



ARCHEOLOGICAL ASSESSMENT

OF

ALIBATES

NATIONAL MONUMENT

BY

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ARCHAEOLOGY RESEARCH PROGRAM

SOUTHERN METHODIST UNIVERSITY



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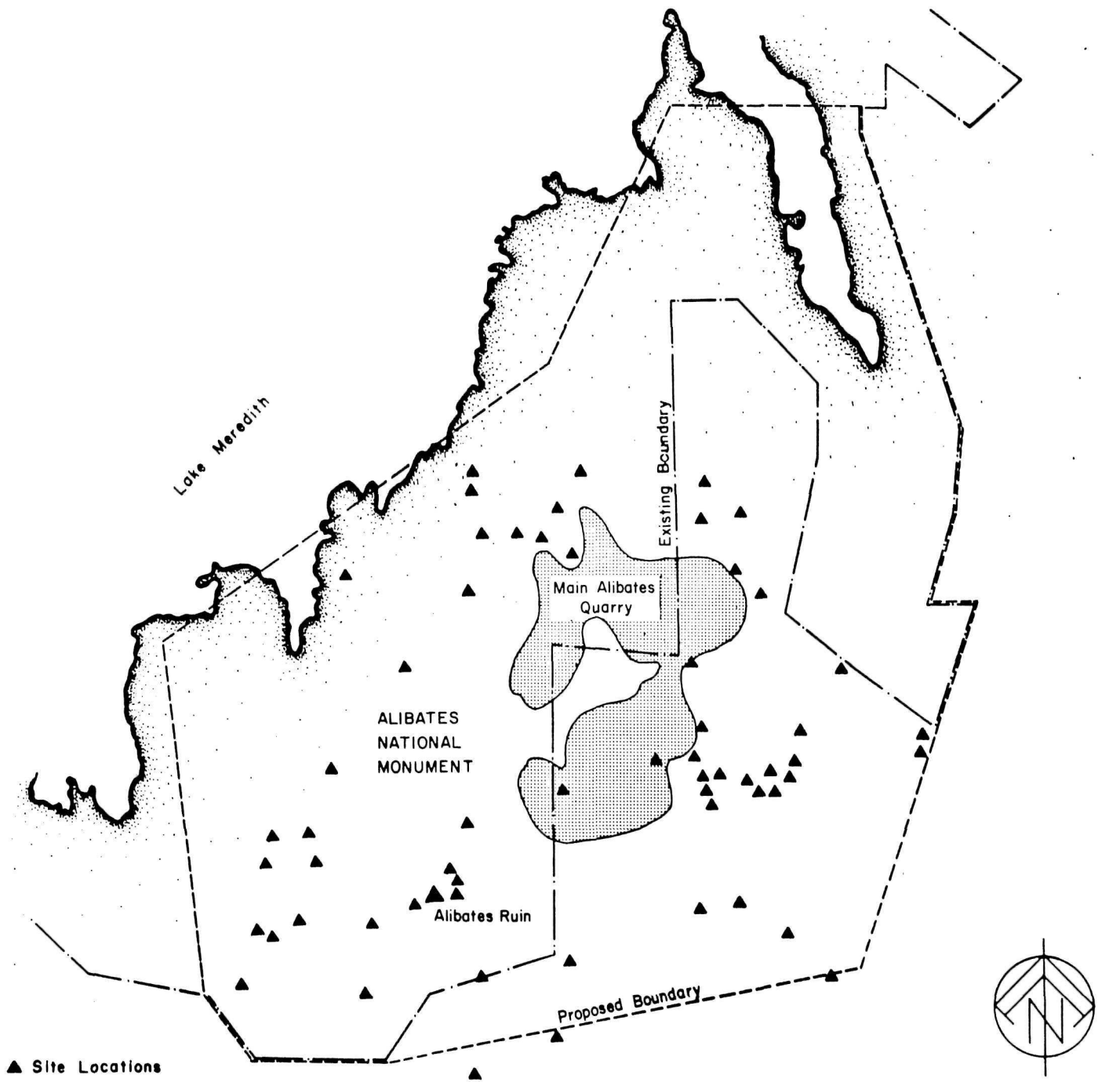
INTRODUCTION

In April of 1973 the Archaeology Research Program at Southern Methodist University undertook five projects to conduct literature and field survey assessments of the archaeological resources at five National Parks and Monuments. This report describes the results of an archaeological assessment of Alibates National Monument.

The objectives of this project were to synthesize the known literature on the prehistoric occupation at Alibates, define the major deficiencies in the literature, and discuss what might be done to correct these deficiencies. The objectives were accomplished by the following methods:

1. Compiling a thorough bibliography of all published reports concerned with the archaeology of the study area;
2. Spending one week in the field locating and evaluating sites;
3. Reviewing all literature dealing with Alibates and abstracting each work;
4. Identifying topic areas which are instrumental toward understanding the cultural systems of all prehistoric inhabitants;
5. Recommending how these deficiencies can be corrected;
6. Preparing a synthesis of the known archaeology at the study area.

The final purpose of this report is that it serves as a tool which will allow the National Park Service to estimate the nature and intensity of a research project which would provide a detailed, comprehensive knowledge of the prehistoric occupation at Alibates. This research project would not require total completion by one institution; in fact, the quality of information would be higher if various qualified institutions contributed to the total project. This type of project requires that an overall research design be compiled before field work is started and that an overseeing institution, namely the National Park Service, contract with other institutions to solve the various problems which have been explicitly defined in the research design.



SITE LOCATION MAP

Fig. 1.

ENVIRONMENT

Alibates National Monument is situated in the Canadian River Valley which dissects the short grass High Plains of the Texas Panhandle. Internally draining basins and playas form the basic drainage system of the High Plains, except for an occasional river such as the Canadian River, which has eroded a steep but wide valley through the Plains. The Canadian River with its alluvial soils and availability of moisture allows floral and faunal species indigenous to the more wooded biotic districts to the east to extend their range into the much drier environment of the Panhandle. This extension of plants and animals creates a mixture of ecological zones or an ecotone between the Plains and wooded areas to the east.

Alibates National Monument is in the Kansas biotic province (Blair 1950). The province is characterized by 59 species of mammals, 14 species of lizards, 31 species of snakes, a number of trees and a variety of grasses. Local variations in topography and micro-climate allow the ecosystem to be divided into three microenvironmental zones: the Plains; the Canadian breaks; and the moist-aquatic zones (Duffield 1970).

The flat Plains are dominated by short grasses, blue grama, buffalo grass, and snakeweed, but prehistorically the Plains were dominated by tall grasses of an unknown species (Archambeau 1963). The faunal species of this zone include bison, antelope, California jackrabbit, Thirteen-lined ground squirrel, prairie dog, Hispid pocket mouse, Hispid cotton rat, prairie vole, coyote, swift fox, badger, turkey vulture, red-tailed hawk, sharp-tailed grouse, bald eagle, sparrow hawk, mourning dove, great horned owl, burrowing owl, short-eared owl, white-necked raven, box turtle, and horned toad.

The Canadian breaks zone includes the steep canyon walls, slopes, and floodplains of the Canadian River and its tributaries. Alibates National Monument lies within this zone. The flora of this zone include juniper, yucca, nolina, mesquite, cottonwood, scrubby hackberry, elm, willow, wild china, plum, shinnery oak, blue grama, three-awn, broomweed, sand sage, and bluestem. The fauna species present are white-tail deer, little short-tailed shrew, eastern mole, big brown

bat, eastern cottontail rabbit, desert cottontail rabbit, Plains pocket gopher, chesnut-faced pocket gopher, Baired pocket mouse, Ord kangaroo rat, white-footed mouse, gray wood rat, white-throated wood rat, Mexican wood rat, kit fox, spotted skunk, striped skunk, bobcat, and brown thrasher.

The moist aquatic zone consists of water systems in either the Canadian breaks or the Plains. In the Plains it is the playas and surrounding areas, and in the breaks it is the Canadian River, its tributaries, and Lake Meredith. The fauna includes muskrat, raccoon, whistling swan, trumpeter swan, Canada goose, white fronted goose, mallard, gladwall, American pintail duck, green-winged teal, blue-winged teal, American widgeon, shoveler, redhead, ring-necked duck, canvasback, ruddy duck, American coot, American woodcock, snapping turtle, yellow mud turtle, western painted turtle, red-eared turtle, spiny soft-shelled turtle, spineless soft-shelled turtle, catfish, and drum.

The oldest geological deposit in the area is the Blaine Formation, composed of Permian shale, siltstone, gypsum, and dolomite. It is found in the upper reaches of the North and Salt Forks of the Red River. Above the Blaine Formation is the Quartermaster Formation which is found in the upper portion of the Canadian breaks zone. This resistant formation is the "caprock" of the High Plains in Texas. This Permian deposit contains sand, sandstone, siltstone, shale, gypsum, and dolomite. The dolomite of this formation was utilized by the prehistoric inhabitants to construct slab structures; Alibates "flint" is silicified dolomite from this formation. Shale, clay, siltstone, chert, and petrified wood compose the Trujillo and Tecovas Formations. These Canadian Valley deposits date to the Triassic Period and are found upstream from Lake Meredith and north of Amarillo. The Ogallala Formation overlies the Trujillo and Tecovas Formations and is composed of sand, silt, clay, gravel, and caliche. This Pliocene deposit represents a high, flat alluvial outwash from the Rocky Mountains. This deposit gives the Texas High Plains its flat character. Deposited over the flat Ogallala Formation is the Windblown Cover Sand which dates to the Illinoian glacial period and consists of sand, silt, and caliche nodules. Playas, the drainage system of the High Plains, deposited clays, silts, and sands. Fluvial terrace deposits consisting of gravel, sand, and silt were laid down during the Pleistocene.

