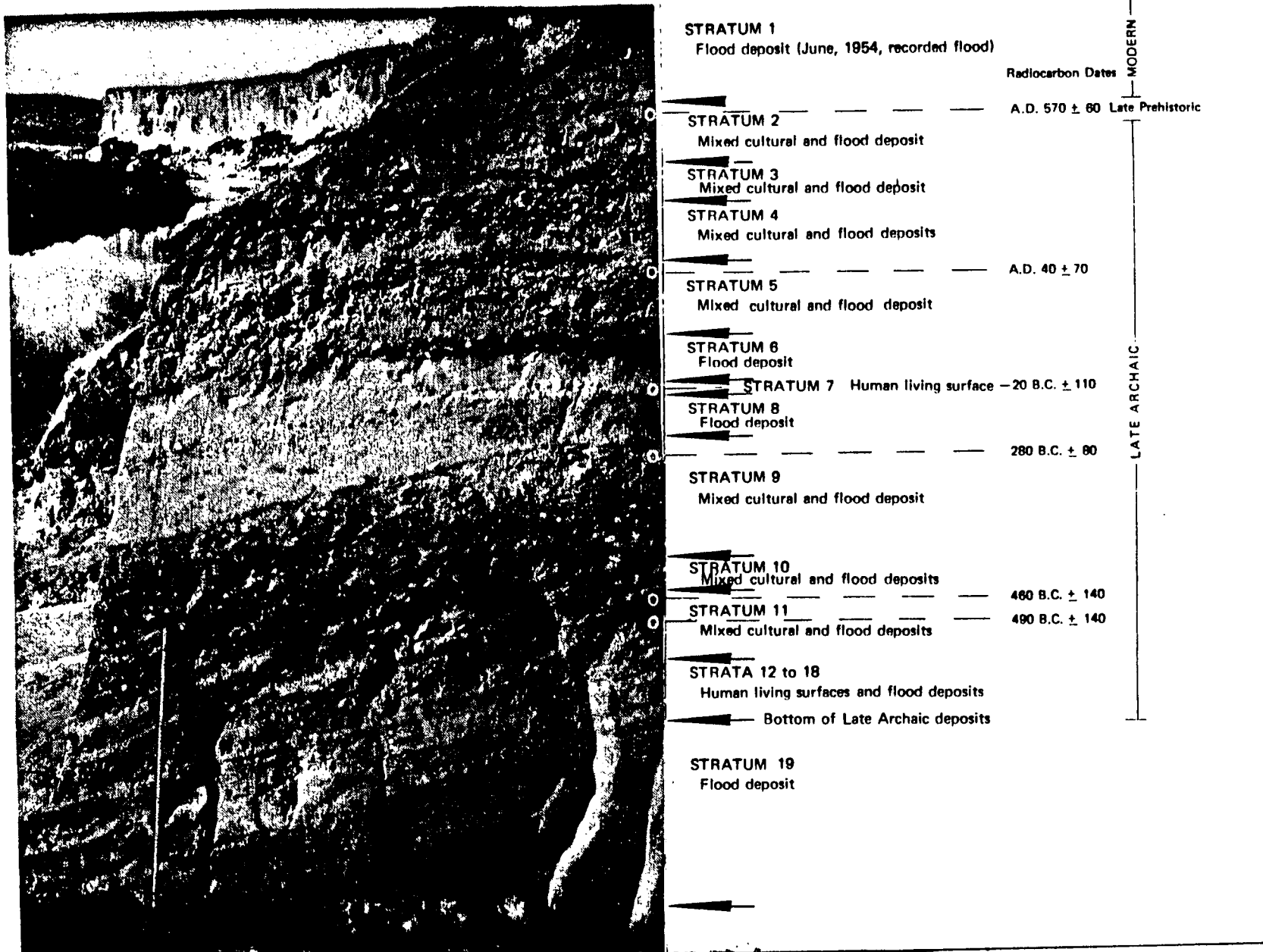


Figure 3. Arenosa Shelter where excavations exposed alternating strata left by human occupation and recurrent flooding. This profile covers the sequence from 1954 to 500 B.C.

Springs, such as San Felipe, Dolan, and Goodenough, attracted prehistoric settlement. Intermittent runoff was retained in tinajas, concavities in the bedrock. Seep springs, now often dry, flowed episodically inside shelters and from the canyon walls. The variability in these secondary sources would have affected the season and duration of their exploitation.

The trend to aridity also resulted in a reduction in effective moisture, that retained in the soils and by vegetative cover. A cycle of lowered rainfall causes a reduction in ground cover, exposing the soils to accelerated erosion, and reducing the capacity to retain moisture when the rains return. The modern pattern of rainfall reaches its maximum in the spring, only to lose much of its beneficial effect through high evaporation. Vacillations in the drying trend throughout the Archaic Period are reflected in the types of animal bone recovered from archeological deposits, and by the flood record preserved at one site, Arenosa Shelter, now under Lake Amistad. This remarkable rock shelter was intermittently occupied between flood stages of the Pecos River. The cultural materials deposited during low water flow were sealed by sterile sediments left by overbank flooding of the Pecos River, creating alternating strata for over 9000 years. The stratigraphy of the upper levels is illustrated in Figure 3. The most massive flood, the result of Hurricane Alice in 1954, filled the shelter to the top. When excavated under the National Park Service salvage project, this stratified site provided a record of human and natural deposits, clearly separated in time.

A significant break in the drying trend about 3000 years ago is reflected by the reappearance of bison bone and the increase in grass pollen found in some shelter deposits. Although this more clement climate was apparently short-lived, similar conditions may have again prevailed at the time of first European contact and settlement. A few very late pictographs showing bison, tangential references in Spanish documents, and the accounts of the first settlers in the region hint at a much more mesic environment than is currently in effect.

In summary, a composite of the floral, faunal and flood records throughout prehistory permits a general reconstruction of the Lower Pecos paleoenvironmental sequence over the last 10,000 years. At the end of the last Ice Age, the vegetation of the region was parkland savannah, grasslands dotted with trees and bushes. This habitat in turn supported bison, camel, horse and elephant. By 9000 years ago, what must have been a severe period of aridity, marked by intense erosion, forced the populace to adapt to desert plants and animals. Although the drying trend may have vacillated somewhat over the next 6000 years, the first major documented return to moister conditions began about 3000 years ago. This mesic interlude may have lasted only a short time, perhaps only a few centuries, but it permitted the grasslands to recolonize the region. A return to aridity forced the retreat of the grasslands and the herd animals they supported but the precise timing of this cycle has yet to be determined. The semi-desert conditions prevailed until some time shortly before European contact and colonization when moister, cooler conditions

transformed the American west into the grasslands of frontier history. Extreme droughts are recorded in Northern Mexico from 1640-1645 and in the Lower Pecos during the late 1800's but short-term climatic fluctuations such as these are usually not discernible in the archeological record after the passage of time.

Hardy as the desert may seem, the flora and fauna adapted to these conditions are in delicate balance. The fragile ecosystem evolved over millenia as plant, animal and man mutually adapted to a changing habitat. Following fast upon the droughts of the 1880s, the introduction of domestic livestock further reduced the vegetative cover, accelerating runoff and eroding the sparse soils. Only in relic stands of large oak trees and isolated protected pockets along the canyons are remnants of the prehistoric environment preserved.

The History of Archeological Work in the Lower Pecos

When the first surveyors mapped the area surrounding the confluence of the Pecos River and the Rio Grande, they named the region Painted Caves. The first railroad station erected along the route of the Southern Pacific Railroad in 1881 bears the same name. The deep, dry shelter deposits attracted several formal expeditions in the 1930s, largely sponsored by museums and academic institutions to garner specimens for their collections. The Smithsonian Institution of Washington, D.C., the Witte Museum of San Antonio, Texas Technological University of Lubbock, and the University of Texas all carried out major excavations during this decade. Many of the research techniques used today had not been developed so the material objects collected by these projects have limited utility in the reconstruction of prehistoric lifeways. Even at that early date, vandalism was so severe that many deep rock shelters were considered too destroyed to yield meaningful information.

Fortunately for today's researchers, two most remarkable pioneers in rock art studies began their work in the 1930s. Forrest Kirkland, a commercial artist and draftsman, devoted much of his leisure time to the self-appointed task of copying Texas rock art in measured water colors. His work, curated at the Texas Memorial Museum, University of Texas at Austin, is often all that remains of once spectacular pictograph sites. A.T. Jackson, an archeologist from the University of Texas, began compiling his book "The Picture-Writing of Texas Indians", describing, photographing, drawing and interpreting pictograph and petroglyph sites all over Texas. His records, on file at the Texas Archeological Research Laboratory in Austin, and Kirkland's water colors provide the major basis for studies of deterioration and condition of rock art sites.

World War II brought an end to this phase of archeological research in the Lower Pecos. Only sporadic investigations continued over the next decades. Then, in the late 1950s, in anticipation of the construction of Lake Amistad (then Diablo Reservoir), the National Park Service launched an intensive, integrated cultural resource

project, intended to salvage as much information as possible in the area to be inundated by the lake. A research unit, the Texas Archeological Salvage Project, was formed at the University of Texas specifically to carry out this and other salvage projects. The first step was to survey the district to locate, record and assess the most important sites. The next phase was a combination of limited testing to determine the potential of some of these sites for full excavation and intensive excavation of others.

The first excavations, at Centipede and Damp caves and the Devil's Mouth site, were oriented toward establishing a basic chronology, a framework that could be used throughout the duration of the salvage program. Limited excavations, carried out at several sites, were used to select the most promising sites for more intensive study. Large-scale excavations then continued at the Devil's Mouth and began at Bonfire Shelter, Eagle Cave, Parida Cave, Conejo Shelter and the Devils Rockshelter. The last site excavated before the waters rose was Arenosa Shelter, completed in 1969.

Running concurrently with these excavations, an accelerated study of pictographs in the Amistad District was carried out by art historians, David Gebhard and Terence Grieder. A relative chronology of the rock art, based on stylistic change and superimposition of figures, resulted from Gebhard's work. Survey of areas outside the Amistad Reservoir boundaries to locate and recommend pictographs and petroglyphs for more thorough documentation continued under the auspices of the Texas Memorial Museum and the Texas Historical Commission.

In 1967, the University of Texas Press published a compendium of Kirkland's water colors with a thorough commentary and analysis by W.W. Newcomb, Jr. He presented a typology and chronology of Lower Pecos pictograph styles similar, but not identical, to Gebhard's. This book remains the most complete and detailed presentation of Texas rock art still available.

Under the sponsorship of the National Science Foundation, a preliminary study of the paleoenvironment of the Amistad District was assembled by DeeAnn Story of the University of Texas at Austin and Vaughn M. Bryant, Jr., now of Texas A & M University. Bryant's doctoral dissertation at the University of Texas was the basis for the climatic sequence in the region.

Since the cessation of the Amistad salvage program, archeological investigations have largely resulted from the efforts of academic institutions, funded by Federal, State and private grants. National Science Foundation grants enabled Texas A&M University to carry out an exhaustive ecological study of dry shelter deposits at Hinds Cave. Much of the generalized reconstruction of human dietary patterns during the Archaic Period was produced by their analysis of pollen and plant parts, human feces, and animal remains from this site. The University of Texas at San Antonio is involved in on-going excavations and analyses at Baker Cave providing essential data on Early Archaic

subsistence. In 1980, the University of Texas at Austin inventoried and assessed the archeological and historical resources in the newly formed Seminole Canyon State Historical Park for the Texas Parks and Wildlife Department. UT-Austin then returned to Bonfire Shelter, the only Paleoindian kill site known in the region, to excavate the deepest deposits. In 1984, several skeletons of Early Archaic age and a cremation were removed from a sinkhole in Seminole Canyon State Historical Park by UT-Austin for the Texas Parks and Wildlife Department.

These many years of archeological study have provided a chronological framework, permitted a reconstruction of the paleoenvironment, established the technological and subsistence patterns of prehistory, and defined rock art styles and sequences. Readers of the following summary chapters will realize that although Lower Pecos prehistory is still imperfectly known, one fact is indisputable. Under the pressures of natural decay, increasing urbanism and exposure to vandals, this cultural heritage is dwindling at a time when public support for archeological study has little priority.

Prehistory in the Lower Pecos River Region: An Overview

The long, continuous occupation of the Lower Pecos River Region has been reconstructed from the information accumulated over 50 years of formal archeological study. Native American occupation of the region began before 8000 B.C. and continued in varying forms until comparatively late in historic times, the end of the nineteenth century. A considerable amount is known about the technology and diet of the prehistoric hunters and gatherers of the Lower Pecos because the refuse from these activities forms a significant portion of the rock shelter deposits. Factors that motivated the selection of certain localities for open air camp sites or a preference for one rock shelter above another can be inferred from the distribution of known sites across the landscape. The social rules that made for an orderly society are only assumable by analogy to known cultures who functioned at the hunter-gatherer level in similar environments. The notable rock art for which the region is justly famous affords a view into the aesthetic or ideological world of the aborigines but the exact translation of their symbols into our frame of reference is probably beyond our reach. Although the art conveys considerable detail about prehistoric lifeways, it is doubtful if modern man can ever completely understand the supernatural world of the aboriginal mind.

Other questions about Lower Pecos prehistory are also no longer answerable. The tribal identity of the aboriginal populations, or what they called themselves, is unknown. The common name given them in the popular press, Pecos Man, is simply a geographical referant. Based on similarities in lifeways and material culture, the Lower Pecos Archaic people are often classed as Coahuiltecan, implying only that they probably belonged to the same language group as other

hunter-gatherers of South Texas and Northeastern Mexico. Not until the influx of Plains Indians, such as the Apache and Comanche, in historic times can the tribes of the Lower Pecos be named.

