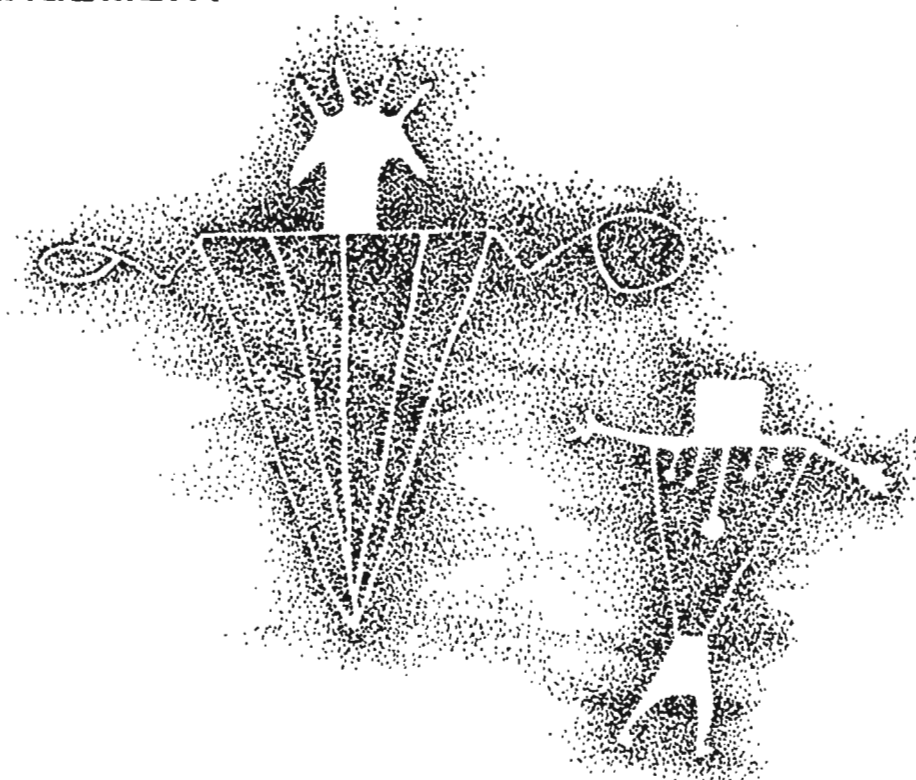


BUREAU OF LAND MANAGEMENT
UTAH



CULTURAL RESOURCE SUMMARY
OF THE
EAST CENTRAL PORTION OF MOAB DISTRICT
1980

by
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ABSTRACT

The cultural resource overview is of an area designated by the Bureau of Land Management as the Canyonlands Grazing Environmental Impact Statement area consisting of the Dolores, Castle Valley, Dry Valley, Beef Basin, and Monticello Planning Units of the Moab District, Bureau of Land Management (see Figure 1).

The environment of the area has changed little in the past 1500 years after an earlier warm dry period shortly before the time of Christ. The area is now a high desert with hot summers and cool to cold winters.

Previous archaeological research has been survey oriented with much historical research on both a regional basis and on detailed problems. Most of the recent archaeological research has been to solve land management problems.

Research has shown periodic occupation of the area for the past 11,000 years, starting with Paleo-Indian hunters of Pleistocene mammals. Archaic foragers used the area from 8,000 to 2,000 years ago. They were followed by Formative agriculturists and were related to the Mesa Verde Branch of the Anasazi (Pueblo), who grew corn, beans, and squash from the time of Christ until about 1200 A.D. Nomadic peoples speaking a Numic language and historically called Utes occupied the area at first European contact and had been in the area at least 200 years at contact.

Historically the area has had a ranching and mining economy with two small towns, Moab and Monticello, providing services. In recent years tourism and governmental services have been added to the economic base.

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Introduction

The area under discussion is the Canyonlands Range Environmental Impact Statement Area in Southeastern Utah. The area includes the Dolores, Castle Valley, Dry Valley, Beef Basin, and Monticello Planning Units of the Moab District, Bureau of Land Management. It includes all of the land west of the Utah-Colorado state line and south of the Colorado River to the south planning unit boundaries at the latitude of Monticello which are US Highway 666, the north edge of the Monticello district of the Manti-LaSal National Forest, and the south rim of Dark Canyon (see figure 1).

This report was done by K. K. Pelli Cultural Resource Management Specialists under Bureau of Land Management Contract Number YA-512-CT7-259 issued by the Denver Service Center. It was done to provide cultural resource information for an environmental impact statement to assess the effects of the range activities program and for general information in the above-named planning units within the Moab District.

All pertinent published material and many manuscripts were read in preparation for gathering specific data. All archaeological and historical site inventory forms were gathered, analyzed, and plotted on one inch to the mile scale maps. Site data was compiled in the form required by the contract; i.e., by using information to show (a) site reference number, (b) location by section, township, and range, (c) land ownership, (d) site type or function, (e) culture or historic theme represented, (f) chronological place in time, (g) the recorder or surveyor, and (h) date of recording. All data was compiled even if it had little use. Some data recorded duplicated that obtained by others and an attempt was made to straighten out these duplications where possible. Only the best and most accurate descriptions were plotted on the maps. Trips were made to Salt Lake City and Monticello to obtain the bulk of the site data, and letters were written to obtain the rest that was available. Some site information, like that of Hunt (1953) and Davis (1975), was abstracted from the publications since the site inventory forms were never submitted to the statewide inventory system developed by the University of Utah and used by the Division of Antiquities, State Division of History and is no longer extant.