These terrace deposits compose the upper terraces of the Canadian River and the floodplain deposits of its tributaries. Recently, Windblown Sand deposits composed of sand and silt have been deposited in sheets and in dunes sporadically throughout the area, and alluvium floodplain deposits have been collecting and comprise the sediments in the floodplain and first terrace of the Canadian River.

Table 1. Flora and Fauna of the Plains Zone.

Flora

Blue grama (Bouteloua oligostachya)
Buffalo grass (Bulbilis dactyloides)
Snakeweed (Xanthocephalum sacrothrae)

Fauna

Bison (Bison bison)
Antelope (Antilocapra americana)
California jackrabbit (Lepus californicus)
Thirteen-lined ground squirrel (Citellus tridecemlineatus)
Prairie dog (Cynomys ludovicianus)
Hispid pocket mouse (Perognathus hispidus)
Hispid cotton rat (Sigmodon hispidus)
Prairie vole (Microtus ochrogaster)
Coyote (Canis latrans)
Swift fox (Vulpes velox)
Badger (Taxidea taxus)
Turkey vulture (Cathartes aura)
Red-tailed hawk (Buteo jamaicensis)
Sharp-tailed grouse (Pediacetes phasianellus)
Bald eagle (Haliaeetus leucocephalus)
Sparrow hawk (Falco sparverius)
Mourning dove (Zenaidura macroura)
Great horned owl (Bubo virginianus)
Burrowing owl (Speotyto cunicularia)
Short-eared owl (Asio flammeus)
White-necked raven (Corvus cryptoleucus)
Box turtle (Terrapene sp.)
Horned toad (Phrynosoma sp.)

Table 2. Flora and Fauna of the Canadian breaks zone.

Flora

Juniper (Juniperus virginiana)
Yucca (Yucca glauca)
Nolina (Nolina microcarpa)
Mesquite (Prosopis glandulosa)
Cottonwood (Populus acuminata)
Scrubby Hackberry (Celtis occidentalis)
Elm (Ulmus alata)
Willow (Salix sp.)
Plum (Prunus sp.)
Shinnery oak (Quercus stella)
Blue grama (Bouteloua oligostachya)
Three-awn (Aristida sp.)
Broomweed (Schizachyrium scoparium)
Sand sage (Artemisia filifolia)
Blue stem (Andropogon hallii)

Fauna

White-tail deer (Odocoileus virginianus)
Little short-tailed shrew (Cryptotis parva)
Eastern mole (Scalopus aquaticus)
Big brown bat (Eptesicus fuscus)
Eastern cottontail rabbit (Sylvilagus floridanus)
Desert cottontail rabbit (Sylvilagus auduboni)
Plains pocket gopher (Geomys bursarius)
Chesnut-faced pocket gopher (Pappogeomys castanops)
Baired pocket mouse (Perognathus flavus)
Ord kangaroo rat (Dipodomys ordi)
White footed mouse (Peromyscus leucopus)
Gray wood rat (Neotoma micropus)
White-throated wood rat (Neotoma albigula)
Mexican wood rat (Neotoma mexicana)
Kit fox (Vulpes macrotis)
Spotted skunk (Spilogale putorius)
Striped skunk (Mephitis mephitis)
Bobcat (Lynx rufus)
Brown thrasher (Toxostoma rufum)
Robin (Turdus migratorius)

Table 3. Fauna of the Moist-Aquatic Zone.

Muskrat (Ondatra zibethicus)
Raccoon (Procyon lotor)
Whistling swan (Olor columbianus)
Trumpeter swan (Olor buccinator)
Canada goose (Branta canadensis)
White fronted goose (Anser albifrons)
Mallard (Anas platyrhynchos)
Gladwall (Anas strepera)
American pintail duck (Anas acuta)
Green-winged teal (Anas carolinensis)
Blue-winged teal (Anas discors)
American widgeon (Mareca americana)
Shoveler (Spatula clypeata)
Redhead (Aythya americana)
Ring-necked duck (Aythya collaris)
Canvasback (Aythya valisineria)
Ruddy duck (Oxyura jamaicensis)
American coot (Fulica americana)
American woodcock (Philohela minor)
Snapping turtle (Chelydra serpentina serpentina)
Yellow mud turtle (Kinosternon flavescens flavescens)
Western painted turtle (Chrysemys picta belli)
Red-eared turtle (Pseudemys scripta elegans)
Spiny soft-shelled turtle (Trionyx spinifer spinifer)
Spineless soft-shelled turtle (Trionyx spinifer mutica)
Catfish (Ictalurus sp.)
Drum (Aplodinotus grunniens)



Figure 2a. The main quarries at Alibates. Rock outcroppings are silicified dolomite (flint).



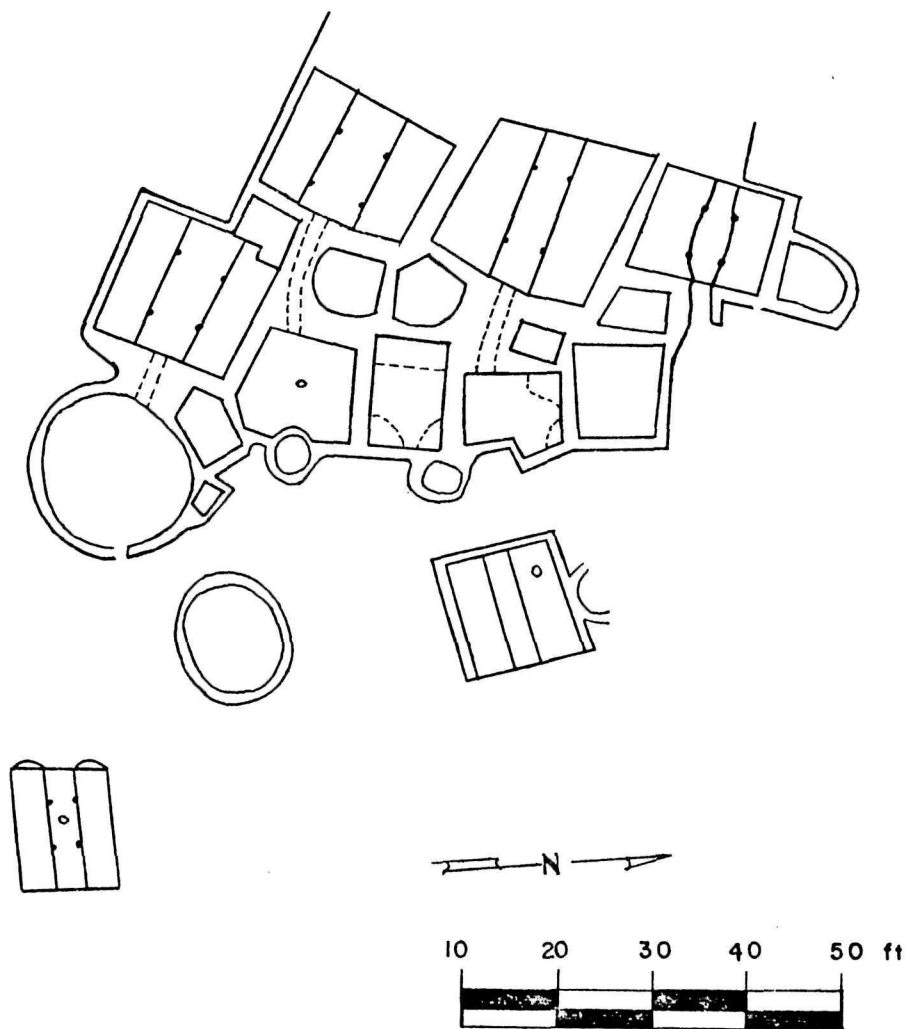
Figure 2b. View from the main quarries toward Alibates Ruin. Typical Canadian Breaks environment.

PREVIOUS ARCHAEOLOGICAL RESEARCH AT ALIBATES

The Alibates Ruin and Quarry were first noted by Floyd V. Studer in the later 1920's when conducting a survey of the Canadian River and adjacent areas. In 1929 J. A. Mason excavated at Alibates Ruin and the ruins were visited by W. K. Moorehead in 1931. In 1939-40 Baker and Baker excavated the Alibates Ruin assisted by a W.P.A. crew, but the Bakers never published the results. Hulda R. Hobbs published a brief summary of the Bakers' field work in 1941. In 1946 Alex Krieger published a synthesis of the known archaeology in the Texas Panhandle and suggested that the Pueblo ruins be classified as the Antelope Creek Focus of the Panhandle Aspect. Krieger organized this information into a comprehensive, systematic body and was the first person to do so. The remaining field work at Alibates National Monument has consisted of site surveys conducted under the auspices of the National Park Service. A number of articles (Bryan 1950; Green and Kelley 1960; Hertner 1964; Mewhinney 1965; Schaeffer 1958) have published articles concerning the Alibates Flint Quarries. The majority of the articles emphasize how little is known about the quarries and that reliable data are required about the quarries for a proper understanding of man's utilization of the quarries. The above is the sum total of archaeological research conducted at Alibates National Monument.



SITE LOCATION MAP
Fig. 3.



ALIBATES RUIN
Fig. 4.