Similarly, although three major prehistoric pictograph styles have been defined and several minor styles proposed, it is difficult to attribute them to a specific group. The styles can be roughly arranged in chronological order beginning with the elaborate, polychrome Pecos River style. The miniature Red Linear pictographs are probably slightly later but their span may overlap with the older style. The latest prehistoric style, the Red Monochrome, can be dated to sometime after A.D. 600. Some historic pictographs are assumed to be Apache or Comanche but many miscellaneous panels can not be assigned to a defined style nor to even the broadest time range.

For convenience, the long span of prehistory has been divided into four broad time periods. Each is characterized by a variety of traits ranging from economics to art styles but projectile point styles are often considered the hallmark of the period. Typical examples of some of the more common Lower Pecos point styles are illustrated in Figure 5 and their approximate age given in Figure 4. The beginning and ending dates are arbitrary in the sense that the transition from one stage to the next was often slow and gradual. Thus, the duration of time shown, rounded to the nearest century, should be considered as approximating the span of each period.

The Paleoindian occupation (before 7000 B.C.) is set in the habitat as it was at the end of the Pleistocene when large game animals, now extinct, still roamed the Lower Pecos region. As the climate became more arid, the human populations adapted to a semi-desert environment, developing the cultural traits characteristic of the Archaic Period (7000 B.C. to A.D. 600). Sometime around A.D. 600, changes such as the adoption of the bow and arrow signal the advent of the Late Prehistoric Period (A.D. 600 to 1600). The coming of the first Europeans at the close of the sixteenth century marks the end of prehistory and the beginning of the Historic Period. The Indian presence in the Lower Pecos ceases to be significant after 1880.

The Earliest Population: The Paleoindians

Tentative evidence for the earliest human occupation in the region is in the form of scattered and burned bones, fragments of now-extinct animals such as camel, horse and elephant, found buried at two sites, 41VV162A and Bonfire Shelter, 41VV218. Both sites were excavated as part of the National Park Service program of study. No formal tools made of flint or bone and no features, such as hearths or pits, have been detected with these skeletal fragments. The burning of the bones at 41VV162A and the cut marks and breakage pattern on specimens at Bonfire Shelter suggest that these animals were butchered and brought into these shelters by man. Radiocarbon assays of charcoal from 41VV162A range from 12,000 to 14,000 years in age and it

Time Periods in Lower Pecos Prehistory

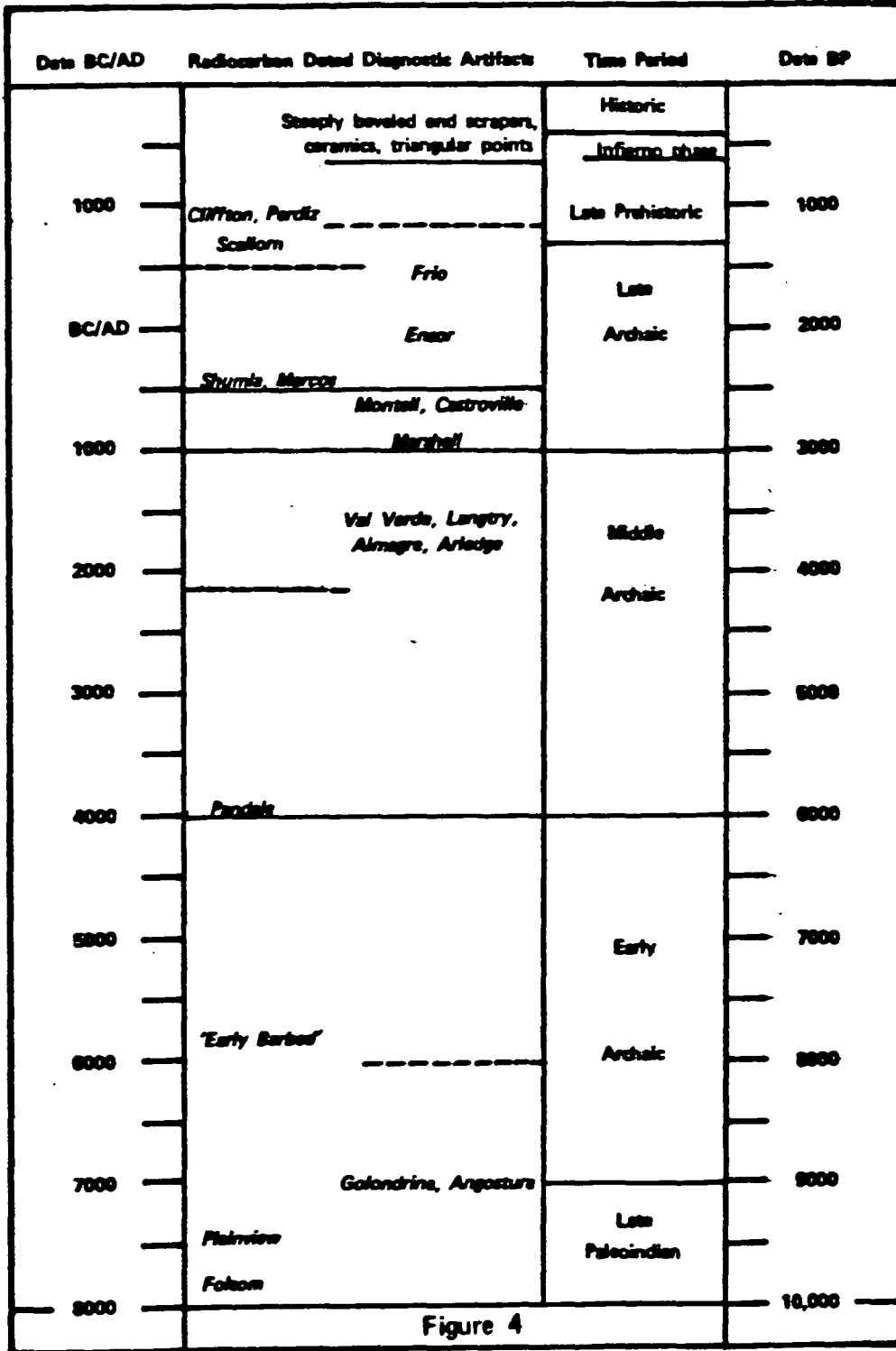


Figure 4

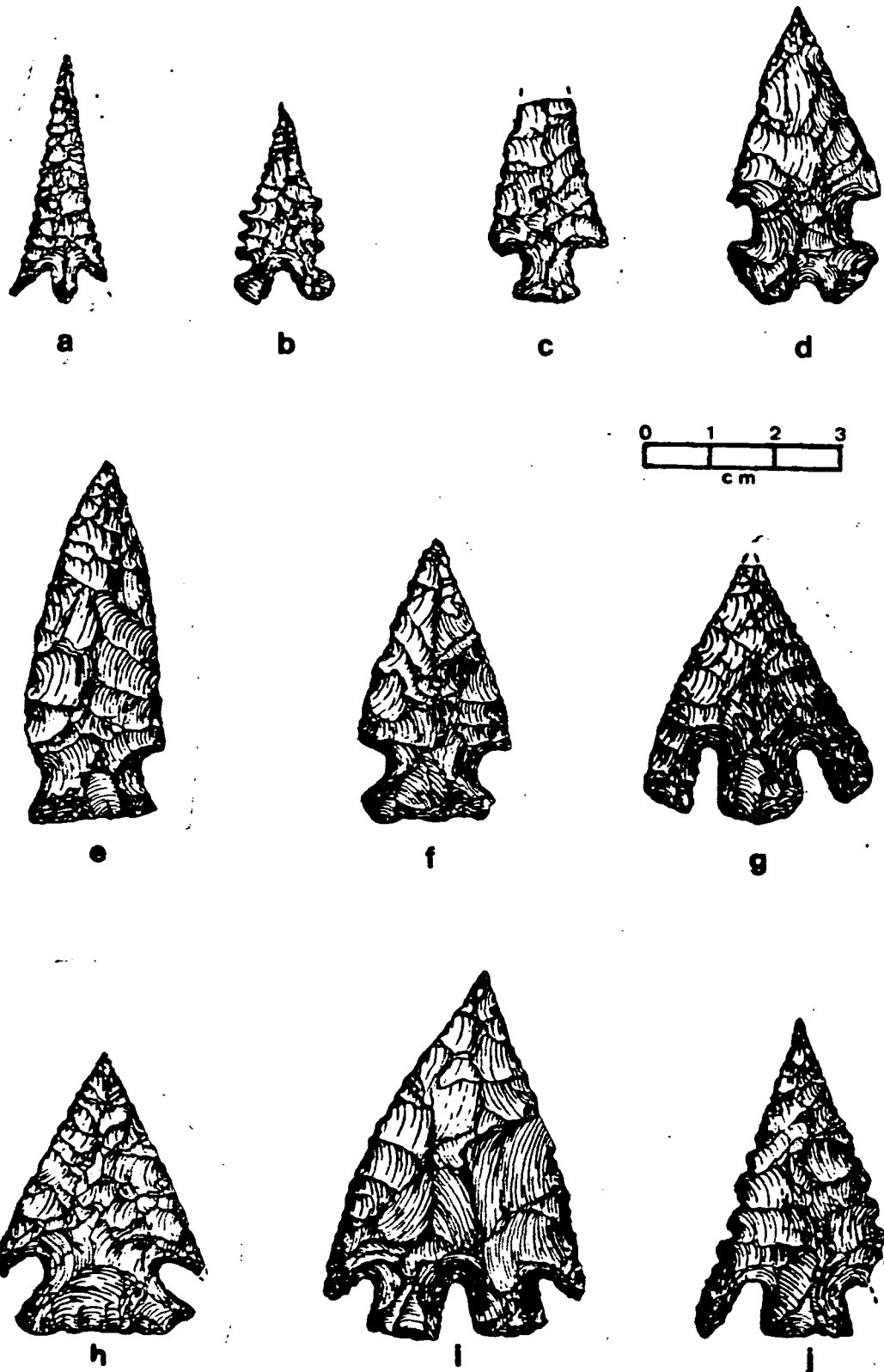


Figure 5. Examples of some of the projectile point styles used as time-markers in the Lower Pecos, ordered from latest in upper left to oldest at lower right. a) Perdiz b) Toyah c) Scallorn d) Frio e-f) Ensor g) Shumla h) Marcos i) Montell j) Arledge

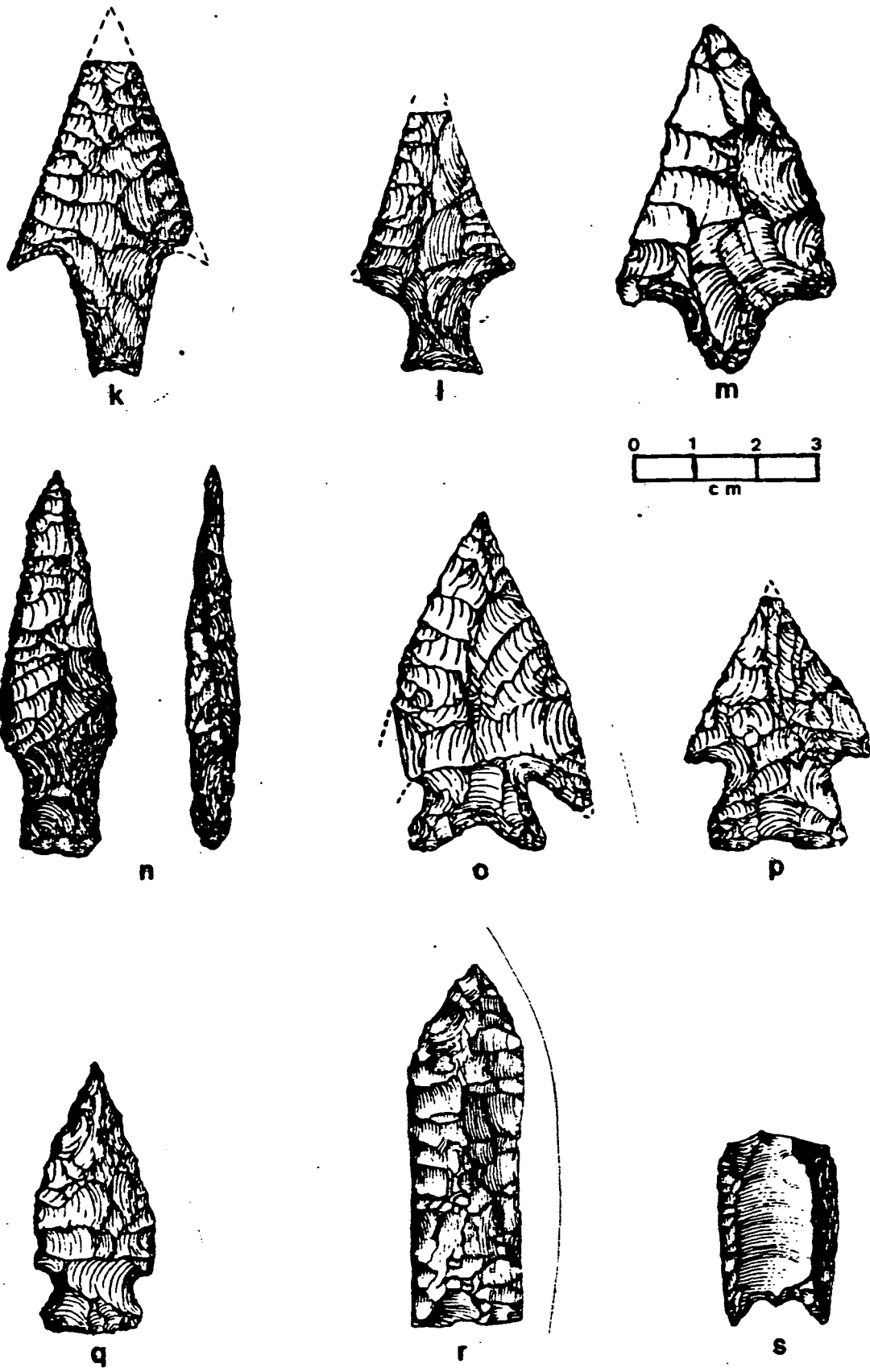


Figure 5 (cont). k) Langtry l) Val Verde m) Almagre n) Pandale o-q) Early Archaic series
 r) Plainview s) Folsom Specimens k-q are from Arenosa Shelter, r-s from Bonfire Shelter

is probable that the as-yet undated lowest bone deposits at Bonfire Shelter are equally as old.