Problems relating to designations of culture were resolved by using the recorder's designation, no matter what it was, and discussing the problem designation in the body of the report. The type of site designation was fairly similar among recorders, and the simple designation system and recording system that we chose for the site types and cultures gave little trouble.

Some of the data retrieved from reports was tabulated to attempt to make a little more sense of it. Some of these tabulations appear in the body of the report or in the appendix.

The project director, Lloyd M. Pierson, did the research and writing. The archaeologist partner, Marian M. Pierson, tabulated the site data and typed the report. Both partners worked on plotting the sites on the maps. Much of the literature review and bibliography had already been done on a personal basis, and some of the data was actually in the form of excavation notes from excavations in which the partners had participated.

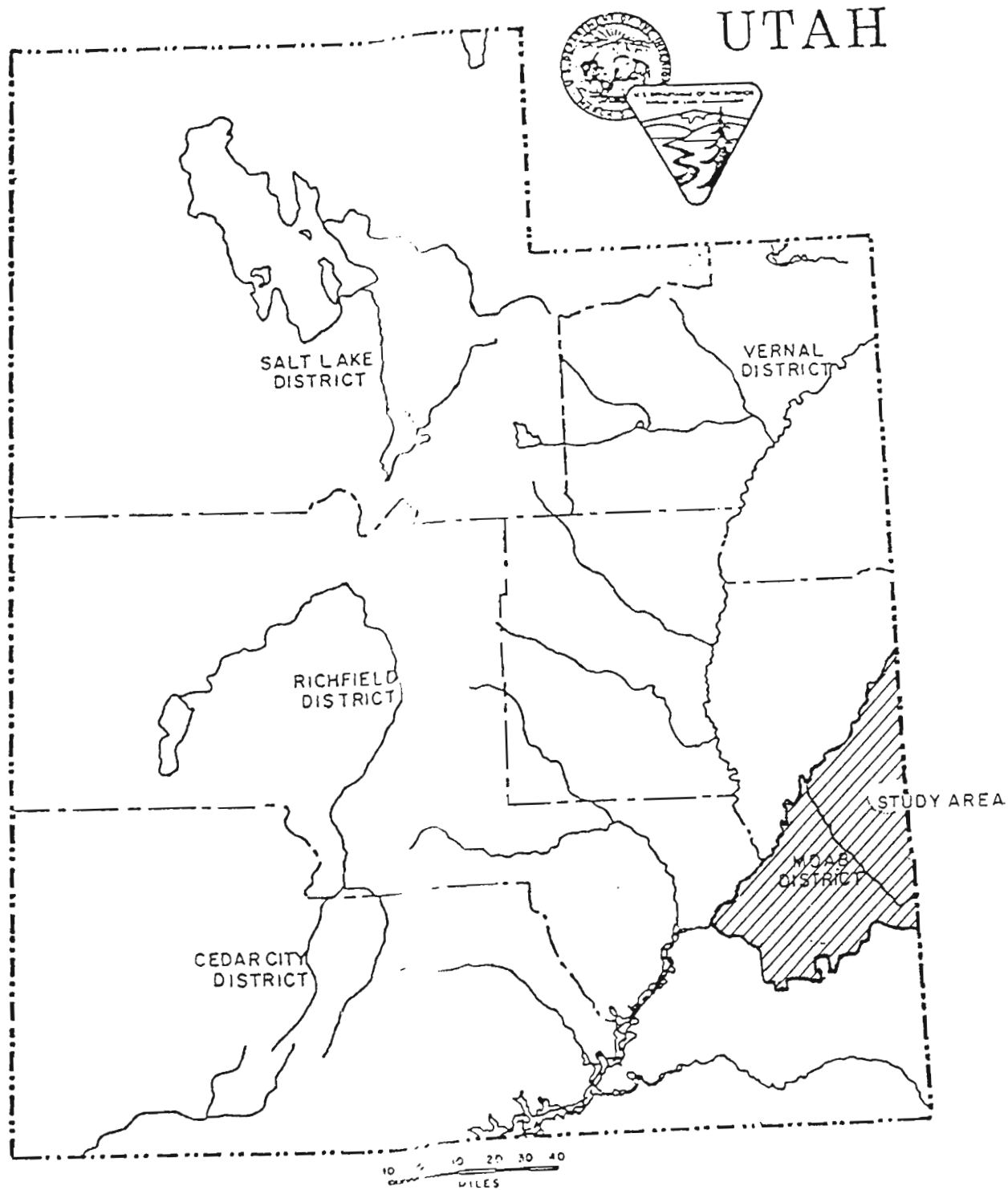


Figure 1. Vicinity Map of Report Area

CHAPTER 1

ENVIRONMENTAL AND RESEARCH BACKGROUND

Environmental Background

The Canyonlands Range Environmental Statement area lies in Southeastern Utah within the Colorado Plateau physiographic province. The major drainage of the area is the Colorado River, which bounds the area on the west. The Colorado River flows through a deep canyon entrenched in the sedimentary rocks of the Plateau. The side drainages, too, are mostly entrenched into the sedimentary rocks of the region. Frequently there is an inner canyon with vertical walls, then a wide flat bench and secondary canyon walls, with the top of these walls being the floor of the present plateau. The vertical difference in elevation from canyon floor to plateau floor can be up to 3,000 feet.