PREHISTORIC CHRONOLOGY

A cultural sequence for Alibates National Monument and adjacent areas is illustrated below. Alibates demonstrates direct, reliable information of aboriginal occupation during only the Panhandle Aspect, but there are unsubstantiated data which strongly suggest a utilization of the Monument by man for the entire time range of human occupation in the area.

Paleo-Indian Stage - 9500-5500 B.C.

Archaic Stage - 500 B.C.-A.D. 950

Woodland Stage - A.D. 950-1250

Panhandle Aspect - A.D. 1250-1450

Plains Stage - A.D. 1450-1876

Paleo-Indian Stage - 9500-5500 B.C.

Sites which have exhibited artifacts from this period have been found at Blackwater Draw, Folsom, Plainview, Midland, Lubbock, Lipscomb, and Miami. These sites imply that small groups of people supporting themselves by gathering wild plant foods and hunting animals including extinct Pleistocene fauna lived in the area. There is evidence that the people of this period and all of the following periods utilized the flint resources within the Monument. There have been unsubstantiated reports that sites in the area have yielded Paleo-Indian material, but no sites have been formally studied and reported which have had a Paleo-Indian component within or near the Monument.

Archaic Stage - 5500 B.C.-A.D. 950

This stage is also poorly under-

stood, but a few sites in the general area have been studied. Three kill sites in the southeast Panhandle exhibited stemmed dart points and retouched flakes in context with bison bones. Another site, Little Sunday near Palo Duro Canyon, appears to be an Archaic campsite. Artifacts noted at Little Sunday were hearths, scrapers, dart points, drills, flakes, cores, metates, and manos. These sites only represent a minute manifestation of the Archaic peoples' cultural system. A representative view of the entire cultural system of the Archaic peoples is a necessity before an accurate description and explanation of this cultural period can be accomplished. This view of the entire cultural system is something which is not known not only for the Archaic Stage, but also of any cultural stage which is represented at Ali-bates.

Woodland Stage - A.D. 950-1250

This is a formative period of the Neo-American Stage. Agriculture is introduced in the area and a relation has developed between the peoples of the Panhandle and the pueblos of northern New Mexico. The Woodland Stage seems to be basically a Plains development which has spread to the Texas Panhandle. Lake Creek, the only reported Woodland site in the area, produced arrow points, manos, metates, scrapers, bison scapula hoes, conical bottomed pottery, burned rock, flakes and Puebloan pottery which is assumed to be trade ware. Nothing else is known about the people of this period.

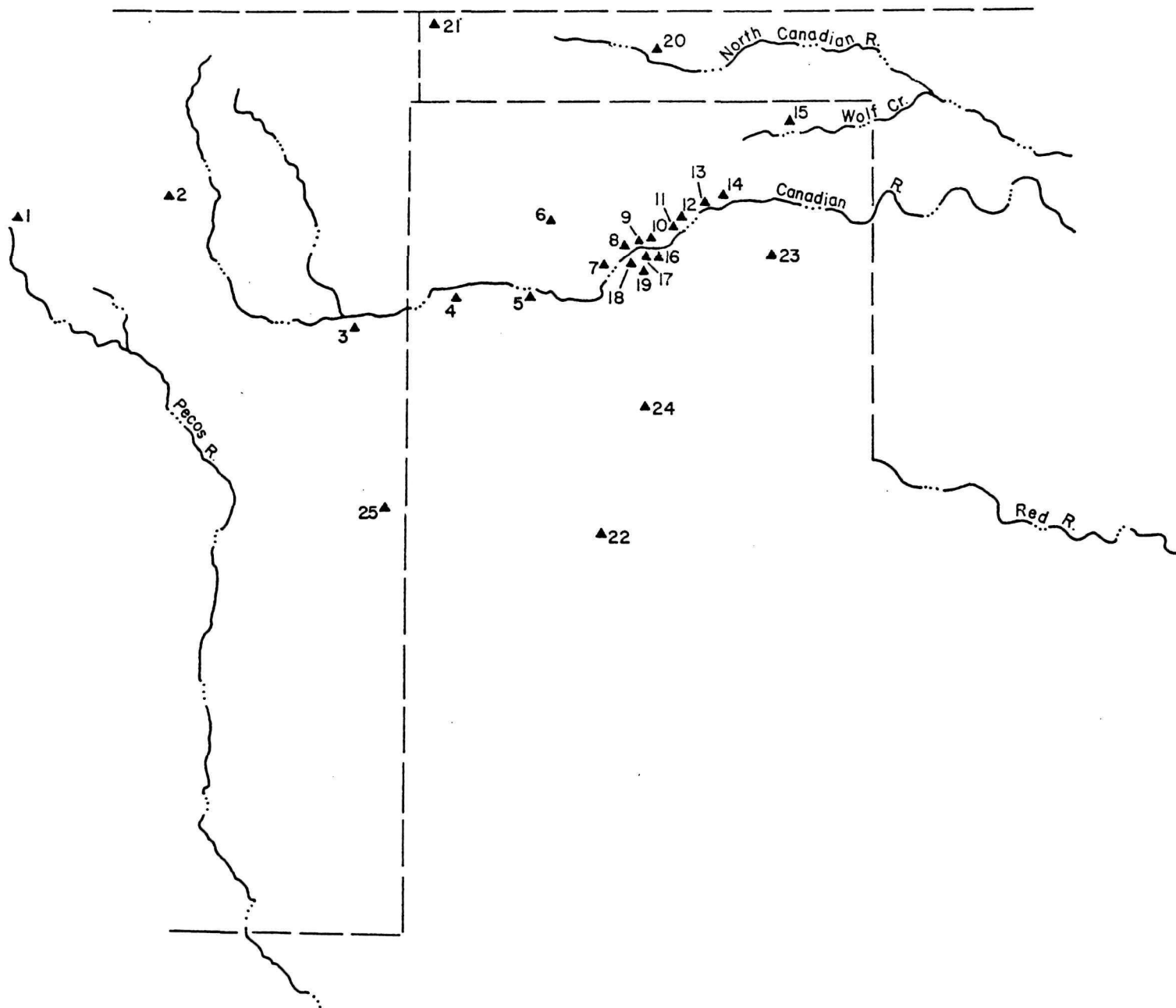


FIGURE 5.

MAJOR SITES IN THE TEXAS PANHANDLE

- | | |
|----------------------------|--------------------------------|
| 1. Pecos Pueblo | 14. King Ranch Ruins |
| 2. Mora | 15. Handley Ruins (Wolf Creek) |
| 3. Congden Ranch | 16. Antelope Creek Ruins |
| 4. Tierra Blanca | 17. Roper Site (Connor Site) |
| 5. Saddleback Ruins | 18. Ruin No. 55 |
| 6. Landergin Mesa | 19. Alibates Ruin and Quarry |
| 7. Footprint Site | 20. Stamper Ruins |
| 8. CR-1 | 21. Kenton Caves |
| 9. Spring Creek Site | 22. Plainview |
| 10. Medford Ranch Site | 23. Miami |
| 11. Cottonwood Creek Ruins | 24. Little Sunday |
| 12. Tarbox Creek Ruins | 25. Blackwater Draw |
| 13. Lake Creek | |

Panhandle Aspect - A.D. 1250-1450

This is the only stage which is definitely represented at Alibates. The people of this stage utilized an economy of hunting bison, antelope, deer, turkey, and other game; gathering wild plants which included acorns, persimmons, and cattails; farming corn, beans, and squash; and trading articles including flint for obsidian, pottery, turquoise, olivelli shells, and catlinite. They lived in large permanent villages, smaller outlying communities which were used in farming and gathering, occupied hunting camps, and conducted extensive quarry operations for flint. The villages are contiguous and isolated multi-room pueblos ranging from 20 to 100 rooms. The outlying communities are isolated rooms ranging from 1 to approximately 10 rooms. The architectural styles utilized were rectangular, semi-circular, and circular rooms which may or may not be connected; tunnelled entranceways; and stone enclosures. Features within the rooms include a centrally located fire hearth flanked by 4 post holes (roof supports?), plastered walls and floors, and occasionally a rectangular depression extending the full length of the room in the central third portion of the floor and a raised platform against the wall opposite the entrance. Construction methods used include 1 or 2 vertical rows of dolomite slabs placed into a mud-adobe matrix and occasionally with a few upper courses of horizontal masonry. Some of the structures display a course or two of vertical masonry and the remainder

of the wall was composed of upright posts. Burials are both flexed and semi-flexed. They are found inside and outside rooms and in stone lined cists. Grave goods are not common. The artifacts associated with sites of this period include arrow points, bone hoes, bone awls, bone digging tools, antler flakers, knives, scrapers, cores, flakes, drills, pipes, Borger Cordmarked pottery, Puebloan pottery, basketry, manos, metates, bone rasps, and grooved abrasion stones. There are numerous explanations which have been suggested concerning the question of origin of the Panhandle Aspect. One of the oldest explanations suggested that the "buried cities" of the Texas Panhandle had developed before and were in fact ancestral to the Pueblos of the Southwest (Moorehead 1931). Hobbs suggested that the origin of the Panhandle Aspect culture had developed from the Caddo of east Texas and Oklahoma. One of the more recent hypotheses states that the basic Panhandle culture originated in southeast Colorado with the Graneros Focus, A.D. 450-750 (Campbell 1969). The Graneros Focus and other regional variants developed into a full-blown Panhandle-like culture, the Apishapa Focus, which persisted from A.D. 1000 to 1300 in the Chaquaque Plateau. Then a drought ca. A.D. 1300 forced the people into a more watered environment, the Panhandle of Texas and Oklahoma. In the Panhandle area the former Apishapa Focus acculturated various Plains traits, probably from the Custer Focus, and to a lesser extent the Upper Republican peoples. Around