More definitive is a second bone deposit at Bonfire Shelter. This bone bed is composed of the remains of an estimated 120 bison of the extinct species Bison antiquus who were stampeded over the cliff, falling to their death on the rocks below. This site is ideally situated for mass slaughter and for the preservation of the remains of the animals who tumbled over the cliff above, struck the massive roof fall below, and rolled back into the shelter where they could be butchered under the protecting overhang (Figure 6). Layering within this bone mass suggests at least three separate drives or stampedes over the cliff above took place within a relatively short period of time. Considering that this extinct form of bison was about one-third again as large as the modern species, this method of hunting was certainly effective. Butchering of the carcasses and the recovery of the tools used demonstrates that the drives were the work of humans and not accidents of nature. Among the stone artifacts are the distinctive Folsom and Plainview dart points, time-markers of the Paleoindian Period. Radiocarbon dating of charcoal from small hearths in this level places these events at about 10,000 years ago. Lesser amounts of the extinct species bison bone were recovered from the lowest level of Arenosa Shelter and the intermediate zone at 41VV162A, both approximately the same age as the Bonfire bone bed.

Although Bonfire Shelter is the only mass kill site known this far south of the Southern Plains, some information on the lifeways of the Paleoindian in the Lower Pecos can be gathered from this 10,000 year old bone level. The economy obviously relied to some degree upon hunting of big game although undoubtedly this highly mobile food supply was supplemented by smaller game and plant foods. Human groups whose economy relies on following migratory herds generally develop cooperative hunting techniques. Although a bison stampede may be easy to start, it is difficult to control unless a prearranged plan is followed and each hunter plays his role correctly. Based on the assumption that hunting is primarily a male skill, handed down from father to son, the big-game hunter is seen as a member of a small band, related to the other members through the male line of descent. Whether this pattern can be applied to the Lower Pecos Paleoindian is as difficult to answer as the second question, whether these people were permanent residents of the region or merely transitory passersby. It is often thought that the scarcity of sites from this time period indicates a sparse population or one that passed through the region leaving few remains at their camp sites. Nomadic hunters, constantly on the move in pursuit of migratory herds, would leave few perceptible traces behind. In addition, the great length of time that has passed since these people lived has to be taken into account. The environmental changes discussed earlier would have worked to eliminate much of the evidence for their occupation of the region. Finding sites of this stage in prehistory may often be more an accident of preservation than a reflection of the intensity of use. However, the big game hunting strategy and the Folsom projectile point are similar to those found across great expanses of North America at this time



Figure 6. Bonfire Shelter during the 1983 excavations. Bison driven over the cliff tumbled down the notch at right. The 10,000 year old Bone Bed 2, composed of the skeletal remains of now-extinct bison, is exposed in the bottom of an excavation pit.

period. Thus, the Lower Pecos economy may have been part of a widespread tradition of exploiting the soon-to-be extinct large game animals of the last Ice Age.

The Archaic:
Classic Foragers in a Changing Environment

By about 9000 years ago, a different way of life is reflected in cultural deposits left by the Lower Pecos people. Although the characteristic tools, such as Golondrina and Angostura dart points, are still called Late Paleoindian by many, the term Pre-Archaic has been suggested by some researchers as a more apt description of the economic adaptation to the changing environment. Reconstruction of past environments, derived from the analyses of pollen and other plant remains, animal bones, flood-deposits, and human excrement, indicates that a warming, drying trend began at the end of the Pleistocene and continued through time. Interrupted only cyclically by wetter periods, the increasing aridity altered the natural resources and influenced the lifeways of the Lower Pecos inhabitants. At present, it is difficult to say if the local population adapted to changing conditions or whether they were replaced by people conditioned to the increasing aridity.

Projectile points characteristic of this transitional time, such as Golondrina, are similar to those of the Paleoindian, but they are found in contexts little different from those of the later Archaic Period. Sites such as the Devils Mouth and Baker Cave provide radiocarbon assays and tool types indicative of a 9000 year old occupation but the dietary emphasis is on small game and vegetal foods. One hearth excavated in Baker Cave, and dated to this time period by both radiocarbon assays and Golondrina projectile points, contained fragments of 12 species of mammals, 23 species of reptiles, 6 species of fish, and 16 different types of plants, 11 of which are edible. This reliance on the widely varied resources of a semi-desert environment was to characterize the subsistence pattern of the Lower Pecos throughout the remainder of prehistory.

The long span of the Archaic Period is often described as a stable adaptation to the varied and variable resources of a semi-desert environment. Stability, when discussed in the archeological sense, takes on a very broad meaning. Many of the short-term intermittent stresses which affected everyday life are simply not discernible in the physical remains left after thousands of years. Secondly, much of the interpretation of past lifeways must be based on the more permanent artifacts, those that survive in the refuse dumps, burials, and living areas of prehistoric people. The abstract concepts that governed attitudes toward such social practices as marriage, inheritance, line of descent and religion can only be inferred from analogy to living or recorded groups. Thus, stability in the Lower Pecos Archaic is a generality most appropriately applied to subsistence, the basis of human life, and technology, the means by which subsistence is guaranteed.

Two of the defined pictograph styles, the Pecos River and the Red Linear, are of Archaic age. Both are products of a culture economically based on hunting and gathering but the two styles are markedly different in form and content. Because much of the interpretation of preliterate art depends upon placing it within the context of the culture which produced it, a more detailed discussion of the various pictograph styles has been reserved for a later section.

The 7600 years of the Archaic Period are divided into three subperiods - Early (7000 to 4000 B.C.), Middle (4000 to 1000 B.C.) and Late (1000 B.C. to A.D. 600). Although these blocks of time are defined by minor variations in some cultural traits, much of the material culture and basic economy remained basically similar.

Housing was provided by the numerous rock shelters common in this region. The deep, ashy deposits, massive accumulations of burned rock, and the blackened ceilings of many shelters result from generations of fires. Discarding burned rock and other garbage by throwing it out of the shelter mouth resulted in the talus cone, or V-shaped rock slides which are so visible a trademark of the inhabited shelter. Some evidence suggests partitions may have been erected to screen parts of the shelter but domestic life must have been largely communal. Grass-lined pits found in some sites may have been sleeping nests, perhaps made to protect infants from the all-pervading dust and dirt. The dead were often buried in the shelter deposits left by the living.

Open air sites of the Archaic Period are burned rock accumulations or middens on the upland flats and gentler slopes of the canyons. These mounds of burned limestone are the debris from earth ovens where desert plants were baked. A second type of Archaic upland site is hearth fields where numerous smaller, sparser rock hearths fan out across the caliche flats. The hearth fields usually contain much more debris from stone tool manufacture and many more utilitarian implements than the burned rock mound sites, suggesting they were open living areas where many varied activities took place. No remains of structures or temporary shelters have been found on these sites but it is possible that some sort of rudimentary lean-tos were built. Perishable building materials would not survive in these exposed locations.

By far the majority of information on Archaic lifeways comes from the dry shelter deposits where normally biodegradable materials were preserved. Extensive study of seeds, leaves, pollen, bone and the contents of human excrement reveals a most varied and eclectic diet. The staple plant foods were prickly pear, lecheguilla and sotol, augmented by seasonally available nuts, seeds, fruit and flowers. Although deer and other large mammals were probably prized, the bulk of the meat was supplied by rodents, rabbits, snakes, lizards and other small animals. Birds, fish, turtle and insects were eaten. It is noteworthy that many of the protein sources were trapped, netted or scavenged rather than hunted.



Figure 7. Examples of artifacts preserved in the dry shelter deposits of the Lower Pecos
a) sandals with ties intact b) bone awls, the largest is approximately 2½ in. long
c) a curved, grooved fending or rabbit stick about 15 in. long d) fire drill and hearth
stick 18 in. long e) 6 in. long fragment of a probable atlatl

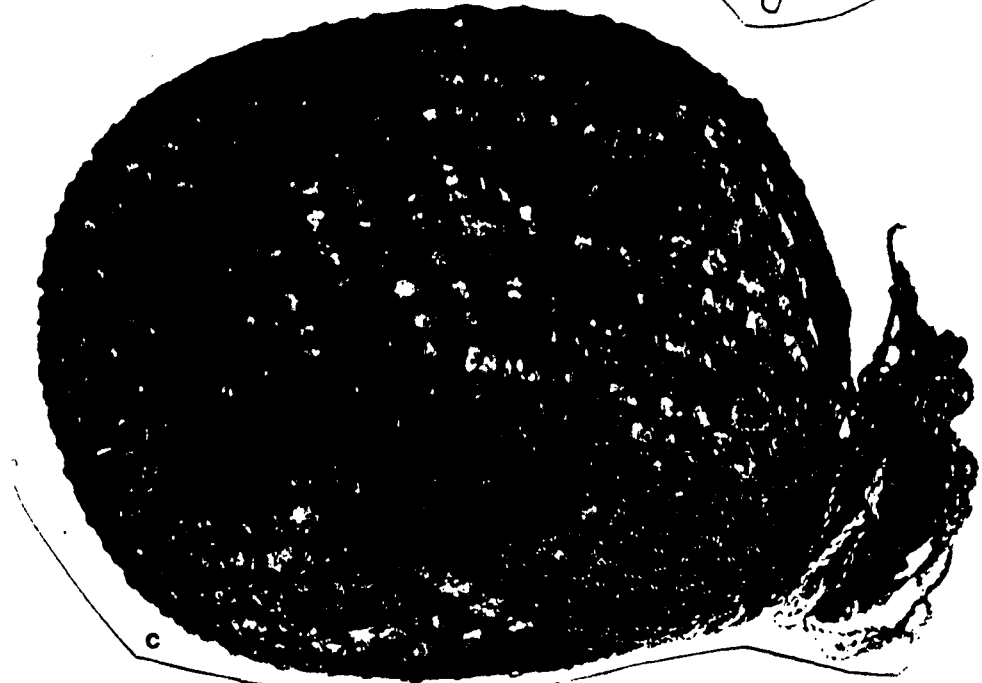
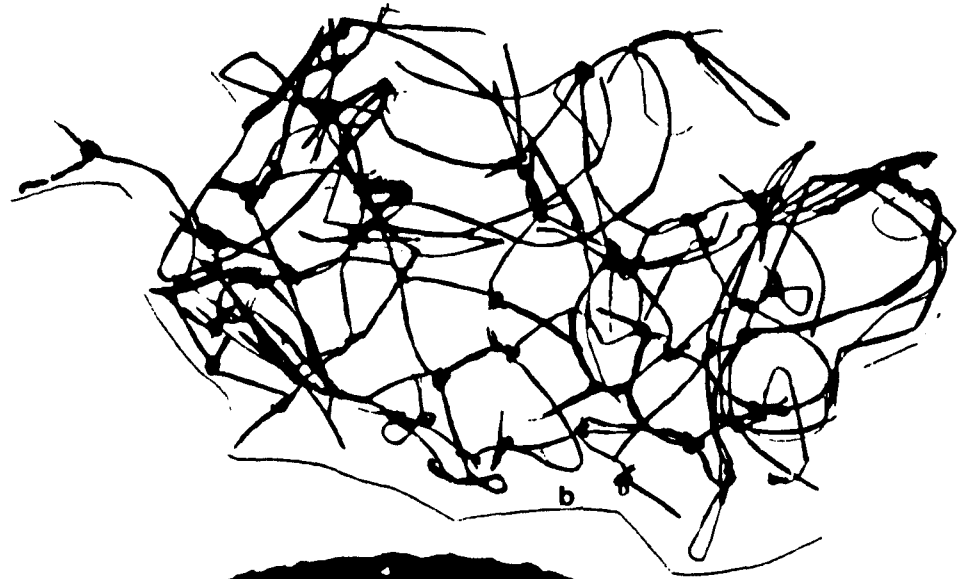


Figure 8. Archaic basketry and netting a) stacked baskets b) gross net c) mano in a net bag

The spear thrower, or atlatl, was the most powerful weapon. Used to add force to propelling a dart or lance, this artifact was not replaced by the bow and arrow until Late Prehistoric times, after A.D. 600. The presence of atlatls in both the Pecos River and in Red Linear art panels is the major basis for their broad assignment to the Archaic Period.

The large chipped stone projectile points, or dart points, vary in style throughout the Archaic but their function remained much the same. Other stone tools included scrapers and gouges used in hide and plant processing. Knives, naturally serrated by the flaking technique, were employed in butchering, wood cutting, and plant harvesting. Drills for perforating bones, shell, stone and leather were finely flaked from flint. The sharp edges of waste flakes, debris from the manufacture of formal tools, were often expediently used for the task at hand. Smooth, fist-sized rocks, or manos, served as grinding implements to pound nuts, tubers and seeds into a type of flour and powder naturally colored pebbles into pigment for paints. Mortars ranged from the enlargement of natural concavities in the bedrock to slabs of more portable limestone, or metates. Often the reuse of bedrock mortars deepened these pits beyond the reach of the normal person. It has been suggested that these extremely deep holes were used to store water and food or to ferment beverages.