The exposed formations are of sedimentary origin, dating from Permian times through the lower Cretaceous (see Table 1). These spectacular red and orange sandstone canyons have given the name "Canyonlands" to the region. The principal canyons entering the Colorado from the east, starting at the south end of the area, are: Dark Canyon, Bowdie Canyon, Gypsum Canyon, Salt Creek, Indian Creek, Kane Creek, Negro Bill Canyon, Dolores River, and Little Dolores River.

Within the area two laccolithic mountain ranges were intruded into the Colorado Plateau in Tertiary times, the LaSal Mountains and the Abajo, or Blues. The LaSals dominate the landscape of east-central Utah. Three separate groups of peaks make up the LaSal Mountains. The highest peak is Mt. Peale, 12,721 feet. The Abajos are more compact with but one small semidetached peak to the north, Shay Mountain. The highest elevation is Abajo Peak, at 11,360 feet.

A series of salt anticlines run parallel with each other on a northwest-southeast trend in the Colorado Plateau. The anticlines have collapsed to form graben valleys, due to the removal of the salt. Four of these graben valleys occur in the area: Lisbon Valley, Fisher Valley, Castle Valley, and Spanish Valley. There are extrusions of the salt formations in Fisher Valley. All are long, narrow valleys with high cliffs on one or both flanks of the anticline.

The LaSals are intruded into the series of graben valleys. They interrupt the Spanish Valley-Lisbon Valley; Castle Valley-Paradox Valley, Colorado; and Fisher Valley-Sinbad Valley, Colorado, anticline systems. The west flank of the LaSals descends quite steeply and its canyons are narrow and rugged. Several small mesas cling to the west and north sides of the LaSals. On the east side the slope is more gentle with many flat areas at elevations of 7,000 feet, until either the canyon system of the Dolores or the graben valleys in Colorado are encountered.

System	Series	Group	Formation	Member	Thickness (ft)	Lithology and water-bearing characteristics		
Quaternary	Holocene		Gold Basin Formation		0-360+	Eolian and fluvial silt and sand; rounded to subrounded gravel, cobbles, and boulders in a clean sandy matrix; poorly sorted angular to subangular alluvial-fan debris in a clayey, silty, and sandy matrix; terrace deposits; sandy colluvium; and glacial deposits in the high plateaus and mountain areas. In Spanish Valley, eolian and alluvial deposits or formations (undifferentiated) compose the principal water-bearing material and source of ground water.		
			Unconformity					
	Pleistocene		Beaver Basin Formation					
			Unconformity					
			Placer Creek Formation					
			Unconformity					
Tertiary			Igneous intrusive rocks of the La Sal Mountains					Igneous rocks; mostly diorite, monzonite, and syenite porphyry that intrude older sedimentary formations as dikes, sills, stocks, and laccoliths. Precipitation may enter these rocks where they are intensely fractured and subsequently recharge adjacent permeable sedimentary rocks.
			Unconformity					
Cretaceous	Upper Cretaceous		Mancos Shale	Unnamed upper shale member	410-800+	Dark-gray and gray-brown marine shale with discontinuous thin beds of gray sandstone; relatively impermeable; does not yield water in this area.		
				Ferron Sandstone Member		Tan and gray thin-bedded fine-grained sandstone and sandy shale, about 160 ft thick; permeable, but not known to yield water in this area.		
				Unnamed lower shale member		Dark-gray and gray-brown marine shale with discontinuous thin beds of gray sandstone; relatively impermeable; does not yield water in this area.		
			Lower Cretaceous	Dakota Sandstone	50-120	Rust-brown and yellowish-brown carbonaceous sandstone with interbeds of dark-gray siltstone and lenticular tan conglomeratic sandstone; permeable, but not known to yield water in this area.		
				Unconformity				
			Burro Canyon Formation	50-250	Light-gray silicified sandstone; lenticular conglomeratic brownish-gray crossbedded sandstone with thin interbeds of green mudstone; and thin sparse beds of gray limestone; has a low intrinsic hydraulic conductivity, but yields water to springs where the beds are intensely fractured.			
	Jurassic		Upper Jurassic	Morrison Formation	Brushy Basin Shale Member	250-450	Variegated red, green, and purple mudstone with sandy clay; and greenish-gray bentonite with interbeds of conglomeratic sandstone; has a low intrinsic hydraulic conductivity and is not known to yield water in this area.	
					Salt Wash Sandstone Member	60-220	Tan to gray well-sorted fluvial cross-bedded sandstone with interbeds of red and gray mudstone; permeable in part, but not known to yield water in this area.	
Unconformity								
Summerville Formation		0-50		Red thin-bedded sandstone; red sandy mudstone; red shale; and thin gray limestone layers with some large gray-white to red chert concretions; has a low intrinsic hydraulic conductivity, and is not known to yield water in this area.				
Entrada Sandstone		Moab Member		300-550	Pale-tan to grayish-white massively cross-bedded medium-grained sandstone; permeable, but not known to yield water in this area.			
		Slick Rock Member			Light-tan to red eolian sandstone; permeable, but not known to yield water in this area.			
		Dewey Bridge Member			Light-red aqueous siltstone and fine-grained sandstone, contorted beds common; permeable, but not known to yield water in this area.			
Unconformity								