A.D. 1450 there was another drought which forced the Panhandle Aspect peoples into a wetter environment, possibly central Kansas. Campbell hypothesizes that the Panhandle Aspect peoples in central Kansas have become known as the prehistoric Great Bend Aspect and the historic Quivirans. It is believed that the Quivirans were in part the ancestors of the modern day Wichita. Another recent hypothesis states that from A.D. 850-1250 in western Nebraska the Upper Republican peoples flourished in a relatively moist environment while the Panhandle region was dry. This climatic stage is known as the Neo-Atlantic episode (Bairreis and Bryson 1965a, 1965b, 1966; Duffield 1970). From A.D. 1250-1450 or 1500 the Pacific climate episode took place which marked a drying trend in the central Plains but the Panhandle region was more moist. It is suggested that a portion of the Upper Republican people migrated into the southern Plains and the Caddoan area of eastern Oklahoma and Texas. These areas were moist at this time and the archaeology reflects a relationship with a Plains adapted culture. In the Panhandle region the people developed some relations with the northern New Mexico Pueblos and the northern Jornada peoples. From A.D. 1450-1880 the Neo-Boreal episode took place which witnessed a drought in the Panhandle region and more moist conditions in the northern latitudes. During this time there was a population shift to the wetter climates. It appears that, in part, both of the more recent hypotheses are valid. Paleoecological evidence

indicates that a long term drought did occur in the central Plains during the late 13th century. This drought apparently initiated a migration into environments which could support an agriculturally based subsistence system. During this time the Panhandle region witnessed a population explosion which was probably due to people moving from both the Chaquagua Plateau and the central Plains. This mixture of Apishapa Focus and Upper Republican Focus traits are present in the Panhandle from A.D. 1250-1450. During this time the Panhandle Aspect peoples developed relations (trade?) with the Pueblos of northern New Mexico, the northern Jornada peoples, and possibly with the Caddo. This adaptation was apparently terminated by a drought which is suggested by a thick mantel of wind blown sand covering the Panhandle Aspect occupation zones and through faunal evidence. In 1946 Krieger proposed the characterization of the Texas Panhandle sites as the Antelope Creek Focus of the Panhandle Aspect. Culture Complexes and Chronology in Northern Texas defines this focus by trait lists. In 1950 Watson defined the Optima Focus of the Panhandle Aspect. The major difference between these two foci was the presence of non-contiguous room villages in the Optima Focus of Oklahoma, but not in the Antelope Creek Focus of Texas. Excavations since the early 1950's have revealed the presence of non-contiguous roomed villages in the Antelope Creek Focus area. Until a more valid definition of the two foci can be proposed, the

usage of Panhandle Aspect for both Antelope Creek and Optima Foci is considered more relevant and useful.

Plains Stage - A.D. 1450-1876

This stage is characterized by nomadic tribal groups gathering wild plant foods and hunting bison, antelope, deer, and other game animals. No reports dealing with Alibates have adequately studied this period. The only direct information is from historical references and an occasional mention of archaeological material in deposits above the ruins. One possible Apache site has been recorded in the area. The artifacts found are flakes, hearths, projectile points, scrapers, and circular rings of stones (tipi rings?). The Plains Stage includes the introduction of the horse, European trade goods, and Anglo military campaigns which terminated the American Indians' occupation of the area.



Figure 6a. The Canadian Breaks and Aquatic Zones as viewed from the Canadian riverbed. Large sites are usually situated on the hill tops.



Figure 6b. A wall section illustrating the vertical double row slab construction. Site 54.

TYPES OF SITES IN ALIBATES

Legend:

A: Panhandle Aspect

D: Historic

B: Workshop/Quarry

E: Campsite

C: Other

F: Petroglyph

SITE NUMBER	SITE NAME	TYPE	RECORDED BY
39	A131	A	N.P.S.
49	41PT9	B	Davis
50	A624	A	W.T.S.U.
51	A45	C	N.P.S.
52	41PT11	A	Studer
53		F	Studer
54	Alibates Ruin	A	Studer
55		A	Studer
56	41PT12	C	Davis
57	41PT5	B	Davis
58	41PT6	B	Davis
59	41PT4	B	Davis
60	41PT7	B	Davis
64	41MO2	A	Davis
75	A608	B	N.P.S.
83		F	N.P.S.
87		A	N.P.S.
99		B	N.P.S.
100	Alibates Flint Quarries	B	Studer
102		B	N.P.S.
103		B	N.P.S.
104		B	N.P.S.
105		B	N.P.S.
106		B	N.P.S.
107		B	N.P.S.
108		B	N.P.S.
109		B	N.P.S.
110		B	N.P.S.
111		B	N.P.S.

SITE NUMBER	SITE NAME	TYPE	RECORDED BY
112		B	N.P.S.
113		B	N.P.S.
114		B	N.P.S.
115		B	N.P.S.
116		B	N.P.S.
134		C	N.P.S.
157		B	N.P.S.
163		B	N.P.S.
199		C	N.P.S.
200		B	N.P.S.
213		B	N.P.S.
214		B	N.P.S.
229		B	N.P.S.
230		B	N.P.S.
235		B	N.P.S.
236		B	N.P.S.
237		B	N.P.S.
238		E	N.P.S.
260	Allie Bates Dugout	D	N.P.S.
261		B	N.P.S.
264		A	N.P.S.
265		A	N.P.S.
266		A	N.P.S.
269		D	N.P.S.
272		A	N.P.S.

TOTALS:

A: 11

B: 34

C: 4

D: 2

E: 1

F: 2

RECOMMENDATIONS

The most pressing archaeological problem at Alibates National Monument is the need of an accurate description and explanation of all occupation periods that are represented. These descriptions and explanations must be based on a knowledge of the entire cultural system of each stage, intra-area relations, and paleoecological data.

The suggested method which would allow for an accurate statement to be formulated for all periods of occupation is as follows:

1. An intensive systematic survey should be conducted. The survey work to date has been sporadic and with undefined precepts concerning data collection; this has led to unsystematic recording of data and incomplete coverage of the area. Most of the site survey forms at the Park Headquarters do not have enough information for an adequate assessment of the archaeology. The survey should be conducted with four factors in mind: a) applying the information gained on the survey toward settlement pattern studies; b) formulating a set of problem-oriented, testable hypotheses concerned with the relationship within and between cultural systems; c) selecting sites for excavations which will supply the information necessary to test the hypotheses; and d) locating and sampling all flint outcroppings. The survey should be non-destructive in nature and no collections should be taken. The budget has been calculated for the monument at its present size (2,265 acres), and any addition to size would affect the total budget. The crew, consisting of a research archaeologist and 3 student assistants would spend two weeks in the field. The research archaeologist would spend one month evaluating the data and writing the report.
2. A comprehensive site report should be prepared for all outstanding excavation projects, such as Alibates Ruin and Antelope Creek Ruin. These sites have not been thoroughly studied. The information from these sites should be made available to the public. This

report should evaluate all previous work conducted at the sites and prepare a manuscript that describes this work. These previously dug sites will play a dominate role in the cultural reconstruction of the Panhandle and a detailed report is essential. All excavated materials, field notes, and photographs from these sites should be located, compiled, and studied. Hypotheses developed in stage 1b should be tested and a manuscript produced.

3. Sites which have been selected in stage 1c should be studied. The research should be aimed toward testing the specific problems formulated in stage 1b. The research method would ultimately be excavations, but much can be learned by other non-distinctive means. Resistivity meter or proton magnetometer surveys could contribute much information toward the physical aspects of a site, such as walls, pits, floors, and other architectural features. An electronic survey could save much time and money when and if excavations are conducted at a site. Detailed analysis and complete reporting should quickly follow all stages of research. No cost estimates have been made for these studies, but should be included with the report describing the site survey, along with sites recommended for excavation.

The archaeological investigation should, in fact, be multidisciplinary in nature. Detailed paleoecological studies should be coordinated with the archaeological studies to allow for complete descriptions and explanations of the cultural systems. Soil, pollen, and micro and macro faunal studies should be conducted. At present, detailed systematic environmental reconstructions have not been conducted for the Texas Panhandle. The potentials and ramifications of such research have been well demonstrated by Wendorf (1961), Duffield (1970), and Bairreis and Bryson (1965a, 1965b, 1966).

Another problem which is readily apparent at Alibates is tracing flint or silicified dolomite to its source. It is not known if flint can be "traced", but the achievement of tracing would answer certain important questions which are related to man's distribution of Alibates flint. There are many instances in the literature which speak of flint at a particu-

lar site as being Alibates flint and derived by trading or that the quarries at Alibates were within the seasonal range of a prehistoric group; there are no substantive data which support these statements. If it is possible to link flint to the particular outcroppings from which it was removed, then the archaeologist may speak of trade systems or the ranges of a prehistoric people in relation to the Alibates outcroppings. At present this is impossible. The solution to this problem would begin with locating all outcroppings of silicified dolomite and/or flint in the area. Locating flint resources has been incorporated into the site survey mentioned above. An intensive analysis of each source by a specialist (chemist, physicist) should follow. The economic ramifications of such a project has been estimated by Cummings in Alibates Development Outline, and is stated below.