Although Pecos River style art seems to show elaborate costumes, only a few items of clothing have been identified in shelter deposits. Rabbit skin robes, woven vegetable fiber loin coverings, fringed skirts and sandals made of wooden frames padded with fiber make up the entire known wardrobe. Plaited or twilled baskets, nets, matting and cordage were manufactured from fibrous plants. Pouches made of split prickly pear may have been carrying containers. No water bags or flasks have been recovered but it is possible that containers were made of prickly pear pads, animal internal organs, leather, or tightly woven baskets. Wooden implements include the atlatl, fending or rabbit sticks, snares and traps, digging sticks and fire tongs, drills and hearths. A wooden mortar and pestle, cached in a rock shelter near Pandale, had been used most recently to grind prickly pear seeds; some were stuck in cracks in the mortar. A second similar mortar from near Dryden was radiocarbon dated to about A.D. 900. Both these specimens were of pinon pine, a tree no longer common to the Lower Pecos, suggesting they may have been hidden because of their rarity and value. Bone and antler were fashioned into ornamental beads, pressure flakers for stone tool manufacture, awls for weaving or sewing and other tools. Perforated mussel and snail shell, bone, wood and stone beads, deer hoof and mussel shell rattles and long strings of rattlesnake vertebrae may have been worn as jewelry.

The pictographs, the most spectacular of Archaic age art forms, are not the only aesthetic expressions found in the shelters. Painted pebbles and clay figurines, technically called "art mobileur" or portable art, were produced over a long time span. Water-worn smooth rocks, usually painted on both sides with black pigment, bear designs ranging from abstract geometrics to reproductions of the human face



Figure 9. Snail shell beads found still strung on a grass cord, during the 1932 University of Texas excavations at Fate Bell Shelter, Seminole Canyon State Park.

and body (Figure 10). There are some indications that styles changed over time but detailed study of the sequence has been neglected in favor of the mural art. The most interesting proposition is that painted pebbles were amulets or charms, possibly used by the women as ritual objects.

Clay figurines are rarer but these simple lumps of pinched or shaped unfired clay have been found at several sites. Some of the fragments have conical appendages, perhaps breasts, and only those female figures have incised or punctated designs. The object seems to have been to reproduce the human body; rarely is the head shown. These figurines have been interpreted as ritual paraphernalia, perhaps used in fertility rites, witchcraft, or curing ceremonies as a substitute for the human subject.

With the possible exception of the pictographs, the material culture of the Archaic Period was simple and expedient. The raw material for the most common items, stone tools, was so abundant that a suitable implement could be easily fashioned, used and discarded. The wooden and bone tools were not only more perishable but the raw material was less easily acquired and required more labor to convert to a suitable form. The mobile lifestyle inhibited the size of a tool kit to items easily carried or difficult to replace. Although simple by our standards, this technological level was highly adaptive in that it was sufficient to maintain the Archaic population for thousands of

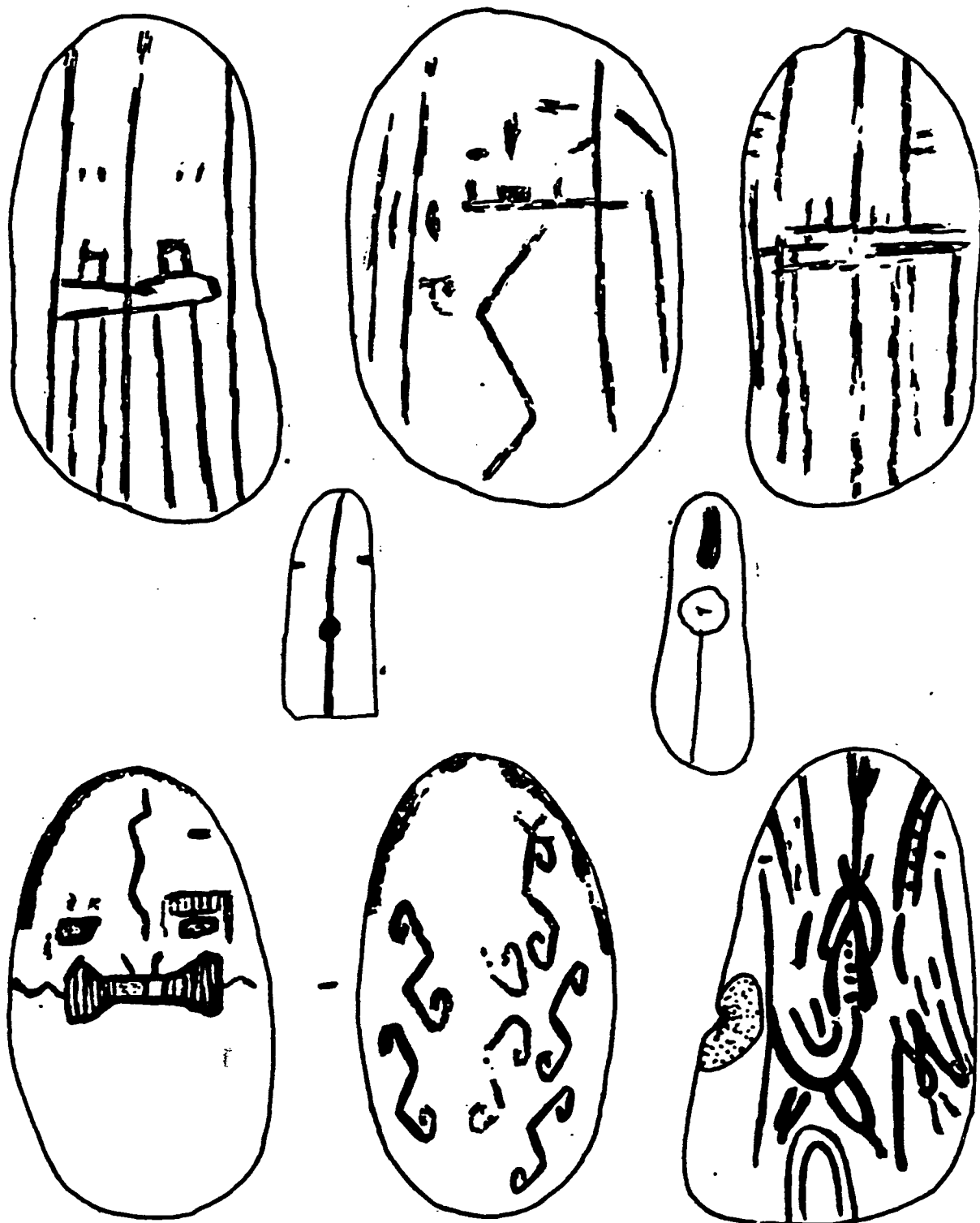
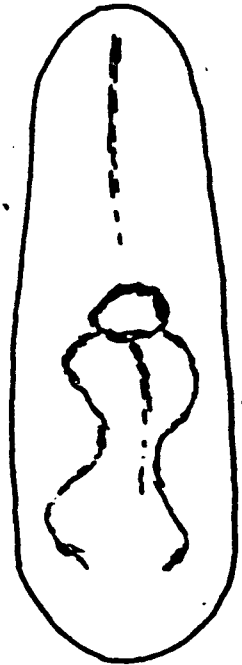
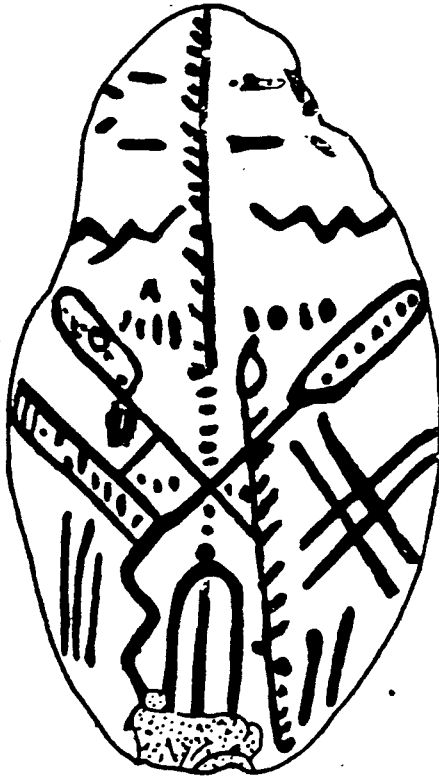
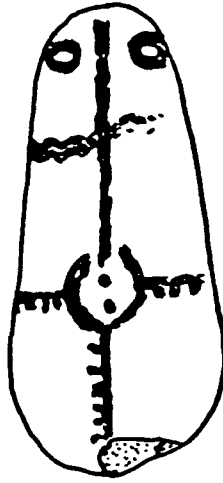
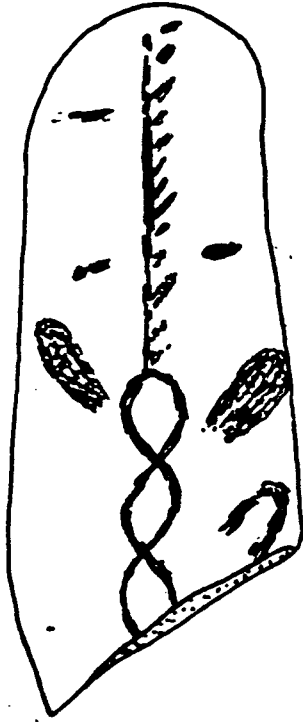
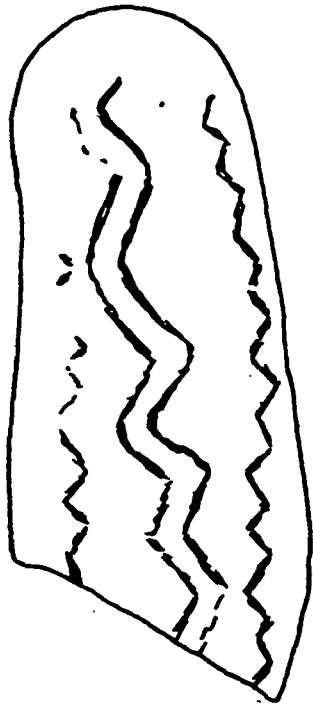


Figure 10. Painted pebbles, smooth river worn pebbles averaging from 2 to 5 in. in length usually painted in black, bear geometric designs and reproductions of human attributes.



years. Changes in tool forms, such as projectile points, are one trait used to differentiate between the Archaic subperiods.

The Early Archaic Period, 7000 to 4000 B.C.

Deposits of this time period have been found at several sites. The dietary pattern which was to characterize the majority of the Archaic stage has been well-established by studies of plant parts, animal bone, and human feces recovered from these sites. The most informative about the overall lifeways of the Early Archaic are Baker, Hinds and Eagle caves. A heavy reliance on the desert succulents, such as lecheguilla, sotol and prickly pear, which are high in bulk and low in nutritional values, was supplemented by all manner of fruits, roots, seeds, and leafy plants. Virtually every animal and reptile was consumed but the Early Archaic appearance of lecheguilla signals the advent of the desert plants as a major dietary component.

Early Archaic age skeletal remains found below the vertical shaft of a deep sinkhole corroborate the dietary stress experienced by the human population at this time. Several individuals, apparently thrown down this hole after death, showed extreme tooth wear, bone pitting caused by iron-deficiency, and arrested growth lines indicative of severe nutritional strain during childhood.

In the Lower Pecos region, Early Archaic dart point styles are generally lumped under the broad descriptive names "Early Barbed", "Early Stemmed" or "Early Corner Notched". Names borrowed from other regions, such as Bell, Martindale, Uvalde or Gower, are sometimes used and new types, such as Baker and Bandy, have been proposed. Few tools, other than the projectile points popular during this time period, set the Early Archaic apart from the general Archaic technology. If the lithic technology remained constant, it can be presumed that many of the more perishable items found in Middle and Late Archaic contexts were also in use in earlier times.

At present the only features recognized in Early Archaic deposits are refuse pits and burned rock accumulations. Although no one can give a beginning date for the rock art, it is highly improbable that any of the pictographs visible today were painted by Early Archaic artists. Given the rapid deterioration shown in modern times, the chances of painted artworks surviving for this long a time are remote. The few painted pebbles, the surviving fragments of baskets, nets and sandals, rare wooden and bone artifacts and the stone tools all indicate that much of the technology which was the mainstay of Archaic life was developed by Early Archaic times.

The Middle Archaic Period, ca. 4000 to 1000 B.C.

Although cultural deposits of the Middle Archaic Period predominate in the majority of the rock shelters excavated in the last thirty years, it remains a time whose material culture is well known

while the underlying social mechanisms are poorly understood. About 4000 B.C., the cultural sphere of the Lower Pecos appears to contract. No longer are the characteristic projectile point styles shared with adjacent cultural areas. The distinctive Pandale point, a beveled dart point with a highly recognizable twisted blade, is considered as the horizon marker for the Middle Archaic. The very names given to the most popular dart points of this time period - Langtry and Val Verde - indicate the core of their distribution. Although a few specimens are found in other areas of the state, the widespread shared styles of the earlier and later periods stand in marked contrast to the localized distribution of the Middle Archaic.

One avenue of research now being followed by prehistorians is the scattered and tentative evidence for widespread erosion during the early Middle Archaic. Both the Devils Mouth and Arenosa Shelter show marked discontinuities in strata bearing projectile points of this age. Radiocarbon dates from Black Cave, a major Pecos River style pictograph site, show that a lengthy Early Archaic occupation was almost completely washed away sometime in the Middle Archaic. This suggestion of widespread drought which reduced vegetal cover, accelerated the runoff of what moisture there was, and prompted massive flooding should be detectable in pollen studies and analyses of subsistence debris of this period.

Based solely on relative dating of art styles, it is possible that the Pecos River pictographs originated in the Middle Archaic. At present, none of the Lower Pecos art can be securely dated by methods other than stylistic comparisons and similarity of objects shown in the panels to those recovered from datable cultural deposits. Clay figurines make their appearance in Middle Archaic times but this may be purely a function of preservation.