Table 1. Generalized geologic section for the Spanish Valley Area, Sumison, 1971 (adapted from Hunt (1958); Richmond (1962), and Stokes (1964))

Table 1. continued

			Unconformity				
	Lower Jurassic	Glen Canyon Group	Navajo Sandstone		300-400	Pale yellowish-orange to pale reddish-brown fine- to medium-grained sandstone with eolian cross beds, and sparse thin lenticular beds of gray sandy limestone; intrinsic hydraulic conductivity not great, but yields water to wells and springs where intensely fractured.	
Triassic(?)	Upper Triassic(?)		Kayenta Formation		230-270	Irregular beds of red, tan, gray, and lavender shale, siltstone, and sandstone; locally has thin- to medium-beds of tan-weathering gray silty limestone; an aquitard and permeable in part, but not known to yield water in this area.	
Triassic	Upper Triassic	Glen Canyon Group	Wingate Sandstone		275-350	Medium-reddish-orange fine-grained sandstone in tabular sets of massive eolian cross strata; permeability not great, but where intensely fractured yields water to springs; has potential for moderate yields of water to wells.	
			Chinle Formation	Church Rock Member	170-270	Reddish-brown and variegated gray-brown siltstone; reddish-gray sandstone; gray-green conglomeratic sandstone; lenticular conglomerate; sparse intrastratal laminae of gypsum; low intrinsic hydraulic conductivity, not known to yield water in this area.	
		Moss Back Member		30-80	Gray to greenish-gray thinly to thickly cross-bedded fine-grained sandstone; layers of siltstone, calcareous sandstone, and conglomerate; lignitic debris, pyrite, and other metallic deposits common; permeable, but not known to yield water in this area.		
	Middle(?) and Lower Triassic		Unconformity	Moenkopi Formation		470-530	Mostly reddish-brown laminated to thin-bedded siltstone and gray fine-grained micaceous sandstone; sparse thin lenses of white cherty limestone; sparse thin layers of quartz-granule conglomerate; current-ripple marks, mud cracks, intrastratal laminae of gypsum, and gypsum veinlets common; low intrinsic hydraulic conductivity; not known to yield water in this area.
Permian			Unconformity	Cutler Formation	Unnamed arkosic member	250-700+	Red, brown, and dark-red fluvial arkose and arkosic conglomerate; red arkosic sandstone with massive crossbedding; and tabular-bedded red-brown siltstone and sandstone with sparse thin layers of lacustrine limestone; yields water to a few wells for domestic use in Spanish Valley, but is not an important aquifer in this area.
				Rico Formation		200-450+	Reddish-brown and greenish-gray fine- to medium-grained cross-bedded fluvial sandstone; gray thin- to thick-bedded cherty marine limestone; and reddish-gray micaceous siltstone; the sandstones are permeable but the formation has a generally low intrinsic hydraulic conductivity, and is not known to yield water in this area.
Pennsylvanian	Upper Pennsylvanian				Unnamed upper member	800+(?)	Bluish-gray marine limestone and dolomite containing gray and red chert; gray fine-grained micaceous cross-bedded sandstone and siltstone; reddish-gray sandy shale and sandstone; and gray arkosic conglomerate; not known to yield water in this area.
	Upper and Middle Pennsylvanian		Herosa Formation		Paradox Member	2,000+(?)	Light-colored salt, gypsum, anhydrite, and other evaporites; black shale, dark-gray sandy shale, gray sandstone, and gray dolomitic marine limestone; not known to yield water in this area.
Unconformity							
Precambrian						Metamorphic complex of gneisses, schists, and similar rock types with associated intrusive rocks; not known to yield water in this area.	

Table 1. Generalized geologic section for the Spanish Valley Area, Sumison, 1971 (adapted from Hunt (1958), Richmond (1962), and Stokes (1964))

To the south of the LaSals is a large, fairly level area which today is farmed. Further south and west is Dry Valley, a large open valley with several spectacular single rock outcrops resembling orange-colored sandstone buildings. Parallel to Dry Valley on the east is Lisbon Valley, a collapsed anticline or graben valley where important uranium and hydrocarbon deposits have been found.

Between the Abajo Mountains and the state line, at an elevation of 7,000 feet, is a large flat plain named the Great Sage Plain. Its edges are being eroded by East Canyon on the north and Montezuma Creek on the south. Much of this plain has been turned into farmland today. To the west of the Abajos extends Elk Ridge, a long high mesa dominated by the Bears Ears at 9,058 feet elevation. On all sides except the east Elk Ridge is being eroded by deep, narrow canyons. Those on the north and west flow into the Colorado River, and on the south into the San Juan system. The geological material on the north is quite colorful and erodes into spectacular formations. This latter area has been set aside as Canyonlands National Park.