The last recommendation is concerned with the establishment of a public education system at Alibates. This was the basic theme for the creation of Alibates National Monument. This public education system could be manifested in a variety of ways as has been suggested in numerous reports (Cummings 1969; Hertner 1963; National Park Service 1963; Potter County Historical Survey Committee 1964). Not only would the education system have definite value for the general public, but also for students of archaeology. An educational possibility would be the restoration of a Panhandle Aspect dwelling for public display. Restoration could be incorporated into the excavation project if a Panhandle Aspect site was chosen for excavation. The relevancy of restoration could conceivably warrant the excavation of a Panhandle Aspect site, but this would still require the formulation of a research design. The possibility may also exist of restoring a structure which has been recently excavated. Estimates may be acquired from the National Park Service through the Tucson Ruin Stabilization Unit or the Santa Fe Office. Whatever methods employed, some type of public education should be incorporated at Alibates National Monument.

ALIBATES SURVEY
PROPOSED BUDGET

Salaries and Wages	
Off Campus	
Research Archaeologist	
10 mandays @ \$32.50	\$325.
Student Assistants (3)	
10 mandays @ \$2.50 hour	600.
On Campus	
Principal Investigator	
5 mandays @ \$50.	250.
Research Archaeologist	
20 mandays @ \$32.50	650.
Secretary	
50 hours @ \$2.75	137.50
Employee Benefits	136.25
Supplies and Services	150.
Publication (300 copies)	2000.
Travel and Perdiem	
10 mandays @ \$18	640.
Vehicle Expenses	
1 Carryall @ \$15 day	
plus 18¢ mile for 2500 miles	450.
	<hr/>
TOTAL DIRECT COSTS	\$5,338.75
Overhead	
On Campus	541.58
Off Campus	252.52
	<hr/>
TOTAL PROJECT COST	\$6,132.85

PREVIOUS EXCAVATION ANALYSIS
PROPOSED BUDGET

Salaries and Wages	
Off Campus	
Research Archaeologist	
9 months @ \$650.	\$5850.
Student Assistant	
1040 manhours @ \$2.50	2600.
On Campus	
Principal Investigator	
1 month @ \$1000.	1000.
Research Archaeologist	
3 months @ \$650.	1950.
Secretary	
160 hours @ \$2.75	440.
Employee Benefits	924.
Supplies and Services	1000.
Publication	2000.
Travel and Perdiem	
9 months @ \$15.	2700.
Vehicle Expenses	
1 Carryall for 12 months	
@ \$1500 plus 10¢ mile, 10,000 miles	<u>2500.</u>
TOTAL DIRECT COSTS	\$20,964.
Overhead	
On Campus	1769.58
Off Campus	<u>2306.85</u>
TOTAL PROJECT COST	\$25,040.43

FLINT ANALYSIS

Total Project Cost (1969)	\$13,500.
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TOTAL PROJECT COST

Survey	\$6,132.85
Previous Excavation Analysis	25,040.43
Flint Analysis	<u>13,500.00</u>
TOTAL FOR ALL PHASES	\$44,673.28

ABSTRACTS

This section contains a summation of each important report. Many of the manuscripts which are in the bibliography have not been abstracted because they were not deemed relevant or that work was inaccessible. The abstracts are ordered alphabetically by the authors' last names, the reference is stated and the abstraction follows below. The information contained in these works was utilized to draft the recommendations for further archaeological investigation.

Baerreis, D. A. and R. A. Bryson
1965 Climatic Episodes and the Dating of the Mississippian Cultures. The Wisconsin Archeologist 46:4:203-220.

The authors summarize paleoclimatic data to propose a scheme of climatic episodes in North America. The scheme is particularly relevant in the Neo-Atlantic episode (A.D. 800-900). During this time the Great Plains were enjoying an influx of moist tropical air which allowed optimal conditions for agriculture to the Upper Republican people. Around A.D. 1250 a change took place in the atmospheric circulation which reduced the rainfall in the Central Plains but increase rainfall in the Texas and Oklahoma Plains. This fluctuation is called the Pacific climatic episode and it continued until A.D. 1450-1500. The following climatic fluctuation, Neo-Boreal (A.D. 1450-1880) reverted to the climatic conditions of the Neo-Atlantic episode.

Baerreis, D. A. and R. A. Bryson
1965 Historical Climatology and the Southern Plains: A Preliminary Statement. Bulletin of the Oklahoma Anthropological Society 13:69-75.

The authors have utilized a number of new radiocarbon dates to reinterpret various Texan and Oklahoman sites. Recurrent periods of both deficient and sufficient rainfall have had marked affects on the movement of peoples in the Central and Southern Plains. Two basic cultural horizons, also representing moisture periods, have been delimited in the Central Plains. The first horizon is represented by the Plains Woodland

occupation (A.D. 200-700) which was terminated by a drought in the Central Plains. The Upper Republican culture, representing the second horizon, was manifested during the moist conditions, but was terminated due to drought conditions (ca. A.D. 1250). This date coincides with two distinct changes in prehistoric cultures of Texas and Oklahoma. At approximately A.D. 1250 the Panhandle Aspect of the Southern Plains begins to flourish. There may have been some movement from the Upper Republican area to the Panhandles of Texas and Oklahoma. Another cultural shift which took place at this time was the transition from Gibson to Fulton Aspects in the Caddoan area. Also, the Fulton Aspect represents an increase in classic Plains cultural traits in comparison to the Gibson Aspect. The authors suggest that there may be a relation between the depopulation of the Central Plains during Upper Republican times and the cultural transitions in the Panhandles of Texas and Oklahoma and the eastern portions of these states.

Baerreis, D. A. and R. A. Bryson

1966 Dating the Panhandle Aspect Sites. Bulletin
 of the Oklahoma Anthropological Society 14:
 105-116.

The authors have reappraised the dates derived from Pueblo trade pottery and compared the results with radiocarbon dates from Panhandle Aspect sites. The six types of Southwestern pottery and the authors reappraisal of their temporal distribution are listed below.

Abiquiu Black-on-Gray (Biscuit A)	A.D. 1370-1430
Agua Fria Glaze-on-Red (Glaze I Red)	A.D. 1325-1400
Cieneguilla Red-on-Yellow (Glaze I Yellow)	A.D. 1325-1400
St. Johns Polychrome	A.D. 1000-1250
Rowe Black-on-White	A.D. 1325-1375
Lincoln Black-on-Red	A.D. 1280-1410

The authors conclude that from A.D. 1370 to 1400 was a period of intensive contact between the Panhandle Aspect and Southwestern groups. This contact is not only suggested by the occurrence of Southwestern pottery in the Panhandle, but also by the presence of Alibates flint, bison scapula hoes, alternately beveled knives and other Plains traits in Pueblo and Mogollon sites. The radiocarbon dates were run by laboratories at the University of Wisconsin and the University of Texas. A summation of the data (Table 2 of the report) suggests a clustering from A.D. 1200-1500. By comparing the two dating systems, Baerreis and Bryson suggest that the Panhandle Aspect began approximately A.D. 1200-1250 and terminated between A.D. 1440-1500.

Campbell, R. G.

1969 Prehistoric Panhandle Culture on the Chaquaqua Plateau, Southeast Colorado. Unpublished Ph.D. Dissertation, University of Colorado.

Campbell proposes that the prehistoric inhabitants of the Chaquaqua Plateau were the ancestors of the Texas and Oklahoma Panhandle Aspect peoples. The gradual development of the Panhandle Aspect Culture is present in southeastern Colorado, but not in Texas or Oklahoma. The first known contact the people of the Chaquaqua Plateau had with the Texas Panhandle was during the Lake Archaic Stage (500 B.C.-A.D. 200) when Alibates "flint" is present in sites in southeastern Colorado. Also during this period, crude stone enclosures begin to be constructed in Colorado. The Middle to Late Prehistoric Transition Stage (A.D. 200-450) marks a mixture of Archaic material with Plains Woodland material. Dart and arrow points, cord marked pottery, and Alibates flint are being used.

In the northwest Chaquaqua Plateau the Graneros site, dated to A.D. 450±55 contains Woodland pottery, circular pit houses, and maize. Campbell suggests that from the Graneros Focus the basic Panhandle culture develops. It should be noted that from A.D. 1000-1300 in the northwest Chaquaqua Plateau, cord marked pottery, single and double vertical row slab foundation structures, and single and contiguous roomed structures were being constructed.

The Initial Plains Woodland Stage (A.D. 450-750) in the southeastern Chaquaqua Plateau demonstrates an increase in Alibates flint, Woodland pottery, and the appearance of single circular rooms with horizontal slab foundations. Campbell suggests that this is a regional variant of the Graneros Focus. The Terminal Plains Woodland Stage (A.D. 750-1000) displays stone enclosures with both single and contiguous circular rooms.

The Early Panhandle Stage (A.D. 1000-1300), which Campbell proposes the name Apishapa Focus, witnessed a population explosion. The number of sites rise from 20 in the preceding stage to 68 for the Apishapa Focus. Sites are located near farmable land and in "defensive locations". Also during this period, five varieties of maize were found. Campbell states that during the late 1300's a drought occurred and the Chaquaqua Plateau was depopulated. The model suggests that the agriculture dependent people were forced by the drought across the 20 inch rainfall line, and that these people continued to

live in the canyon topography that is common of the southeastern Chaquagua Plateau. Thus, these people settled in the major valley systems of the Texas and Oklahoma Panhandles where there was enough moisture to raise crops and the canyons provided a suitable habitat. The differences between the Panhandle culture of Texas and the Apishapa Focus can be explained as a response to local environmental factors and the development of new cultural contacts. Many of the traits of the Panhandle Aspect peoples can be traced to Plains adapted groups such as the Custer Focus or the Upper Republican group. It is suggested that from the Plains groups certain traits such as rectangular rooms, tunneled entranceways, central firepit and four post holes, sub-surface storage pits, alternately beveled knives, and bison scapula hoes were diffused to the Panhandle groups.