The Late Archaic Period, ca. 1000 B.C. to A.D. 600

The beginning of the Late Archaic Period coincides with a brief interval of wetter, cooler climate which in turn promoted an increase in grassland vegetation. This environmental change is most clearly shown in the archeological record by the reuse of Bonfire Shelter, after a period of about 7500 years, for mass bison kills. Once again, herds of bison were stampeded over the cliff above, probably on several different occasions. Their carcasses fell and were butchered, portions dragged into the shelter, stripped of meat, and the bones broken and discarded. The remains of an estimated 800 animals form a massive bone layer 3 feet thick. The rotting meat scraps, bone and grease apparently ignited spontaneously, much as oily rags left in a pile may, reducing much of the deposit to brittle fragments and ash, and obscuring any possibility of detecting layers which might reflect different hunting episodes. Radiocarbon dates were derived from this burned bone and charcoal taken from two small hearths, remnants of fires lit during the butchering process. The most reliable assays, those run on charcoal samples, average 2645 years ago.

The large dart points found in this bone bed are similar to those defined as Montell, Castroville and Marshall, which are more common on Late Archaic sites in Central Texas. Interestingly, these specimens are also very much like forms found on some Archaic bison kills in the Texas Panhandle. However, similar styles are found in quantity at the Devils Mouth Site, Arenosa Shelter, and in numerous other excavations and on open sites. In all these contexts, they are considered as time markers for this period. As Bonfire Shelter is the only site where mass hunting techniques were clearly employed, the excavator came to the conclusion that for a very brief time the bison of the Great Plains expanded their range to include the Lower Pecos. There they were followed by their human predators, bearing their characteristic weapons. When the trend to aridity was reinstated, the herds and their attendant hunters retreated with the grasslands, leaving only these slight perceptible traces of their intrusion.

A second change possibly coincides with the advent of the bison herds and hunters. In the miniature monochrome art style called Red Linear, scenes of combat, hunting and ritual include one representation of a herd of bison racing toward a crack in the shelter wall. Although no concrete radiocarbon dates or associated cultural deposits can be related to this art style, the uncanny resemblance of this scene to the events at Bonfire Shelter seems more than coincidental.

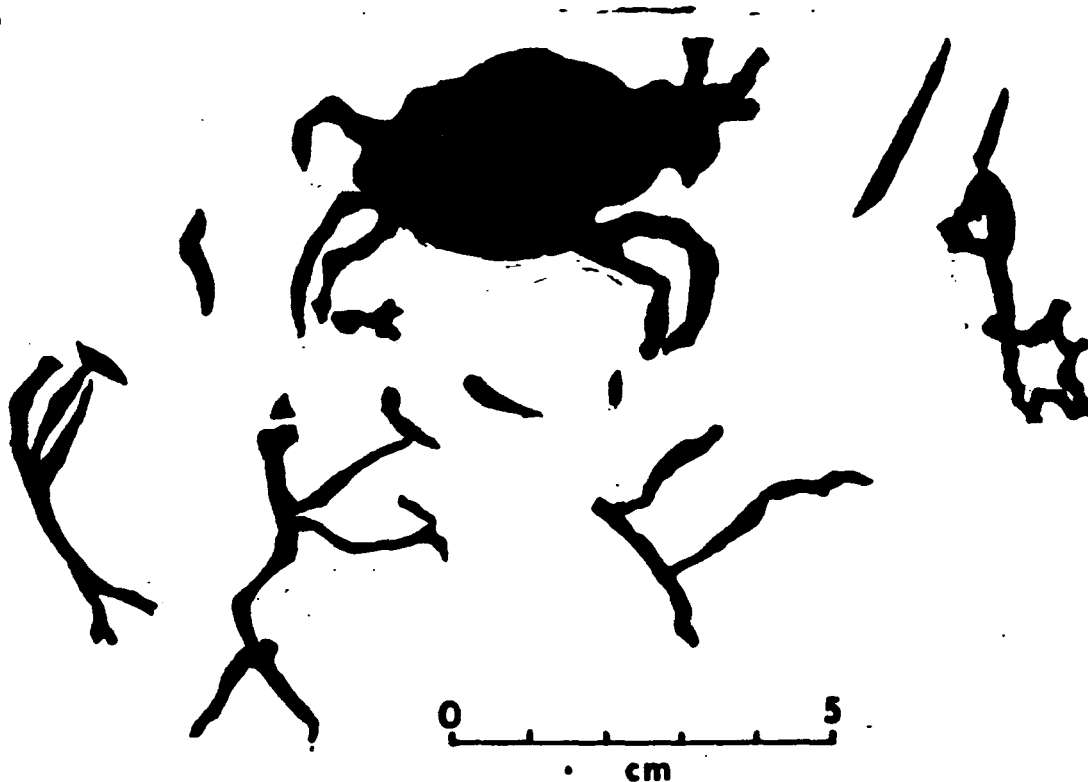


Figure 11. In a second Red Linear scene showing bison, miniature hunters pursue a large, humped animal toward a geometric design at 41VV612.

Although the bison and their hunters were probably not in the Lower Pecos for more than a few decades or centuries, their very presence suggests that a different way of life may have been practiced for this short period, at least by the followers of the herds. Driving and mass slaughter of large, untamed herd animals depends on cooperation between the hunters. Accounts of Plains Indian communal hunts prior to their acquisition of the horse describe methods by which they positioned the herds for stampede. In one approach, a V-shaped drive line was built of piled stones, arranged much like a funnel whose opening was the cliff or bluff selected for the jump. Hunters lay behind the piled stones hidden beneath brush or hides. A human decoy dressed in a bison costume wandered between the animals and the jump location. The curious bison would drift toward this runner until he had attracted them to the head of the drive line. At the appropriate moment, the hidden hunters would leap up waving brush or hides starting the stampede. The decoy would jump into a hole dug for that purpose or dart out of the way as the herd began to run. If the lead animals saw the danger and tried to stop, the mass of panicked animals behind pushed them over the edge. This technique reportedly required considerable coordination and timing so that the herd did not turn from the chosen path. Discipline was imposed so that an overanxious hunter did not prematurely start the stampede or frighten the animals before they were in the proper position. Shooting of individual bison was detrimental to the success of the mass kill and was discouraged. This, and the efficiency of this killing technique, perhaps explains why so few projectile points are found in many kill sites. Another possible technique, known from historic times, was the judicious use of grass fires to force the herds to run in the chosen direction. It is not known what methods were used to stampede the bison of Bonfire Shelter but it is certain that they were successful.

If analogy to historic Native Americans can be continued here, the bison was highly prized for a number of uses. The large quantities of meat obtained were probably dried on racks in the sun or over low fires. Powdered dried meat mixed with fat or bone marrow and various berries or fruits were a storable staple. Bones were shattered to get to the nutritious marrow and boiled for bone grease. Tools were made from some of the bones. Bison hides were preferred for robes and, in later times, were used to make war shields. Bison horn headresses were also prized. Very few parts of the animal could not be used to advantage. However, at Bonfire Shelter, waste is apparent in the number of skeletal parts that were not dismembered and in the few butchering tools recovered. It seems the hunters were too successful and the overkill was too great for the labor available to fully process all the carcasses.

The meat and hides garnered from the mass slaughter seemingly would require immediate processing at a nearby camp. Several likely shelters and open camp sites lie close by but only Eagle Cave, 1/2 mile down the canyon, shows any evidence of bison or the characteristic projectile point styles. In addition, bison bone has been found in deposits of this time period at Arenosa Shelter, and the

Devils Rock Shelter. The latter site reflects heavy use during this time, based on the quantity of Marshall points and one radiocarbon date of 3000 years ago. The primary feature associated with these characteristic points was a large accumulation of burned limestone. This site, and the similar projectile points found on open burned rock midden sites, suggests the bison hunters used rock ovens to process meat or desert vegetation much as their predecessors and the following Late Prehistoric residents did.

With the return to arid conditions came the retreat of the bison and their hunters and the apparent revival of the old way of life. Whether the pattern of the Archaic adaptation continued throughout the short span of this intrusion or was temporarily broken is not clearly shown in the archeological record. The general consensus is that this interlude left little permanent mark on the stable lifeways of the desert adapted population.

Ensor and Frio dart points are the hallmarks of this late phase of the Late Archaic. These time markers are found in upper shelter deposits and on open sites. They are the most common styles associated with the circular or crescent-shaped burned rock middens described in the following section. Their use continues well into the Late Prehistoric period, after the first signs of adoption of the bow and arrow.

By far the majority of the burials recovered from shelter deposits are of Late Archaic age. Thus, our knowledge of Archaic burial practices is greatest for this time period. The general mortuary pattern consists of flexed or semi-flexed burial, usually close to the shelter wall. These burials are often wrapped in matting or overlain with basketry and the pit covered with limestone slabs. Very rarely, the grave holds remnants of clothing, ornaments made of shell and bone, or tools used by the person during their lifetime. Infants, wrapped in deerskin and matting, are interred with their broken cradle boards. That some ceremony or ritual for the dead was performed is indicated by the traces of ochre found in some graves. The magical properties of ochre, or powdered hematite, are suggested by the projectile points stained with red pigment and its use as paint for the pictographs. Skeletons have been found interred under rock falls, in smaller clefts, or in sinkholes. Based on the number of individuals represented by skeletal remains and the absence of household debris, some small shelters may have been specifically set aside as burial locations. Cremation is rare but has been reported. It has been suggested that cremation was afforded only to individuals who had some special status in the group, such as shamans. Burials reported from formal excavations are, however, relatively few in terms of the long human occupation of the region.

The number of upland sites bearing Late Archaic points coupled with an increase in the proportionate number of unifaces, usually considered as vegetal material processing tools, has led to speculation on an escalating reliance on desert plants. A higher recovery of fish bones and scales in shelter deposits at the same time

suggests exploitation of previously less important food sources. The analysis of the stomach contents of one woman who died about 1150 years ago, late in the transition from the Late Archaic to the Late Prehistoric Period, shows a remarkably eclectic last meal or meals. Represented were parts of bat, snake, fledgling birds, small whole fish, bone elements and fur of white tail mice and pocket gopher, prickly pear, grass, and other plants but the dominating feature was grasshopper parts. It has been proposed that either a population increase or a deteriorating environment forced the people to rely upon food sources they had not fully utilized previously. This point must be reconciled in order that the transition from the Late Archaic to the Late Prehistoric period can be understood.

The Late Prehistoric Period: The Beginnings of Change

The Late Prehistoric is the period most marked by changes that affected many of the basic patterns established during the long Archaic continuum. The first sign of change, and the one used as a time marker for the period, is the adoption of the bow and arrow. Arrow points are found in the upper level of sites mixed with dart points of Late Archaic age. The earliest radiocarbon date associated with arrow points, A.D. 510 to 630, comes from the top stratum of Arenosa Shelter, now under Lake Amistad. This date is difficult to interpret as this level was highly mixed, containing items ranging in age from Late Archaic Ensor and Frio dart points to historic trash. Arrow point types include Scallorn, Perdiz, Toyah, Clifton and Harrell. Few good dates have been obtained to clarify the sequence of arrow point types but evidence from outside the region suggests that the earlier expanding stem Scallorn was replaced by the contracting stem Perdiz. Toyah and Harrell arrow points are considered to be later adaptations coming into use after about A.D. 1300.

The drawing of human figures with bow in hand in the Red Monochrome pictographs places this style in the Late Prehistoric Period. The contrast between the realistic humans and animals characteristic of the Red Monochrome art and the mythic qualities of the earlier Pecos River pictographs is so strong that the Red Monochrome is recognized as intrusive, brought into the region as a fully developed art form. The close similarity to rock art of the Big Bend region and the western Plains points to a possible origin with the nomadic hunters who travelled the Southern Plains in late prehistory and early history.

A new form of mortuary custom, burial under low mounds of rock, may have come into use during the Late Prehistoric Period. The only such cairn excavated to date contained four projectile points - two dart points similar to Late Archaic forms, one Perdiz and one Scallorn arrow points - and one smooth stone in the heart of the feature. No skeletal material was recovered but chemical tests of the fill show a high phosphate concentration, indicating the composition of large quantities of bone or other organic material. Similar features are common higher on the Pecos River and along the margins of the Southern



Figure 12. Life size and lifelike human figures and realistic animals are the primary characteristics of the Red Monochrome style pictographs. The deer with outstretched tongue in this panel at 41VV78 has a cross hatched body, perhaps a convention borrowed from Plains Indian groups.

Plains where their function as burial cairns has long been known.

Among the upland sites attributable to this time period are several locations with the structural remains of a different type of housing. Stone circles, popularly called tipi or wickiup rings, made of six to eight paired blocks, probably held supple pole frameworks for grass or hide covered huts much like those used by the historic Comanche. Some of these structural remnants are found adjacent to burned rock middens and bear a mixture of Archaic and Late Prehistoric stone tools. On the later ring sites, artifacts such as small, triangular arrow points, steeply bitted end scrapers, and a few fragments of plain bone-tempered pottery are more characteristic of sites on the fringes of the Southern Plains than any earlier Lower Pecos tool kits. Similar ceramics are informally called Abilene Brown, indicative of their common occurrence in that area. A few sherds in the collection from the Lipan Apache mission of San Lorenzo de la Cruz indicate the late date of this pottery type. Examples in the Lower Pecos come from the Devils Mouth, Javelina Bluff, Infierno Camp, 41VV241, 41VV365 and 41VV424. These stone circle sites and their characteristic artifact assemblage are probably of very late or proto-historic age and could very well represent early Apache occupation of the Lower Pecos. Alternatively, Spanish documents refer to the practice of several tribes along the Rio Grande gathering at the mouth of the Pecos for winter bison hunting. These upland camps would be aptly suited for such a temporary occupation.