The geographic features have controlled human movement through the area. There are few places where a human on foot can successfully climb the canyon walls. Most trails in and out of the major canyons were at the heads of the canyon or in small side canyons where the cliff collapse has formed steep talus slopes that make access possible. These have been used, in several cases, to make horse and cattle trails into the canyons by stockmen. Some of these trails have been further developed into four-wheel-drive vehicle roads. However, travel through the country is still dictated by the landform, and there are many places that are little visited today because of difficult access.

The landform controls human use in another way, because in this desert land water only occurs under circumstances dictated by erosion and geological formation and composition. While certain geological formations are good aquifers, others are not (see Table 1). Where the good aquifers are exposed by erosional features, springs and sometimes flowing streams occur. Man's dependence on water, even in prehistoric times, was basic to survival and was, perhaps, a population control. As an indication of water importance very few of the springs in the area are unnamed, and unwatered areas, like Dry Valley, are quickly pointed out in the names of the area. Snow and pothole water from sporadic rainfall provided an additional, but highly undependable, water source.

The geological formations also determine the soils of the area, and this in turn determines, in part, what plant life will grow that is of value to man. Altitude is another variable in plant growth, and the range in the area is from about 4,000 feet to almost 13,000 feet. Altitude, in some respects, equals climate, because differences in altitude give differences in climate.



Figure 2. Aspen and Fir/Spruce at Beaver Lake in LaSals.



Figure 3. Dry Valley Scene with Church Rock.

The higher parts of the LaSal and Abajo Mountains are wet and cool, their slopes and adjacent plateaus are drier and subject to wide variations in temperature diurnally and seasonally. The canyons and valleys at lower elevations are semiarid to arid and have wide variations in temperature diurnally and seasonally. They endure hot dry summers and cold winters which are almost equally dry.

Average annual precipitation at Moab (elevation 4,000 feet) from 1900 to 1968 was 8.18 inches, varying from a high of 15.96 inches to a yearly low of 3.02 inches. Annual average precipitation at the 11,000 foot level is estimated to be 28.7 inches (Sumison, 1971, p. 8).

Pacific air masses and storms dominate the regional weather during October-April. Summer storms are less frequent, but tend to be thunderstorms of high intensity as moisture laden air from the Gulf of Mexico moves into the area.

Temperature extremes of 110° and -20° Fahrenheit (F) have been recorded at Moab. Temperature variance between the warmest and coldest months is great, averaging 45° to 50° F and between absolute maxima and minima of more than 140 degrees. The frost-free period averages 184 days at Moab. The mean annual temperature is 56° F, and the average temperature during the growing season is 70° F.

Richmond (1962) describes the plant communities for the LaSals, and it applies to the area as a whole. In the lower elevation canyons and valleys one finds mesic species such as willow (*Salix* sp.); cottonwood (*Populus fremonti*); and exotic species, tamarisk (*Tamarix ballica*) and some Russian olive (*Elaeagnus angustifolia*), along the water courses. A few junipers are usually present on the talus slopes of the canyons. The broad valley floors like Castle Valley and Spanish Valley are categorized as a Great Basin Desert ecologic formation (Figure 2) consisting primarily of a sagebrush-grass association. There are several vegetational variants in this sagebrush-grass association in addition to the mesic species. In areas of saline soils one finds stands of greasewood (*Sarcobatus vermiculatus*) and shadscale (*Atriplex confertifolia*). In sandy and well-drained gravelly areas like lower Pack Creek and the vicinity of Round Mountain in Castle Valley one finds sagebrush replaced by blackbrush (*Coelogyne ramosissima*).

There are four distinct climax plant communities in the lower elevation foothills surrounding the mountains. Uppermost is a scrub-oak-mountain mahogany climax of pure stands of Gambel's oak (*Quercus gambelli*) interspersed with areas of mountain mahogany (*Cercocarpus* spp.) and other brush such as squawbrush (*Prunus virginiana*) and serviceberry (*Amelanchier utahensis*).

A second climax community in the foothills is the Ponderosa pine which occurs in the LaSals, mostly on the northeast and southeast slopes; on Elk Ridge; and on the north slopes of the Abajos.

A pinyon-juniper climax occurs on the higher mesas and plateaus of both mountain ranges. In the lower reaches it is accompanied by Mormon tea (*Ephedra* sp.), sagebrush (*Artemesia tridentata*), blackbrush (*Cloeogyne* sp.), yucca (*Yucca* sp.), prickly pear (*Opuntia* sp.), and other plants.

Small areas of sagebrush climax community occur within the pinyon-juniper climax areas, occurring mostly on eolian deposits with greater rainfall, cooler climate, and containing more other shrubs.

The mountains themselves have a belt of aspen (*Populus tremuloides*) and meadows that encircle the LaSals and occur in some quantity in the Abajos and Elk Ridge (Figure 3). Above them lies a belt of spruce-fir, the subalpine zone, whose upper limit is timberline.

Above the timberline lies an alpine zone in both mountain ranges, characterized by several tundra associations composed of cushion plants, cinquefoils (*Sieversia turbinata*, *potentilla* spp.) and various sedges (*Carex* spp.) and grasses.

Lindsay (1976) has summarized the plant community information of the area from Richmond (1962) and it is presented herein as Table 2.