Campbell states that in the mid 1400's drought occurred that stimulated another migration from the Texas and Oklahoma Panhandles to the central Kansas Arkansas River. Thus, the Panhandle Aspect peoples became known as the Great Bend Aspect and are thought to be historically represented by the Wichita Indians.

After the Apishapa Focus in the Chaquagua Plateau, the Terminal Prehistoric Stage (A.D. 1300-1500) took place. Two periods are recognized from this stage. The first is characterized by a few rectangular enclosures, Upper Republican pottery, and Alibates flint. Campbell suggests that Panhandle Aspect peoples were moving back into the area for brief periods possibly to hunt. The second period is characterized by both raised "earth rings" and "spaced stones" which are assumed to be tipi rings. These types of structures appear about A.D. 1500 and are probably Apache in origin since Apaches are documented to the south one hundred years later.

The next stage in the Chaquagua Plateau is the Proto-Historic Stage (A.D. 1500-1750). The major type of sites are tipi rings probably from the Plains Apache. There is also an increase in site numbers possibly representing an increase in population. The final stage is the Historic Indian Stage (A.D. 1750-1875) and is noted by classic Plains groups of Apache, Arapahoe, and Cheyenne.

Crabb, M. L.

1968

Some Puebloan Trade Pottery from Panhandle Aspect Sites. Bulletin of the Texas Archeological Society 38:83-89.

Fifteen types of trade pottery have been recorded from eleven sites in the Texas and Oklahoma Panhandle. The time range suggested by the occurrence of these sherds is from A.D. 1200-1600 with a mode of A.D. 1250-1400. Crabb suggests a sequence through time of sites with no "rock structures" developing to sites with isolated room structures ending with sites with contiguous roomed structures. This sequence is subject to discrepancies by earlier and/or greater influence from the Pueblos.

Davis, W. A.

1962

Appraisal of the Archeological Resources of Sanford Reservoir. Report submitted to the National Park Service.

An archaeological reconnaissance of Lake Meredith which reports 51 sites; 26 of the prehistoric sites were attributed to the Panhandle Aspect, 3 sites are of Archaic origin, 1 site has both Panhandle Aspect and Archaic components, and 21 sites are of unknown cultural affiliations. Davis recorded 25 ruin sites, 11 open campsites, 12 quarry and workshop sites, 2 rock shelters, and 1 site which appears to be both a ruin site and at another level an open campsite.

Duffield, L. F.

1970

Some Panhandle Aspect Sites in Texas: Their Vertebrates and Paleoecology. Unpublished Ph.D. Dissertation. Department of Anthropology, University of Wisconsin.

The author has analyzed the vertebrate remains at ten Texas Panhandle Aspect sites. Alibates 28 (Ruin), Antelope Creek 22 (Ruin), Antelope Creek 22A, Antelope Creek 24, Medford Ranch, Spring Canyon, Pickett Ruin, Roper, Spring Canyon, and Canyon City Club Cave. The data suggest that bison were the most important food animals, and deer and antelope were utilized as secondary food sources. The Panhandle Aspect peoples preferred female bison four years of age and older as prime food animals. Butchery information suggests that bison were being killed and the axial skeleton was being removed. The meat, skin, and foot bones were taken back to the sites. Also tibulae and scapulae were kept for tools. At the Pickett Ruin a "disproportionately large number" of left front limb bones were found. Duffield interprets this as the process of food sharing with neighboring groups. Also the Spring Canyon site and Sanford Ruin contained a high number of bison toe elements while the Pickett Ruin and Roper site were low in toe elements. This may be indicative of sites where hide processing took place.

Information concerning environmental zone exploitation suggests that at Alibates Ruin the people utilized the Canadian Breaks, the Plains, and aquatic systems. At Antelope Creek Ruin the Plains were being exploited most often. At Spring Canyon all of the zones were being utilized, with an emphasis on the Canadian Breaks. The Roper site demonstrates exploitation of the Breaks and Plains most often and the same situation is present at Sanford Ruin.

The Panhandle Aspect sites demonstrate that the greater the reliance on deer, the less the people relied on bison. Duffield suggests that this is related to the availability of these animals and the effort required to hunt the different species. Duffield implies that bison were being killed and butchered a considerable distance from the Alibates Ruin. The people of the Antelope Creek Ruin were not traveling quite so far as the Alibates people but further than the people who populated Antelope Creek 22A.

It appears that the small sites such as the Roper and Pickett Ruin, were inhabited in the summer agricultural sea-

son while the larger villages such as Alibates or Antelope Creek Ruin were occupied year-round with an emphasis of population in the winter. This can be explained by the possibility that in the summer people were spending much of their time at the small agricultural sites.

Duffield suggests that fluctuations in bison and antelope data mirror fluctuations in the climate and environment. The Panhandle Aspect began during a fairly moist period, but it was gradually becoming drier. At approximately A.D. 1300-1350 there was a marked drought. This drought caused the bison herds to decrease and the antelope to increase in numbers. Also, certain wet adapted microfaunal species are present in the earlier periods but not the later. Duffield suggests that it was this drought which forced the Panhandle Aspect peoples to abandon the area.

Duffield states that during a time when the Texas Panhandle had sufficient water, western Nebraska was suffering from a drought and it is possible that some migrations from the Upper Republican peoples to the Texas Panhandle took place. The Upper Republican site of Mowry Bluff was occupied from A.D. 1160-1180 and the faunal information indicates somewhat moist conditions. Ash Hollow Cave in Nebraska dates to A.D. 1210-1334 and the fauna demonstrates a dry environment. At A.D. 1240 \pm 70, the Pickett Ruin fauna indicates a moist climate in the Texas Panhandle. Thus, the Canadian River Valley offered the necessary complexity and abundance of physical and biological resources to the drought ridden Upper Republican people.

It should be stated that Duffield was working with small samples and many of the samples were collected without any concern to rigorous methodology.

Green, F. E.

1967 Report on Archaeological Salvage in the Sanford
Reservoir Area. Report submitted to National
Park Service, No. 14-10-0333-1126.

A report on excavation carried out in 1963 and 1964. Six sites were excavated: HC-19, MO-7, MO-5, PT-8, PT-29, and PT-25. Two of the sites were open sites (MO-5 and PT-29) and the remainder were Antelope Creek Focus sites. MO-5 and PT-29 were a mixture of 2 or more periods of occupation and may have affiliations with Antelope Creek Focus and Lake Creek Focus, or even earlier periods. Green discusses a settlement pattern for Antelope Creek Focus peoples which hypothesizes that there are large multi-room pueblos at varying distances from each other, all on major tributaries of the Canadian River. In between the major pueblos are small single to 5 room structures which represent "outlying farming communities". MO-7, PT-8 and PT-25 and the three sites excavated by Duffield fit this model as "outlying farming communities". Also he hypothesizes that the single room structure, which is a Plains-Woodland characteristic, developed in a few places to a multiroom pueblo after contact with the northern New Mexican pueblos. The single room structures continued to be utilized but the center of the culture was based at the multi-room pueblos.

The economy of the Antelope Creek Focus peoples was based on agriculture, gathering, and hunting. There is evidence that corn, beans, squash, grain, acorns, persimmons, and cattails were utilized. Bison, deer and antelope were being hunted.

Four radio-carbon dates were collected from PT-25; these range from A.D. 1530 \pm 80 to A.D. 1290 \pm 70.

Green, F. E. and J. H. Kelley

1959 Comments on Alibates Flint. American Antiquity
25:3:413-414.

The authors state that there are many sources for the red, white or gray banded flint other than Alibates. It is a mistake to assume that flint which possess these features has been mined from the Alibates quarries, for there are other areas where this type of flint may be found.

Hobbs, Hulda R.

1941 Two Texas Panhandle Ruins. El Palacio 48:6:121-29.

Hobbs describes the Alibates Ruin as having three types of rooms - large rectangular rooms with small semi-circular rooms attached to each side of the entrance way and the third as being circular and isolated from the main body of rooms. The Alibates Ruins exhibit the standard wall construction of two rows of verticle slabs for a course or two and occassionally horizontal masonry above. Trade artifacts found at Alibates include sherds of St. Johns Polychrome, Agua Fria Black-on-Red, Cieneguilla Glaze-on-Yellow, and one incised sherd which Hobbs believes to be Caddoan, obsidian, turquoise, and olivella shells. Hobbs believes that the Panhandle Ruins represent an extension of the Caddoan culture.

Krieger, Alex D.

1946 Culture Complexes and Chronology in Northern Texas, With Extension of Pueblo Datings to the Mississippi Valley. University of Texas Publication No. 4640.

Krieger attempts to define the Texas Panhandle ruins on the Canadian River and link them to other areas where cultural sequences are known in more detail. He proposes the usage of the Midwestern system of nomenclature and suggests the naming of the Panhandle Ruins as the Antelope Creek Focus.