No change in the basic subsistence during the Late Prehistoric Period has yet been detected but as most of the analyses have centered on rock shelters with very sparse late deposits, this may be simply a matter for redirection of study. Based on the number of Ensor and Frio dart points found on ring or crescent-shaped burned rock middens, these sites have generally been considered as Late Archaic. However, radiocarbon assays of charcoal from many of these features indicate they were used from A.D. 700 until historic times. This places them within the Late Prehistoric Period as defined here. Stone circles found adjacent to burned rock middens contain Scallorn, Cliffton and other arrow point styles along with the Ensor, Frio and Figueroa dart points, suggesting all these types could be considered as transitional.

The distinctive shape of the ring middens has been explained by analogy to documented historic Apache baking ovens. A circular pit is lined with stones, filled with dry wood and ignited. When the coals burn down, the heart of sotol or agave are thrown in, covered with wet grass and twigs, blanketed with earth and, often, a second fire lit above. The tubers bake for one or two days, making them suitable for storage and later consumption. The burned rock, when scraped away to expose the pit oven, forms the crescent or circle characteristic of these sites. These features reflect a continued reliance on desert plants such as sotol and agave but the shape of the remnant rock pile is distinctive.

Mussel shell is often found on the burned rock midden sites indicative of a secondary food source. Faunal remains have not been recovered from these upland sites in quantities sufficient to determine the full range of game animals. Species recovered from shelter deposits of this time period do not differ from those of earlier times. The animals shown in the rock art are those known from Archaic deposits and all are still found in the region today. The spread of bison late in prehistory is known from many sites on the Southern Plains, central and south Texas. A bison hide lined pit in one shelter, a few very late pictographs showing bison, and comments in Spanish documents from Northern Mexico suggest that bison were available to the Lower Pecos residents but no strong evidence for a heavy reliance on these large herd animals has been found.

The Late Prehistoric Period has only recently come under intensive study and much remains to be learned. Whether the changes in fundamental cultural patterns, such as burial customs, art, weaponry, and structures were the product of gradual adaptation or resulted from an influx of new people is a topic now concerning prehistorians. Until an accurate assessment of the age of each of these traits can be gained, their sequence and origin will remain debatable.

The Late Comers: The Historic Indians

Technically, the historic period begins with the first Spanish expedition to cross the Lower Pecos, Gaspar Castano deSosa's journey from Monclova, Mexico to the Pecos Pueblo in 1590-1591. In reality, repercussions from the Spanish colonization probably touched the lives of the native population before this date. One possible source of information about the approaching European was the native tribesmen of northern Mexico, who reportedly retreated into the semi-desert regions. Spanish documents also refer to the northern Mexican practice of travelling to the Rio Grande for winter bison hunts and trade. Here they met with the nomadic hunters of the Southern Plains, called the Cibolos and Jumanos in the Spanish records. The arid lands and rugged terrain presented no significant barrier to these people long before the horse granted them mobility. The Spanish considered the desert dwellers extraordinarily ferocious but clashes between cultures often accelerate violence on both sides. To what extent the natives of the Lower Pecos warred among themselves is unknown. It seems probable, however, that some form of alliance was established making it possible for these northern and southern groups to coexist at a temporary meeting ground along the Rio Grande. At least, by 1693, a Spanish campaign to the Conchos-Rio Grande area, La Junta, found that the camps of allies of the southern tribes lined the Rio Grande to the mouth of the Pecos. Thus, the Lower Pecos may have served as a refuge long before the Spanish scribes recorded the movements of the seventeenth and eighteenth centuries.

The second possible source of unrecorded contact may have come in the form of illicit commerce in slaves. As lieutenant governor of Nueva Leon, Castano was allegedly involved in widespread slave trade, sending out expeditions to garner labor for the mines and fields of Northern Mexico. His ill-prepared and hasty expedition in 1590 was to be financed in part by capture of Indian slaves along the route. His knowledge of the location of the mouth of the Pecos may well have come from slaves or slavers. His ignorance of the rough terrain beyond would suggest that the Rio Grande may have been the upper limit of his information. He was, however, aware that the Pecos was the same river which flowed by the Pueblos described by the Espejo expedition of 1582.

Slavers kept no records of their illegal operations and no tales of the Indians are preserved by a written language. Thus, in that sense, Castano's travels provide us with the first sketchy description of the Lower Pecos in historic times. When his wagon train, composed of 160 to 170 people, 8 or 10 two-wheeled ox carts, cattie, goats, horses, and dogs, left Monclova without permission from the Spanish crown, he became a fugitive, eventually apprehended and returned to Mexico. Exiled to the Philippines, he died in a revolt by his Chinese galley slaves. The court reversal of the verdict of exile came too late. His later adventures are a topic for historians; only the casual facts noted as he passed through the Lower Pecos are of interest here.

His caravan crossed the Rio Grande beneath present-day Del Rio and headed west to a camping ground on Seminole Canyon. From there, with an ultimate destination of the Pecos Pueblo, his wagon train wandered between the Pecos and Devils rivers for 26 days searching for a crossing and for water sufficient for the needs of such a large group. The stony terrain reportedly cost them 25 dozen pairs of horseshoes. It is perhaps significant that at no time, in the midst of all the complaints about difficult terrain and lack of water, was a shortage of feed for the numerous domestic animals mentioned. This, coupled with other ethnographic references to bison hunting at the mouth of the Pecos, gives the impression that the Lower Pecos was marginally included in the great expansion of grasslands which turned much of the American West into a savannah parkland for a few centuries.

Another clue, this time to the nature of the native population, is the complete absence of reference to encounters with Indians from the Rio Grande until the wagon train finally came to the Pecos River below the present-day ruins of Fort Lancaster, several weeks into the journey. A scouting party reported that they came upon a great number of people of the Tepelguan (or Depesguan) nation who gave them buffalo and antelope meat and skins, shoes made in their style, and offered to take them to a place of settlements and abundant maize. Tepelguan is probably derived from the Nahuatl words tepetl (mountain) and huan (at the junction of), implying the location of this group rather than a tribal identity. The translators of Castano's journal suggest these may have been members of the poorly known Jumano, buffalo hunters of the Southern Plains who had wide-ranging contacts with settled tribes to the east and west. In some reports, the Jumano are settled agriculturalists of the Rio Grande, in others, nomadic hunters of the Plains. Such a seasonal pattern is not uncommon but some authors believe the name Jumano was applied indiscriminately to any tattooed or body-painted Indians. This difficulty in determining exactly who the Spanish encountered is only the first in a long series of ambiguities. Dozens of tribes are named by various expeditions to other parts of the Southwest but whether the name is that by which the people called themselves or one stuck on by the explorers because of some characteristic is generally impossible to determine. The names of individual leaders were often applied to the group as a whole and any one group could be called by several names. Even if the tribal identification of these people is correct, the Jumano remain one of the least known of Texas tribes. Thus, this identification does little to clarify the true identity of the Tepelguan met by Castano's scouts.

The next day, setting out upriver from their camp on the Pecos, Castano's wagon train came across many recently abandoned camps (rancherias) but only a lone Indian came out to meet them. He spoke a tongue Castano's Coahuiltecan and Nahuatl-speaking interpreters could not understand, suggesting to the translators of Castano's journal that he may have been Apache or a speaker of an Athapascan language. Within the next few days, continued contact with small groups of similar people introduced the Spanish to the dog as a beast of burden.

The cattle, however, proved to be too great a temptation; theft of some stock precipitated what may be the first known battle between Apache and Spaniard. At this point, Castano's caravan passes out of Texas and into New Mexican history.

The apparent depopulation of the area immediately north of the Rio Grande can be easily explained if the natives had experienced the effects of contact with the Spanish slavers or if Castano was, in fact, capturing them for shipment to Nueva Leon. In the latter case, no records would be kept as evidence. The sight and sound of a wagon train the size of Castano's would serve as ample warning to fade away into the refuges offered by the rugged terrain. The term "despoblado", which means unpopulated, given to the arid lands of south, southwest and western Texas, reflects the value the conquerors placed on mineral resources, arable land, and centralized Indian populations they could enslave and exploit. Whether the Spanish really thought the vast arid lands were unpopulated or the term was a value judgement indicating the area was unfit for Christian Europeans is of consequence only in the myth currently circulated that "Pecos Man" vanished like dust in the air, leaving only a mysterious legacy of art and artifacts. True, the indigenous people, if already exposed to the effects of contact with Spanish slavers, would melt away into hiding at the sight, sound and smell of such a large wagon train. Castano's first recorded encounter with Indians north of the Rio Grande high on the Pecos River near present day Sheffield probably reflects more the range of Indian experience with the white man than any population distribution. Castano seems to have recorded contact with the buffalo hunters and the dog-travois users because these unusual traits excited the Spaniards curiosity. It is also probable that the Apache expansion into the Lower Pecos after the great Pueblo uprisings in the late 1600s forced out the remnants of the earlier residents who had survived disease and death. By this time smallpox, measles and other contagious disease had afflicted the native populations who had no natural immunity to these imported illnesses. Whether they became stragglers in lower Rio Grande missions or refugees in northern Mexico, the fate of these people is unknown. If, however, the history of other Indian nations can be extended to this area, the three hundred years between contact and total eradication were centuries of displacement by other native cultures, retreat, bloodshed and disease. No chroniclers traveled with the native peoples and few white men ever penetrated this rugged refuge of the later Apache and Comanche. However, scattered pictographs, metal arrowpoints, gun flints, and an occasional recorded massacre tell the tale of people finally defeated by the steady encroachment of the Anglo-American, the bearer of civilization whose iron horse was the railroad.

Only one historic Indian encampment has been reported in the Lower Pecos. The noted recorder of the rock art, Forrest Kirkland, published an account of a rock shelter near Pandale where glass beads, glass, metal bells, scrap metal, scissors, and brass buttons were found. A local resident could identify the buttons as from soldiers stationed nearby in 1879 following a request to Fort Clark for help in



Figure 13. An historic Comanche camp. National Archives 111-SC-85775.

controlling the Apache. A cache recovered in adjacent Pecos County held bison skin pouches, calico cloth, pigments, and an iron axe but no age or affiliation could be attributed to it beyond assigning the cloth to the Civil War Period. The scarcity of historic Indian remains is understandable when the short duration of their occupation of the Lower Pecos and the mobility of their lifestyle is taken into account. If the Comanche camp shown in Figure 13 is typical, the meager possessions would leave little trace once camp was broken and moved.



Figure 14. This outstanding pictograph at Vaquero Shelter reflects the Native American view of the white man. This Spaniard stands beside a mission church.

Ten pictographs convey some of the worldview of the series of Indian groups which sequentially retreated into the despoblado, protected by the Spaniards discomfort with the terrain and the white

man's temporary contempt for settling the region. With the exception of the one recorded camp, these murals are the only permanent evidence of the historic Indians. Vaquero Shelter (41VV77), Rattlesnake Canyon (41VV205), Castle Canyon (41VV7), 41VV343, 41VV570, all in Val Verde County, and Meyers Springs in Terrell County present detailed pictures of mission churches, missionaries, Spaniards, horses, and domestic animals. None of these panels have been assigned to any specific tribe or group. Bison, tipis, guns, white riders pierced by lances, and mounted warriors at 41VV328, 339, and 400 reflect experiences of later times. One site, 41VV327, strongly resembles Comanche art in the style of the horse and rider, especially the long beribboned braid of the warrior. As the Comanche were the latest of the warrior tribes to sweep off the Plains, displacing the Apache, this scene should date to the nineteenth century.

Scattered accounts of battles, massacres, and raids are found in Spanish records of their unsuccessful attempts to pacify the region. In 1729, Jose de Berroteran was sent to explore the area searching for a site for a new presidio. His mission was also punitive, intended to halt raids by hostile Indians into northern Mexico. His troop of 89 soldiers and 46 Indian scouts paralleled the Rio Grande from Del Rio to a crossing near present-day Langtry, on to Dryden where the futility of his mission was made obvious by lack of water and difficult terrain. His report failed to impress the authorities who sent Garza Falcon on a second expedition in 1735. This attempt met with the same difficulties. The next foray, Rabago y Teran's in 1747, completely avoided the Lower Pecos in trying to establish a route to the western Presidio del Norte.

It was not until 1773 that a punitive expedition led by Vicente Rodriquez against the Mescalero found its objective near the mouth of the Pecos. Coming across a camp undetected, the Spanish attacked, killing an untold number, capturing sixteen women and children, two hundred horses and freeing three Spanish captives. Ugarte y Loyola's campaign two years later cost the Spanish three lives in a battle on the Devils River. The general inability of the colonial power to pacify the despoblado ended in detente until after the Mexican War. The Apache raided the Spanish settlements, the Spanish occasionally struck back. With the coming of American sovereignty, however, a concern for linking west and east Texas became heightened by the economic lure of trade. Thus, the military had reason to clear the region of hostile Indians to protect the military supply routes and civilian trade roads. The mouth of the Pecos was the scene of skirmishes between the Army and the raiding Indians in 1856 and again in 1873. The participants in the latter battle were Lipan Apaches who lost nineteen of their party. Their chief and forty women and children were captured. The Army was less fortunate in their next encounter with the Indians. While out looking for Indians, Lt. Bullis and his three Seminole scouts found what they were searching for - Comanche crossing the Pecos in the vicinity of Eagles Nest crossing. Although they were able to kill three Indians and wound a fourth, the Army scouts were outnumbered and forced to beat a hasty retreat to Ft. Clark. But the final death blow for the Indian was

already in motion. The construction of the Southern Pacific Railroad in 1881-1882 was to open the region for settlement. Even in their last moments, however, the Apache struck back, wiping out a Chinese work gang on the Eagle Pass extension, killing all eleven.

By the time of their final eradication, it was no longer possible to determine the true ethnic affiliation of most of the Indian groups. Decimated bands were absorbed into other tribes, forming composites such as the Jumano-Apache. Apache had become a generic term for Indian, applied indiscriminately toward most raiding groups, but they are generally accepted as the last holdouts in this region. The Comanche were also present but until the final days were centered further to the north. The Seminole scouts stationed at Fort Clark were Black-Indian imports from Florida, who achieved hero status in the Indian wars. Thus did a 12,000 year history of native life in the Lower Pecos ebb away, leaving only scattered traces in the genetic pool of northern Mexico and lower Texas. "Pecos Man" did not vanish into thin air. He was the victim of hostile expansion that began before the advent of the white man and his displacers met the same fate as he.