Wildlife is abundant (Table 3) only in the better-watered areas. Mule deer and elk are present in the Abajos, LaSals, and Elk Ridge area. Desert bighorn sheep are scarce and occur in isolated canyons, although all indications, including archaeological data, show that they were quite common in the past. A few mountain lions and bear occur, mostly in the higher country. Smaller mammals, such as bobcats, skunks, coyotes, beaver, red and gray foxes, ringtail cats, weasels, porcupines, cotton-tails, jack rabbits, ground squirrels, and chipmunks occur in some numbers. Antelope have been reintroduced into the area. There are historical records of bison within the last two hundred years and Indian petroglyphs help substantiate their use of the area. Chukar, pheasant, and quail have also been introduced in recent years with varying degrees of success. A recent check list of birds by the BLM Moab District shows some 305 species present or transient through the area, including water birds, raptors, song birds, and rare and endangered species.

Recent Geology and Climate: Hunt (1956b, p. 35) reports that the LaSal Mountains were glaciated in Pleistocene times followed by a wet warm period during their melting, called Castle Creek times by Richmond (1962, p. 101). During the Recent period Richmond (1962) recognizes, from studies of the LaSals, three periods up to the beginning of the 20th century, constituting the Gold Basin formation. The Gold Basin formation represents two minor glacial advances separated by an interstadial interval. Early Gold Basin times (lower member) were only a few degrees colder than now, and had a precipitation less than the previous glacial time. Three-fourths of the cirques in the LaSals had ice in them and the tree line was at 11,000 feet. The glacial episode lasted about

ZONE	COMMUNITIES	ELEVATION	DESCRIPTION
Alpine	Alpine tundra	ca. 10720 ft.	Cushion plants, cinquefoils, (<i>Sieversia turbinata</i> , <i>potentilla</i> spp.) and various sedges (<i>Carex</i> spp.) and grasses present.
Subalpine	Spruce-fir-Douglas fir	ca. 9280 ft. to 11200 ft.	Dominated by dense stands of Englemann spruce (<i>Picea englemanni</i>) and subalpine fir (<i>Abies lasiocarpa</i>), Douglas fir (<i>Pseudotsuga taxifolia</i>) present in the lower part of the zone).
Montane	Aspen-meadow sub-climax	ca. 7760 ft. to 9760 ft.	Thick stands of aspen (<i>Populus tremuloides</i>) separated by open meadows of herbs and grasses.
Foothills	Scrub-oak-mountain mahogany climax	ca. 6230 ft. to 8800 ft.	Dominated by pure stands of scrub oak (<i>Quercus gambelii</i> and other spp.) with areas of mountain mahogany (<i>Cercocarpus</i> spp.) and other brush including squawbush (<i>Rhus trilobata</i>), buckbrush (<i>Ceanothus greggi</i>), chokecherry (<i>Prunus virginiana</i>). Sagebrush (<i>Artemisia tridentata</i>) present at lower altitudes.
	Ponderosa pine climax	ca. 7280 ft. to 8800 ft.	Lies within or below the oak-mountain mahogany climax primarily in sandstone areas.
	Pinyon-juniper climax	ca. 5460 ft. to 7280 ft.	Mixed and pure stands of juniper (<i>Juniperus utahensis</i> , <i>J. scopulorum</i> spp.) and pinyon (<i>Pinus edulis</i> spp.) present. Open areas include sparse grass, herbs and shrubs including Mormon tea (<i>Ephedra</i> sp.), sagebrush (<i>Artemisia tridentata</i>), blackbrush (<i>Coleogyne</i> sp.), squawbush (<i>Rhus trilobata</i>), and buckbrush (<i>Ceanothus greggi</i>). <i>Yucca</i> (<i>Yucca</i> spp.) and various cacti including prickly-pear (<i>Opuntia</i> sp.) present.
Great Basin Desert Communities	Sagebrush-grass association	ca. 3926 ft. to 6880 ft.	Sagebrush (<i>Artemisia tridentata</i>) dominant, replaced by blackbrush (<i>Coleogyne ramosissima</i>) in more arid locations. Cottonwoods (<i>Populus fremontii</i>), willows (<i>Salix</i> spp.), and tamarisk (<i>Tamarix gallica</i>) present along intermittent streams and flood plains. Greasewood (<i>Sarcobatus vermiculatus</i>) and shadscale (<i>Atriplex confertifolia</i>) present in more saline environments.

TABLE 2.
SOUTHEASTERN UTAH PLANT COMMUNITIES

(From Lindsay, 1976)

Beaver (*Castor canadensis*)
 Porcupine (*Erethizon dorsatum*)
 Coyote (*Canis latrans*)
 Gray Wolf (*Canis lupus*) - probably extinct
 Red Fox (*Vulpes fulva*)
 Gray Fox (*Urocyon cinereoargenteus*)
 Black Bear (*Ursus americanus*)
 Grizzly Bear (*Ursus horribilis*) - extinct
 Ringtail (*Bassariscus astutus*)
 Longtailed Weasel (*Mustela frenata*)
 Ermine (*Mustela erminea*)
 Black-footed Ferret (*Mustela nigripes*) - rare
 Mink (*Mustela vison*)
 Badger (*Taxidea taxus*)
 Spotted Skunk (*Spilogale gracilis*)
 Striped Skunk (*Mephitis mephitis*)
 River Otter (*Lutra canadensis*) - rare
 Mountain Lion (*Felis concolor*)
 Lynx (*Lynx canadensis*)
 Bobcat (*Lynx rufus*)
 Wapiti (*Cervus canadensis*)
 Mule Deer (*Odocoileus hemionus*)
 Pronghorn (*Antilocapra americana*)
 Bison (*Bison bison*) - extinct
 Mountain Sheep (*Ovis canadensis*)