A review of previous archaeology which describes work done by Hobbs, Holden, Johnson, Lowery, Mason, Moorehead, Steward and Studer is discussed. Four hypotheses are introduced which attempt to explain how the Antelope Creek Focus developed, and their relation to peoples in other areas. Krieger defines the Antelope Creek Focus by a list of traits. An economy of hunting (bison, antelope, deer, turkey) and farming (corn) was utilized by these people. The villages were located in "defensive" situations and consisted of an irregular one story block of rooms with single room structures separated from the main group of rooms. The walls were constructed by placing verticle slabs of rock in two parallel rows, about two feet apart. The space in between was filled with adobe and rubble. Burials have been found inside and outside rooms, both flexed and semi-flexed. Pottery is usually the cord marked type (Borger Cord Marked), but there is also trade pueblo pottery (Lincoln Black-on-Red, Glaze A, Cieneguilla Glaze-on-Yellow, Agua Fria, Glaze A, St.

Johns Polychrome). Manos, metates, bed-rock mortars, hammerstones, scrapers, drills, alternating beveled diamond shaped bifaces, triangular arrowpoints, and dart points are the lithic materials associated with the ruins. Bone flaking tools, awls, and eyed needles are also found.

Krieger discusses cultural affiliations of the Antelope Creek Focus with 2 peoples: Upper Republican Focus and northern New Mexico pueblos. These affiliations are based on similar characteristics between the architecture, pottery, lithics and other characteristics. All three societies are said to be basically contemporaneous.

Moorehead, W. K.

1931 Archaeology of the Arkansas River Valley. New Haven, Yale University Press.

The report on the author's expedition up the Arkansas River and its major tributaries, the Canadian, Cimarron and North Canadian Rivers. Moorehead visited the Wolf Creek Ruins, Alibates Creek Ruins, Antelope Creek Ruins, Tarbox Creek Ruins, Cottonwood Creek Ruins, the King Ranch Ruins, the Landergin Ranch Ruins, the Congdon Ranch Ruins and the Ruins at Mora. Moorehead proposes that there is a developing, evolving sequence of architecture as one moves west through the Canadian Valley toward the Pecos Pueblo and an increase in pueblo pottery. This may be explained as the Southwest Pueblo Culture originating in the eastern Canadian Valley and as the people moved west, the complexities of the culture, i.e. pottery and architecture, became more developed. Moorehead states that the relationship between Central Mexico and the United States Pueblos may have the same relationship - influence from north to south instead of south to north.

Shaeffer, J. B.

1957 The Alibates Flint Quarry, Texas. American Antiquity 24:189-191.

The author describes the main quarry and other smaller ones at Alibates. He states that proper identification of flint to individual quarries is needed.

Studer, F. V.

1931 Archeological Survey of the North Panhandle of
 Texas. Bulletin of the Texas Archeological and
 Paleontological Society 3:70-75.

Studer discusses the characteristics of post-Basket Maker sites (Antelope Creek Focus), Plains Indian sites and flint quarry sites. The survey recorded 110 major ruins in the Texas Panhandle.

Troiike, R. C.

1955 Anthropological Theory and Plains Archeology.
 Bulletin of the Texas Archeological Society
 26:113-143.

A generalized model about diffusion and acculturation in the prehistoric Plains and bordering areas. Troiike hypothesizes that the Panhandle Aspect originated from the Upper Republican Aspect and that after contact with pueblo people, acculturated a few of their traits.

Witte, A. H.

1947 Certain Archaeological Notes in the High Plains
 of Texas. Bulletin of the Texas Archeological
 and Paleontological Society 18:76-82.

Witte records his visit to lake sites on the Llano Estacado, a burial in Gray County and discusses problems associated with Alibates flint and identifying a particular piece to a particular source. There are a number of localities where flint material similar to Alibates flint may be obtained and these localities are distributed over a large area.

BIBLIOGRAPHY

Anonymous

- 1962 Alibates Flint Quarries, A National Monument.
Manuscript on file at the Potter County Historical
Society. Amarillo.
- 1966 Texas Alibates Flint Quarries Declared a National
Monument. Lapidary Journal 9:10:1117-1131.

Archambeau, E. R.

- 1963 The Valley of the Canadian River. Panhandle
Geological Society, Field Trip September
1973.

Baerreis, D. A. and Reid A. Bryson

- 1965 Historical Climatology of the Southern Plains.
Oklahoma Anthropological Society Bulletin
13:69-75.
- 1966 Dating the Panhandle Aspect Cultures. Oklahoma
Anthropological Society Bulletin 14:105-116.

Baker, E. and J. Baker

- 1941 Final Report Archaeological Survey - O. P.
655-66-3-404, State Application 30976. Unpublished
manuscript on file at Sanford Recreation Area.
- 1941 Final Report W.P.A. West Texas State Archaeological
Project 9249. Unpublished manuscript on file at
Sanford Recreation Area.

Baker, W. E., T. N. Campbell and G. L. Evans

- 1957 The Nall Site: Evidence of Early Man in the
Oklahoma Panhandle. Oklahoma Anthropological
Society Bulletin 5:1-20.

Bell, E. H.

- 1939 Great Plains Area. American Antiquity 5:355-357.

Bell, R. E.

- 1962 Precolombian Prairie Settlements in the Great
Plains. Great Plains Journal 2:1.

- Bell, R. E. and D. A. Baerries
1951 A Survey of Oklahoma Archaeology. Bulletin of the Texas Archeological and Paleontological Society 22:7-100.
- Blair, W. F.
1950 The Biotic Provinces of Texas. Texas Journal of Science 2:1:93-117.
- Bryan, Kirk
1950 Flint Quarries - The Source of Tools and, at the same time, the Factories of the American Indians. Papers of the Peabody Museum, Harvard University.
- Campbell, R. C.
1969 Prehistoric Panhandle Culture of the Chaquagua Plateau, Southeast Colorado. Unpublished Ph.D. dissertation. Department of Anthropology, University of Colorado.
- Corbyn, Ron
1967 Archeological-Geomorphic Survey of Big Canyon - Canadian River Confluence. Unpublished manuscript on file at Sanford Recreation Area.
- 1967 Big Canyon Burial, Site 84 Park Service. Unpublished manuscript on file at Sanford Recreation Area.
- Crabb, M. L.
1968 Some Puebloan Trade Pottery from Panhandle Aspect Sites. Bulletin of the Texas Archeological Society 38:83-89.
- Cummings, C. R.
1969 Alibates Development Outline. Unpublished manuscript on file at Sanford Recreation Area.
- 1969 Archeological Site Survey for Bugbee Canyon Access Road Right-of-way, Sanford Recreation Area, Texas. Unpublished manuscript on file at Sanford Recreation Area.

- Davis, W. A.
1962 Appraisal of the Archeological Resources of Sanford Reservoir, Hutchinson, Moore and Potter Counties, Texas. Unpublished manuscript on file with the National Park Service.
- Duffield, L. F.
1962 Archeology of the Sanford Reservoir in the Texas Panhandle, Plains Anthropology 7:16-79.
- 1964 Three Panhandle Aspect Sites at Sanford Reservoir, Hutchinson County, Texas. Bulletin of the Texas Archeological Society 35:19-82.
- 1970 Some Panhandle Aspect Sites in Texas: Their Vertebrates and Paleoecology. Unpublished Ph.D. dissertation. Department of Anthropology, University of Wisconsin.
- Ellzey, T. S.
1967 A Panhandle Aspect Site (Preliminary Report). Transactions of the Second Regional Archeological Symposium for Southeastern New Mexico and Western Texas, South Plains Archeological Society Guidebook.
- Eyery, T. L.
1907 Archaeological Work in the Texas Panhandle. Canadian Academy Bulletin 1.
- 1907 The Wolf Creek Expedition. The Student 2.
- Fischel, H. E.
1939 Folsom and Yuma Culture Finds. American Antiquity 4:3:232-264.
- Gladwin, H. S.
1934 The Archaeology of the Southwest and its Relation to the Cultures of Texas. Bulletin of the Texas Archeological and Paleontological Society 5:19-35.

- Glasscock, Keith and Alma
1955 Report on CR-1, an Indian Campsite in Moore County, Texas. Panhandle-Plains Historical Review 28:96-106.
- Gould, F. W.
1962 Texas Plants - A Checklist and Ecological Summary. Texas Agricultural Experiment Station MP-585.
- Green, F. E.
1967 Archeological Salvage in the Sanford Reservoir Area. Unpublished manuscript copy 2, National Park Service. Memo of Agreement No. 14-10-0333-1120.
- Green, F. E. and J. R. Kelley
1960 Comments on Alibates Flint. American Antiquity 25:3:413-414.
- Green, J. H.
1955 Some Flint Caches, the Alibates Quarry, and a Stone and Pestle. Panhandle-Plains Historical Review 28:78-81.
- Hertner, H. E. (Editor)
1963 Alibates Flint Quarries, a National Monument. Potter County Historical Survey and Panhandle Geological Society, 1.

1964 Alibates Flint Quarries, a National Monument, Supplement. Potter County Historical Survey Committee and Panhandle Geological Society, 2.
- Hesse, C. J.
1945 Some Archeological Material in the Museum of the A and M College of Texas. Bulletin of the Texas Archeological and Paleontological Society 15:80-91.
- Hobbs, H. R.
1941 Two Texas Panhandle Ruins. El Palacio 48:121-129.
- Holden, W. C.
1929 Some Recent Exploration and Excavations in Northwest Texas. Bulletin of the Texas Archeological and Paleontological Society 1:25-35.