The Pictographs of the Lower Pecos Region

The Lower Pecos River region is famous for its prehistoric and historic aboriginal rock art. Pictographs, the painted art, are found throughout the region in rock shelters and on canyon walls, wherever suitable surfaces for painting are found. The pigments used are usually powdered minerals, such as hematite, limonite, and manganese dioxide, mixed with a liquid binder and applied with brushes made of plant fibers, fingers, or as crayons of pressed mineral powder. Occasionally, charcoal is used. The binder has not been identified, but experiments have shown that animal fats work well.

Studies carried out as part of the Amistad salvage project defined four major categories of pictographs. The three prehistoric types represent three different periods in time, and reflect three widely varied world-views. The fourth category, historic pictographs, includes all panels which show contact with the European; domestic livestock, guns and Christian symbols are favored topics.

Through the study of overpainting and stylistic changes within the major types, a relative sequence of pictographs has been derived. The oldest art, the Pecos River Style, has been considered as religious or magical art. The central figures are large, faceless, costumed humans, called shamans because they give the distinct impression that they are religious practitioners. The figures are armed with a set of objects, such as fending sticks, atlatls (spear throwers) and prickly pear pouches, all found in the dry shelter deposits. These articles date the style to the general Archaic Period.

Smaller figures include other humans, animals, or strange geometric forms. The positioning of many of these groups suggests dominance of the central character over his enemies or the game animals. The one animal in these scenes which exudes power akin to that of the shaman is the "panther" or mountain lion, still living in the region today. Deer are a favored topic, as are snakes, fish, turtles, and an occasional bird.

The massive amount of overpainting at some sites, such as Panther Cave and Rattlesnake Canyon, suggests recurring ceremonial events perhaps carried out during times when the scattered populace came together for harvest celebrations. Ethnohistorically, such aggregations took place when desert fruits, such as prickly pear, ripened. Congregating for social events such as this gave small groups the opportunity to exchange information and goods, make political alliances, and marry outside their immediate family. What motivated the painting of these enigmatic figures and how art served a function in their society can only be inferred from living groups. Often wall painting is part of rituals conducted for events such as puberty celebrations or initiation into select societies. The mystical nature of Pecos River style art has given rise to speculation that it originated as an expression of hallucinogenic visions, induced by eating mescal beans, a known practice in historic times. The skill



Figure 15. This towering Pecos River style shaman stretches from floor to ceiling in Panther Cave, 41VV83, one of the most spectacular of Lower Pecos pictograph sites. The massive amount of overpainting suggests ceremonial or ritual art.



Figure 17. The panther of Panther Cave, 41VV83. This site holds at least five different panther images, suggesting the mountain lion may have been the guardian spirit or emblem of a specific group who reused this shelter over time.

with which many of the Pecos River style scenes were drawn suggests at least a part-time specialist was at work. In a hunting and gathering society, the artist may well have been the shaman, the magician thus placating the supernatural to insure the welfare of the group as a whole. Without knowing the mythology or cosmology of the people involved, the interpretation of prehistoric art is open to the most absurd and rampant speculation. There can be little doubt that the Pecos River style art was drawn by indigenous hunters and gatherers at a very elemental level of social organization but with a highly varied and imaginative view of the natural and supernatural world.

One of the major problems in interpreting this art style is its age. No good date can be estimated for its inception and its duration is unknown. Only a general assignment to the Archaic Period can be proposed based on the similarity of objects seen in the paintings to those found in archeological excavations. Most authorities believe that the art seen today is at most of Middle Archaic or younger age simply as a matter of preservation. Even at that, these pictographs would rank among the oldest in the New World.

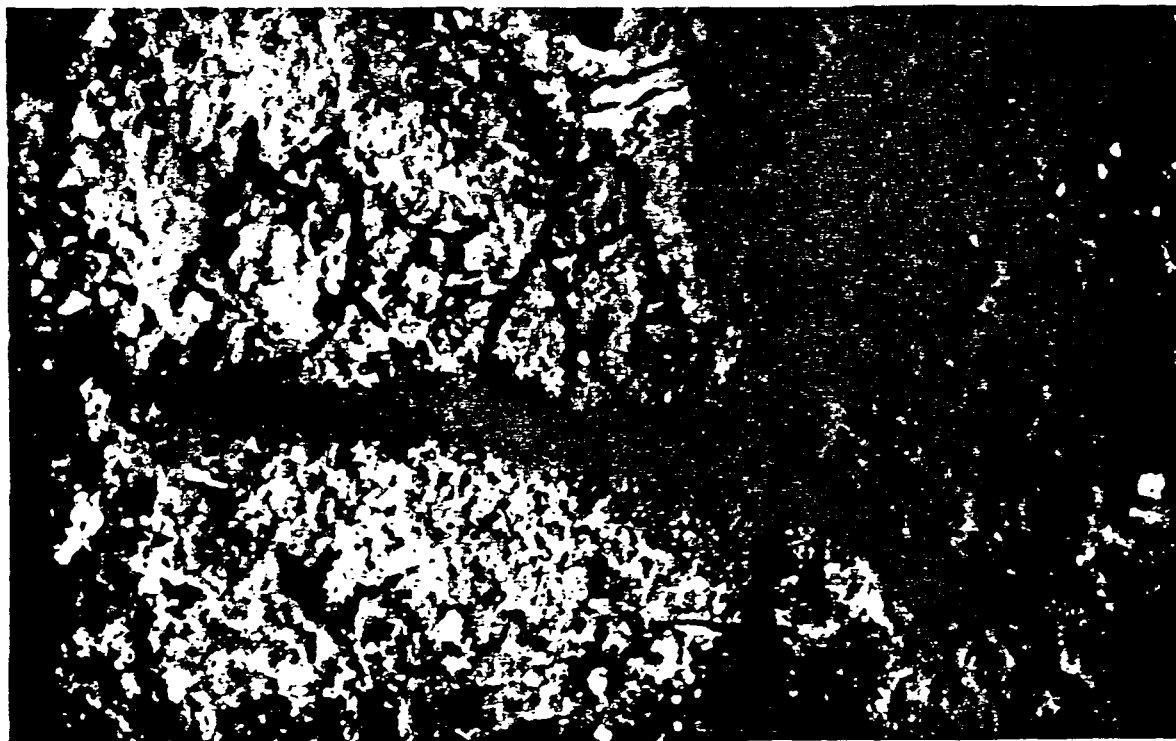


Figure 18. This miniature group of Red Linear figures is so high on the wall of Fate Bell Shelter, 41VV74, that they can only be seen through magnification. The elaborate headdress of the lead figure may reflect his status as headman.

The second pictograph style is the Red Linear, characterized by miniature stick figures engaged in highly mobile group activity. This style is much more representative of every day life among the hunter-gatherers. Scenes of hunting, warfare, ritual and procession brim with a vivacious energy foreign to the other Lower Pecos

pictograph styles. The underlying themes are, however, more solemn, in their concern for basic survival in the form of conquest, hunting success, and human reproduction. Red Linear is the one style which treats with sexuality and gender. The emphasis on pregnancy and erect phalli in this style hint at a fertility as a dominant factor in ritual painting. The secluded location of some of these panels and the male-oriented activities portrayed suggest ritual painting, perhaps for puberty ceremonies or initiation rites.

The weapons pictured are, as was the case in the Pecos River Style, of Archaic age. The occasional bison shown in the hunting scenes suggests the time frame can be narrowed to the Late Archaic, ca. 2600 years ago, when a slightly moister climate allowed the grasslands to expand into the region. The consistency in Red Linear art and the lack of a developmental sequence may result from its origin in another medium, such as hide painting, and it may be that it was brought into the region by the bison hunters who mimicked the earlier occupants by painting their designs on the walls.

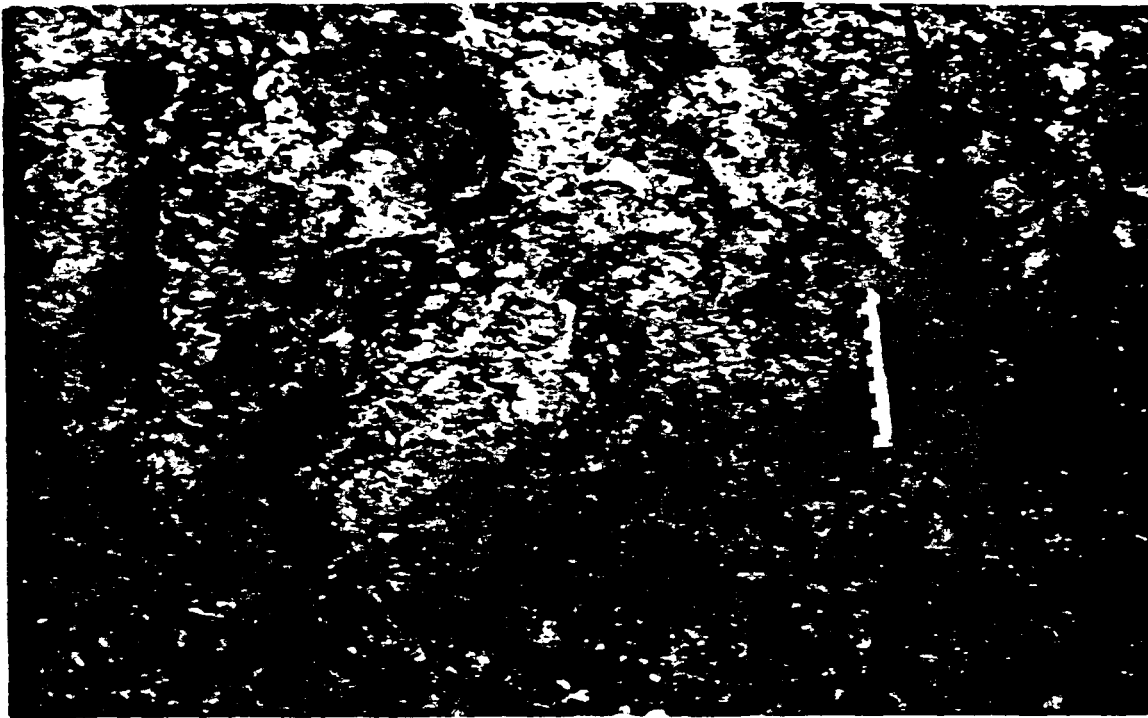


Figure 19. Less realistic than many Red Monochrome figures, the naked man at right is pierced by two lances or arrows. The contorted figure at left is found at several Red Monochrome sites.

The latest prehistoric pictographs, the Red Monochrome, are definitely of Late Prehistoric age, after A.D. 600 and before European contact in 1590. This can be assumed from the frequent drawing of the bow and arrow which were introduced into the Lower Pecos at that time. This style is again markedly different from the preceding styles, indicating a break in art and possibly cultural

traditions. Life-size and life-like human figures are posed frontally with arms and legs outstretched. Realistic animals of many economically useful species - deer, turkey, rabbit, catfish - as well as the panther and coyote are clearly shown. Hostility is prominently displayed in figures riddled with arrows (Figure 19). This characteristic is not, however, limited to this style. The rarity of Red Monochrome pictographs and the strong similarities between the sites led to the conclusions that this style was brought into the region in fully developed form but lasted only a short time. The strongest resemblance to other art styles is with certain figures in the Big Bend region of Texas.

Figure 20. In this historic pictograph on the Devil's River, a bison stands above a man armed with a rifle.



The fourth major pictograph category, historic aboriginal art, is defined by evidence for European contact in the panels. The traits of European culture most often shown are domestic livestock, guns, and Christian symbols, such as churches or priests. Only ten sites of this era have been recorded. Some bear strong resemblances to Comanche art and others may be attributed to the Apache. Both tribes were known to raid back and forth across the Rio Grande until the middle 1800s.