TABLE 3

LARGER MAMMALS OF THE UPPER COLORADO RIVER BASIN

(From Hayward, Beck and Tanner, 1958)

	Richmond 1962	Hack 1942	Haynes 1968	Winter & Wylie 1974	Time	Climate	Geological Process	
	Present					Warmer- drier		
					1900 A.D.			
Recent	Gold Basin Fm.	Upper Member	Naha	Unit E	Lower Terrace	1860-95 A.D. 1500 A.D.	Warmer- drier	Erosion Deposition
						1200 A.D.	Winter Rain	Erosion Glaciation
		Spanish Valley Soil	Very Weak Soil	(Unit D?)	Level 2 (A.d. 460)	800 A.D. 700 A.D.	Winter Rain	
							Slightly Warmer/ Wetter	Erosion Interstadial Deposition
						50-520 A.D.		Melting
		Lower Member	Tsegi	Unit D	Level 1	**900 B.C. **1120 B.C.	2-3° Cool- er/drier	
					3000 B.C.		Deposition Glaciation	
		Castle Creek Soil	Moderate Soil (Altithermal of Antevs)			Warmer/ Wetter*	Erosion Melting Slight Erosion	
Pleistocene							Glaciation	

* Than now

** Dates from man's
deposits

TABLE 4

A CORRELATION OF THE RECENT GEOLOGY AND CLIMATE
OF THE NORTHERN COLORADO PLATEAU REGION

1,000 years. The lower member equates in part with Hack's Tsegi formation (3000 B.C. to 1200 A.D.) and is cut by arroyos that locally contain a younger terraced alluvium (Table 4). In the LaSals this younger alluvium is the upper member of the Gold Basin formation and it correlates with Hack's Naha formation.

Separating the upper and lower members of the Gold Basin formation is the Spanish Valley soil. This represents a period after the stagnation and melting of the early Gold Basin times. The formation of the soil was over a short period of time. In the latter part of the Spanish Valley soil times there were arroyos ten to twenty feet deep in the valley.

In late Gold Basin times the upper member of the formation was deposited. It represents a period when 7 to 32 cirques were glaciated, ice came down to 11,130 feet and timberline was at 11,300 feet. This was the last major glacial pulsation and occurred prior to 1860 A.D.

The lower member of the Gold Basin formation has man-made hearths from a lithic culture. One of these hearths has been charcoal (C-14) dated at 2800 ± 200 years B.P. (900 B.C.) (Rubin and Suess, 1955). It came from a humus zone in the lower member that also contains modern vertebrate fossils. The upper member of the Gold Basin formation contains, like its Naha counterpart, fine sand, silt, and pottery (Richmond, 1962, pp. 80 and 103) with little or no soil.

The present period, which Richmond (1962) counts from the start of the twentieth century, has arroyos due to man, a timberline at 11,400 feet, and a warmer and drier climate which may or may not be a long term affair. Richmond suggests we may currently be in an interglacial period (Richmond, 1962, p. 3).

At Clydes Cavern in the San Rafael Swell, a similar picture of the climate of the late Recent period is also evident. The floral and faunal remains encountered in Clydes Cavern indicate no drastic climatic change in the past 1500 years (Winter and Wylie, 1974). There is little change in the assemblage from that present today, although some change in emphasis is indicated. Whether this is due to presence or absence of the flora and fauna or to man's selection is not clear.

During the last 1500 years the climate has apparently varied within the same limits as it does today. There were periods in Southeastern Utah when the rainfall pattern changed to either more or less rainfall than today from a summer to a winter dominant rainfall pattern. A period from about A.D. 800 to 1200 gives indication of rainfall pattern change, but whether the change was to a winter rainfall pattern or more moisture is still not clear (Jennings, 1966, p. 17).

At least as important as the minor climatic changes and partially a result of the changes is the cyclic alluvial deposition and erosion that took place. Winter and Wylie (1974) correlate two terraces at Clydes Cavern with the Haynes (1968) sequence (see Table 4). The two depositional

levels correlated with those at Clydes Cavern are one (Level 1) at about 3000 B.C. to 50 A.D. with some alluviation continuing to A.D. 520 (Haynes Depositional Unit D). The second and lower alluvial terrace (Haynes Depositional Unit E) deposited on or in an eroded Unit D (Level 2) accumulated in most places at A.D. 1200 to 1500. This unit supposedly remained until the late 1800's when its wide flat plain was cut into by an arroyo. The erosional episode between Units D and E apparently began about A.D. 700. These roughly correlate with Hack's sequence for the Hopi country to the south, and Richmond (1962, p. 877) correlated Hack's alluvium/erosion sequence to events in the Moab/LaSal Mountains area. It would appear that the Tsegi alluvium equates with Unit D and the Naha alluvium with Unit E.

More specifically, dating and stratigraphy indicate that Level 1 at Clydes Cavern may also be part of Unit D and the Tsegi formation. Level 2 appears to correlate with the deposition period at the end of the Tsegi, termed the Spanish Valley soil or Spanish Valley times by Richmond (1962).