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- 1930 The Canadian Valley Expedition of March 1930. Bulletin of the Texas Archeological and Paleontological Society 2:21-32.
- 1931 Texas Tech Archeological Expedition, Summer 1930. Bulletin of the Texas Archeological and Paleontological Society 3:43-52.
- 1932 Recent Archeological Discoveries in the Texas Panhandle. Southwestern Society Science Quarterly 13:3:287-293.
- 1933 Excavation of Saddleback Ruin. Bulletin of the Texas Archeological and Paleontological Society 5:39-52.
- Hughes, J. T.
- 1955 Little Sunday: An Archaic Site in the Texas Panhandle. Bulletin of the Texas Archeological and Paleontological Society 28:55-74.
- 1959 Archeological Survey of Greenbelt Reservoir, Doney County, Texas. Unpublished report on file with the National Park Service.
- 1959 In Notes and News. American Antiquity 24:4:454.
- 1961 Lake Creek: A Woodland Site in the Texas Panhandle. Bulletin of the Texas Archeological Society 32:65-84.
- 1973 Data for Archaeology Section of Environmental Impact Statement on Blue West and Bates Canyon Areas, Lake Meredith Recreation Area, Texas. Manuscript on file with Ecology Audits, Inc. Dallas.
- Hyatt, Robert D.
- 1968 The Evidence for Plains-Southwestern Cultural Contacts. Unpublished masters thesis. Department of Anthropology, University of New Mexico.
- Jackson, A. T.
- 1938 Picture-writing of Texas Indians. University of Texas Publication No. 3809.

- Johnson, C. S.
1939 A Report on the Antelope Creek Ruin. Bulletin of the Texas Archeological and Paleontological Society 11:190-202.
- Krieger, A. D.
1946 Culture Complexes and Chronology in Northern Texas. University of Texas Publication No. 4640.
- 1947 Certain Projectile Points of the Early American Hunters. Bulletin of the Texas Archeological and Paleontological Society 18:7-27.
- 1947 The Eastward Extension of Puebloan Datings Toward Cultures of the Mississippi Valley. American Antiquity 12:3:141-148.
- Kelley, J. H.
1964 Comments on the Archeology of the Llano Estacado. Bulletin of the Texas Archeological Society 35:1-18.
- Kendrick, Judson
1966 The Alibates National Monument. In West Texas State University Geological Society Guidebook for 1966. Southwestern Association of Student Geological Societies Annual Field Trip. 53-57.
- Kirkland, Forrest
1942 Indian Pictographs and Petroglyphs in the Panhandle Region of Texas. Bulletin of the Texas Archeological and Paleontological Society 14:9-26.
- Lowery, E. J.
1932 The Archeology of the Antelope Creek Ruin. Unpublished masters thesis. Texas Tech University.
- Malone, James M.
1970 Archeological Reconnaissance in the Mackenzie Reservoir Area of Tule Canyon. Texas State Historical Survey Committee and Texas Water Development Board, Archeological Survey Report No. 8.

- Mason, J. A.
 1929 The Texas Expedition. University of Pennsylvania Museum Journal 22:318-338.
- 1930 Archeological Field Work in North America During 1929. American Anthropologist 32:2:361-371.
- 1935 The Place of Texas in Pre-Colombian Relationships Between the United States and Mexico. Bulletin of the Texas Archeological and Paleontological Society 7:20-46.
- McKern, T. W.
 1964 Indian Skeletal Material from the Jim Arnold Site. Bulletin of the Texas Archeological Society 35:95-100.
- Mewhinney, H.
 1965 Alibates Flint Quarry. Texas Parks and Wildlife 23:8:20-25.
- Moore, Ray
 1966 Archeology of Palo Duro Canyon. West Texas State University Geological Society Guidebook for 1966. Southwestern Association of Student Geological Societies Annual Field Trip. 35-37.
- Moorehead, W. K.
 1920 The Origin and Development of the Pueblo Cliff Dweller Culture Etc. Andover, Phillips Academy.
- 1921 Recent Exploration in Northwestern Texas. American Anthropologist 23:1-11.
- 1931 Archeology of the Arkansas River Valley. New Haven, Yale University Press.
- 1933 The Importance of Texas as an Archeological Field. Bulletin of the Texas Archeological and Paleontological Society 5:9-13.
- National Park Service
 1953 Project Report, Recreation Use and Development, Sanford Reservoir. Unpublished report on file with the National Park Service.

-
1963. A Public Use Plan, Sanford Reservoir, Canadian Project, Texas. Unpublished report on file with the National Park Service.
- 1964 Sanford National Recreation Area, Texas; A Proposal; A Recreation Planning Report. Unpublished report on file with the National Park Service.
- 1965 Sanford Recreation Area, Texas. Unpublished report on file with the National Park Service.
- Panhandle Geological Society
- 1963 Field Trip, September 14, 1963, Alibates Flint Quarries, Alibates Indian Ruin, Santa Fe Trail, Sanford Dam. Unpublished manuscript on file at Panhandle Geological Society.
- Pearce, W. M.
- 1936 A Survey of the Sand-Hill Camp Sites of Lamb and Bailey Counties. Bulletin of the Texas Archeological and Paleontological Society 8:184-186.
- Pearson, F. J.
- 1965 University of Texas Radiocarbon Dates III. Radiocarbon 7:296-314.
- Poteet, Sybil
- 1938 The Occurrence and Distribution of Beveled Knives. Bulletin of the Texas Archeological Society 10:245-262.
- Potter County Historical Survey Committee
- 1963 Alibates Flint Quarries, A National Monument. Unpublished manuscript on file at Potter County Historical Society 1.
- 1964 Alibates Flint Quarries, A National Monument, Supplement. Unpublished manuscript on file at Potter County Historical Society 2.
- Sayles, E. B.
- 1935 An Archaeological Survey of Texas. Medallion Papers, No. 777. Gila Pueblo.

- Schaeffer, J. H.
 1958 The Alibates Flint Quarry, Texas. American Antiquity 23:2:189-191.
- Schroeder, A. H.
 1961 A Re-analysis of the Routes of Coronado and Onate into the Plains in 1541 and 1601. Plains Anthropology 7:15:2-23.
- Schultz, C. B.
 1943 Some Artifact Sites of Early Man in the Great Plains and Adjacent Areas. American Antiquity 8:242-249.
- Sellards, E. H.
 1938 Artifacts Associated with Fossil Elephant. Bulletin of the Geological Society of America 49:999-1010.
 1947 Fossil Bison and Associated Artifacts from Plainview, Texas. Bulletin of the Geological Society of America 58:927-954.
- Smith, Victor J.
 1936 The Pottery Horizons of Texas. Bulletin of the Texas Archeological and Paleontological Society 8:94-112.
 1938 A Survey of Indian Life in Texas. West Texas Historical and Science Society, No. 5.
- Studer, Floyd V.
 1931 Archeological Survey of the North Panhandle of Texas. Bulletin of the Texas Archeological and Paleontological Society 3:70-75.
 1931 Some Field Notes and Observations Concerning Texas Panhandle Ruins. In Archeology of the Arkansas River Valley. Edited by W. K. Moorehead. New Have, Yale University Press.
 1934 Texas Panhandle Culture Ruin No. 55. Bulletin of the Texas Archeological and Paleontological Society 6:80-96.

-
- 1955 Archeology of the Texas Panhandle. Panhandle-Plains
Historical Review 28:87-95.
- Suhm, D. A., A. D. Krieger and E. B. Jelks
1954 An Introductory Handbook of Texas Archeology.
Bulletin of the Texas Archeological Society, 25.
- Tunnell, C. D.
1964 Two Burials from the Jim Arnold Site in Northwest
Texas. Bulletin of the Texas Archeological
Society 35:83-94.
- Tunnell, C. D. and J. T. Hughes
1955 An Archaic Bison Kill Site in the Texas Pan-
handle. Panhandle-Plains Historical Review
28:63-70.
- U.S. Congress
1965 Alibates Flint Quarries and Texas Panhandle
Pueblo Culture National Monument, Legislative
History. House Report No. 148, Senate Report
581, Public Law 89-154, Congressional Record
III, 89th Congress.
- Watson, V. D.
1950 The Optima Focus of the Panhandle Aspect: Descrip-
tion and Analysis. Bulletin of the Texas Archeo-
logical and Paleontological Society 21:7-68.
- Watts, W. C.
1939 Lake Sites of the South Plains of Texas. Bulletin
of the Texas Archeological and Paleontological
Society 11:79-91.
- Webb, W. P.
1931 The Great Plains. Austin, Ginn and Company.
- Wedel, W. R.
1962 Prehistoric Man on the Great Plains. Norman,
University of Oklahoma Press.
- Wendorf, Fred
1960 The Archaeology of Northeastern New Mexico.
El Palacio 67:2:55-65.

-
- 1961 The Paleoecology of the Llano Estacado. Fort
Burgwin Research Center Publication No. 1,
University of New Mexico Press.
- Witte, A. H.
1942 Certain Caches of Flints from the North Texas
Area. Bulletin of the Texas Archeological and
Paleontological Society 14:72-76.
- 1947 Certain Archeological Notes on the High Plains
of Texas. Bulletin of the Texas Archeological and
Paleontological Society 18:76-82.
- Wormington, H. M.
1964 Ancient Man in North America. Denver, Museum
of Natural History.
- Wright, Welty
1940 The Type, Distribution and Occurrence of Flint
Gravers in Texas. Bulletin of the Texas Archeo-
logical and Paleontological Society 12:31-48.