By far the majority of the rock art sites are now only remnants or of miscellaneous styles which can not be assigned to any category or time period. The petroglyphs remain poorly studied as do some minor pictograph classifications which have been suggested but not

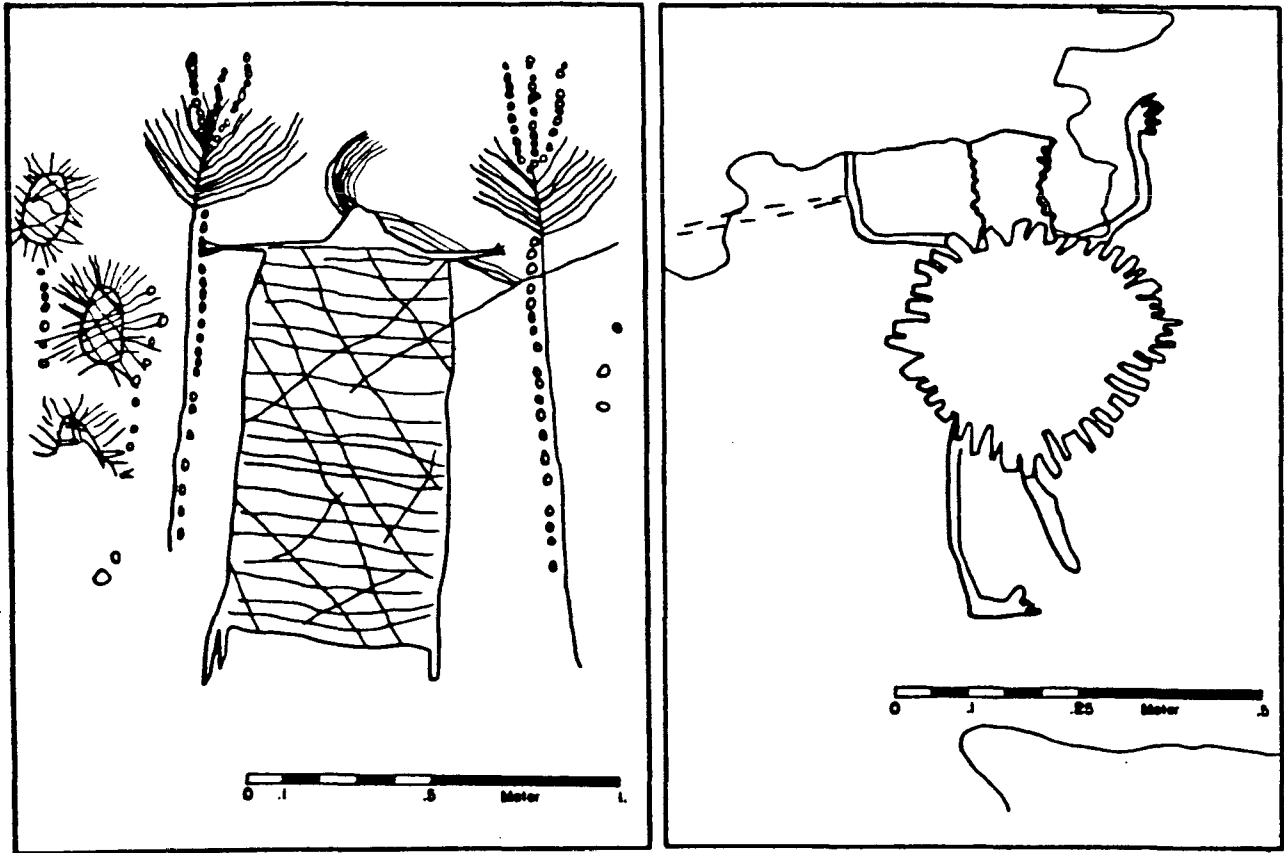


Figure 21. Two miscellaneous pictograph styles. a) This cross hatched human holds two flowering stalks. b) A solid 'red' shield bearer' is considered a late prehistoric pictograph.

proven. The single greatest problem in rock art studies is the rapid natural decay of the pictographs and the vandalism inflicted by unknowing individuals. Ours may be the last generation to see the splendor of this ancient art.

The Social Structure of Lower Pecos Aboriginal Life

Each of the broad time periods in Lower Pecos prehistory is characterized by a variety of cultural traits, most obviously those reflected in the material objects which have survived over time. However, despite shifts in emphasis, for example, from hunting to gathering, much of the basic lifeways remained the same. By comparing the information on Lower Pecos technology and subsistence to living or documented groups in similar arid environments, some inferences about the social structure of the people can be made.

Although the emphasis may have ranged from mass kills of herd animals to trapping rodents or roasting prickly pear pads, hunting and foraging were always the mainstay of the Lower Pecos economy. Slight differences in social attitudes probably prevailed during times when hunting had priority, but those are also the periods about which we know the least.

The diversity and distribution of food resources called for a nomadic life, moving from place to place as dictated by the availability of food, water and other resources. Sedentism, or living in permanent settlements, is usually prompted by a surplus food supply which can be stored for use throughout the year. Although some hunting and gathering groups are granted such a surplus by an abundant nature, all current information indicates the Lower Pecos people were nomadic throughout prehistory.

As another form of human adaptation, the structure of society can be inferred from the conditions imposed by a hunting-gathering lifeway in an arid environment. The population must remain sparse and thinly distributed in order to exploit resources without seriously depleting them. Thus, the basic social unit would be the extended family, a small, highly mobile group drawn together by ties of kinship. The familial relationships served to further the unity of the group, increasing cooperation through familiarity and affection. Other members may have been attracted by the success of some individual or simple compatibility. Group composition was fluid, permitting any friction to be resolved by removing to another band. Practicing a nomadic life, these small groups could make seasonal rounds, harvesting plant foods as they ripened or moving when local supplies were diminished. In anthropological terms, the social structure of the Lower Pecos remained at the band level of organization.

During times of relative plenty, for example, when the desert fruits such as prickly pear ripened, the dispersed families congregated for communal harvests and celebrations. The need for exogamy, the rule of marrying outside the group, could be satisfied at these meetings. A forum for exchange of information was provided and political ties were formed or cemented. It seems probable that much of the most elaborate rock art was painted as part of rituals enacted during these periods of aggregation.

Marriages contracted between members of different groups served a most useful function by providing ties with a larger segment of the population. The more links an individual could forge the more options would be available during times of stress. Thus, marriage was a political alliance with implications beyond that of the individuals concerned. However, the union was probably highly informal by modern standards.

By necessity, some form of population control - sexual abstinence or infanticide - would augment the high infant mortality rate to keep the nuclear family small, within the limits imposed by the food supply and the need for mobility. Life expectancy was short and children probably made a rapid transition to adulthood, learning to perform their mature roles at an early age. Miniature weapons and domestic utensils found in shelter deposits would serve the dual purpose of amusement and education.

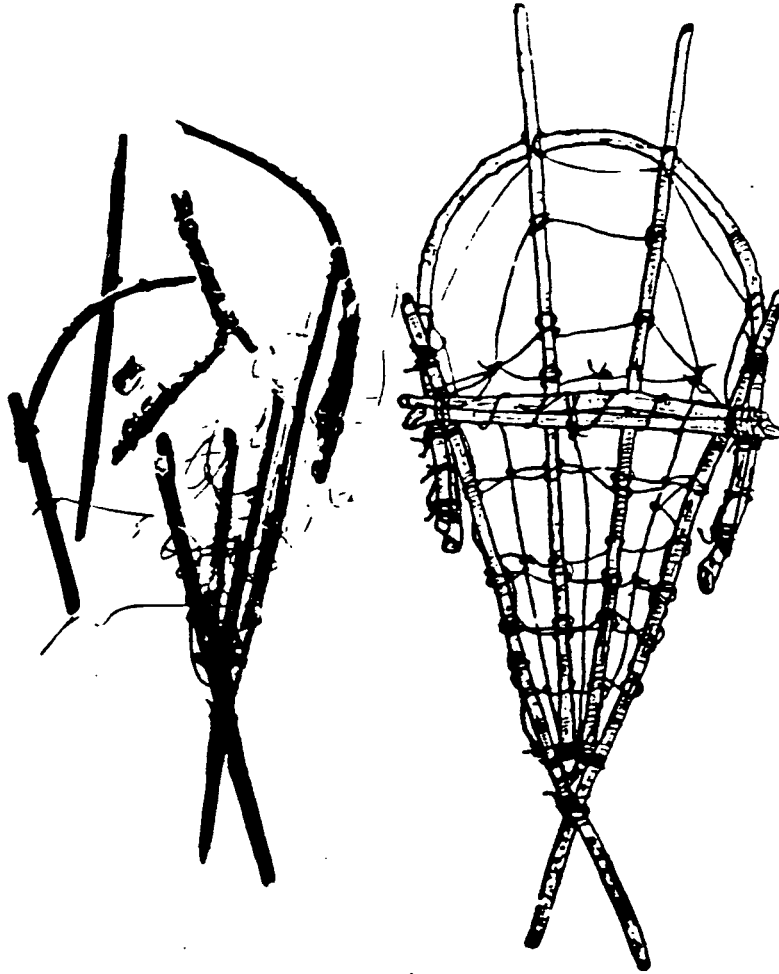


Figure 22. A miniature cradle board and an artist's reconstruction. This toy, made of twigs, is only 6 inches long.

Women, in an economy which emphasizes the gathering of plant foods, would be responsible for the bulk of the foodstuffs. Girls would learn to harvest and process plant material for both consumption and manufacture of clothing and utensils. Traditionally, the men would have controlled hunting of larger animals and the manufacture of the more complex stone tools. The production of the finest projectile points involves labor that goes far beyond that needed to produce an efficient weapon. Such an expenditure of time and effort to produce aesthetically pleasing tools must have carried psychological or social rewards beyond that of sheer utility.

In all human societies, some able members of the group fulfill the need for leadership although the degree to which power can be exercised corresponds to the population density and the resources to be controlled. In an area such as the Lower Pecos, where both people and basic commodities were sparse and dispersed, a leader would usually rise to the top during times when organization was needed for a specific task. Examples might be the most able hunter directing a communal hunt or the bravest warrior leading a raid or defending the camp. Many Texas tribes had both war and peace leaders on the principle that the one most qualified to fight may not have been the

best advocate of reconciliation. Because the headman's power was simply a matter of acknowledged ability, high rank was not hereditary nor endowed with much control over the rest of society. Often such a leader functioned only during his prime, to be later replaced by another, more competitive and able man. The elderly were not without merit, their experience and wisdom often contributing to endurance through times of stress.



Figure 23. This Red Linear scene strongly resembles accounts of curing rituals in which the seated shaman magically drives away the spirits of sickness or evil.

The oldest and most widespread form of religious thought, shamanism, is found among hunter-gatherer societies throughout the world. The most obvious evidence for its role in Lower Pecos ideology is the Pecos River style pictographs. These complex and elaborate artworks are considered to be shamanic works, perhaps visions achieved in trance but made permanent on the walls of the canyons. Traditionally, the shaman, or medicine man, was charged with the general welfare of the group. Through their special relationship with the supernatural world, they were able to insure the success of a hunt or battle, cast spells to enchant man and animal, and communicate with the spirits. In addition to their role as magician or conjurer, as the most learned person in the group, they served as a storehouse of oral tradition, stories, myths and facts about the group's history and about the order of the universe. In many respects, the shaman would have been a teacher, relating his accumulated knowledge to the youth. On an even more practical level, the shaman was an herbalist, curing disease through a combination of real and magical treatments. The shaman was probably the most powerful single individual in society; one can only speculate upon his fate if he was ineffectual in performing these many tasks.



Figure 24. Often called a medicine bundle, this basket found in 41VV171 contained antler tools, mussel and tortoise shell, a ball of pink clay, pieces of hematite (red mineral) leather thong, sinew, deer hide and, more curiously, 230 mountain laurel beans and 11 left halves of rodent jaws. Mountain laurel or mescal beans are hallucinogenic in small doses, fatal in large quantities. Rodent jaws with teeth were used as scarifiers by some Texas Indians, scratched across the flesh to determine if the mescal had induced a trance.

If we take the dictionary interpretation of the word primitive as meaning "relating to the earliest age or period", the Lower Pecos aborigines can be considered primitive. However, in no way can their lifestyle be considered as inefficient or impoverished for all time. The pictographs for which the area is most noted testify to a complex ideological or mythological world far more varied than indicated by the economic and technological remains. Furthermore, by adapting to their environment, learning to utilize rather than drastically alter the natural resources, the native peoples were able to endure over 10,000 years. Only 400 years have passed since the first European set foot in the Lower Pecos and only time will tell how long our culture will survive.

General Readings - Paleoindians

Dibble, David S. and Dessamae Lorrain, Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas. Texas Memorial Museum Miscellaneous Papers, The University of Texas at Austin (1968).

General Readings - Archaic

Hester, Thomas R. (1980) Digging Into South Texas Prehistory. Corona Publishing Company. San Antonio.

General Readings - Late Prehistoric

Turpin, Solveig A., Seminole Canyon: The Art and the Archeology. Texas Archeological Survey Research Report 83, The University of Texas at Austin (1982).

General Readings - Historic Indians

Griffen, William B. (1969) Culture Change and Shifting Populations in Central Northern Mexico. Anthropological Papers of the University of Arizona 13, University of Arizona Press, Tucson.

Handbook of North American Indians, Vol. 10, Southwest (1983) esp. Campbell, T.N. Coahuiltecans and Their Neighbors pp. 343-358.

Hammond, George P. and Agapito Rey (1966) The Rediscovery of New Mexico 1580-1594. The University of New Mexico Press, Albuquerque.

John, Elizabeth A.H. (1975) Storms Brewed in Other Mens Worlds Texas A&M Press, College Station.

Schroeder, A.H. and D.S. Matson (1965) A Colony on the Move: Gaspar Castano deSosa's Journal 1590-1591. School of American Research, Alphabet Printing Company, Salt Lake City.

Newcomb, W.W. Jr. (1969) Indians of Texas. University of Texas Press, Austin.

General Readings - Pictographs

Griender, Terence (1966) Periods in Pecos Style Pictographs American Antiquity 31(5):710-720.

Jackson, A.T. (1938) Picture Writing of Texas Indians. The University of Texas Publications 3809, Austin.

Kirkland, Forrest W. and W.W. Newcomb, Jr. (1967) The Rock Art of

Texas Indians. University of Texas Press.

Newcomb, W.W. Jr. (1976) Pecos River Pictographs: The Development of an Art Form. in: Cultural Change and Continuity: Essays in Honor of James Bennett Griffin. C.E. Cleland, editor. Academic Press, New York.

Shafer, Harry J. (1977) Art and Territoriality in the Lower Pecos Archaic. Plains Anthropologist 19:228-230.

Turpin, Solveig A. (1983) Seminole Canyon: The Art and The Archeology. Texas Archeological Survey Research Report 83, The University of Texas at Austin.

Turpin, Solveig A. (1984) The Red Linear Style Pictographs of the Lowr Pecos River Region. Plains Anthropologist.

Turpin, Solveig A. (1985) The Red Monochrome Pictographs of the Lower Pecos River Region. Bulletin of the Texas Archeological Society.

General Readings - Social Structure

Lee, Richard B. and Irven Devore (1967) Man the Hunter. Aldine Publishing Company. Chicago.

Service, Elman R. (1962) Primitive Social Organization: An Evolutionary Perspective. Random House, New York.

Yellen, John E. (1977) Archaeological Approaches to the Present, Models for Constructing the Past. Academic Press. New York.

See also listings above for Newcomb, William W. (1969) and in Kirkland and Newcomb (1967).