The last erosional period of the 1880's has been blamed on overgrazing, but this may be an over-simplification, for climatic factors of the period may have predetermined that this was going to happen anyway, with or without livestock. What the climate studies seem to say is that for the last 1500 years there have been good and bad times for the ecology of the area. The changes in winter/summer rain patterns, which are most likely the result of jet stream tracks, if we are to believe the weather forecasters, do trigger off alternate periods of deposition and erosion which are the natural sequence of events in a desert environment. In turn, man can, as he did in the 1880's through overgrazing, trigger these cycles sooner than would occur naturally.

Summary of Past and Current Work

Very little archaeological research took place in the area until World War II. Dean Byron Cummings of the University of Utah spent some time in Moab with Dr. J. W. Williams prior to World War I looking at some of the local archaeology and apparently also visited the Beef Basin and Fable Valley areas. A few short descriptions here and there in the literature described the visits (Cummings, 1910, 1915, and 1953).

The Carnegie Expedition to Southeastern Utah in the 1940's seems to have been geared to a collecting type survey typical of the 1930's. Nothing was done with the material until the opportunity to study it was provided by the University of Utah and their Glen Canyon Project (Sharrock and Keane, 1962).

Baldwin's (1948) archaeological survey of Fable Valley and Beef Basin in 1945 was hampered by lack of good maps, and was basically aimed at gathering information for recreation study of the Upper Colorado River

Basin. Primary results were to stimulate future professional and amateur visitation to the area. This was particularly true when road and jeep-trail building activities on the part of area ranchers and the Federal Government facilitated visitation to an area heretofore very remote. Many of these visitors were simply treasure hunters looking for prehistoric loot.

The knowledge that this country was now open to vandals spurred the University of Utah's Statewide Archaeological Survey under the leadership of Jack Rudy to first survey and then plan an excavation program in the Beef Basin area in 1952 and 1953. This has remained the only major excavation in the area (Rudy, 1955).

In 1949-52 Alice Hunt entered the scene with the only major planned archaeological survey until recently (Hunt, 1953). Her husband, Charles Hunt, was doing a geological study of the LaSal Mountains for the United States Geological Survey, so it was a rare opportunity for Mrs. Hunt to do the archaeology of an unknown area. She provided a chronology and tool typology for future workers. She also provided some of the stimulus for Rudy's research in the region when she and Bates Wilson surveyed Horse Canyon in what is now Canyonlands National Park (Hunt and Wilson, 1952). This latter work provided important information, along with the author's reconnaissance of the area (Pierson, 1962), when park studies which resulted in the formation of Canyonlands National Park in 1964 were being made. Credit should be given to Bates Wilson, then Superintendent of Arches National Monument, for getting Alice Hunt and the author involved and recognizing the importance of the archaeological resources of the Needles area.

Salvage excavation of five burials in the front yard of Mrs. Renee Polley in Moab was done in 1959 at Mrs. Polley's request. Eighteen years later, in 1977, more burials were found by another owner, Mrs. Arthur Secrest, and she requested their removal. The projects were carried out in cooperation with the Moab Museum, under the author's supervision (Moab Museum collection).

Little archaeological work has been done in the area since the early 1950's that has not been done for one Federal agency or another. Salvage excavation in the proposed, but never developed, Plainfield Reservoir, to be located at the juncture of the north and south forks of Mill Creek, was done under contract with the National Park Service by the University of Utah in 1960. The money was provided by the Bureau of Reclamation. Little was actually accomplished by this excavation for the area was a favorite spot for local vandals seeking loot (Pendergast, 1961, a & b).

Archaeological inventory and survey represents the bulk of the recent archaeological research in the area. Much of this has been done for land management purposes under various Federal legal directives such

as the National Environmental Policy Act of 1969; Executive Order, 11593; the National Environmental Policy Act of 1960; and the Archaeological and Historic Preservation Act of 1974 which have directed Federal agencies to consider the cultural resources in their planning and to take a preservation attitude. Consequently, most agencies have adopted a policy of avoidance rather than salvage of the cultural resources, necessitating inventory ahead of land-disturbing projects. Most of these projects provide important information but are not research projects in the true sense of the word, although the data gathered can be used in research if some planning is done.

Under these terms the BLM had the Four Corners-Huntington Power Line surveyed by the author in 1970; the Dolores Triangle surveyed ahead of chaining in 1967 by Brigham Young University; Seven Mile Mesa surveyed by LaMar Lindsay (1974b), then a Bureau of Land Management temporary employee, about 1974; the Dolores River Canyon by David Breternitz of the University of Colorado as principal investigator in 1975 (Toll, 1977); and numerous smaller project investigations since 1975. The same range environmental impact statement required by a lawsuit against the Federal Government that produced this report also was responsible for a stratified random sample survey of the same area in 1977 by Richard Thompson (1978) of International Learning and Research Incorporated, associated with Southern Utah State College in Cedar City, Utah. This survey was a 1 per cent sample and stratified according to vegetation types. Theoretically, a projection of the survey findings will provide management with a predictive model of cultural resources on other similar areas in the region.

The U.S. Forest Service has made surveys similar to those of the BLM and for the same reasons. Marilyn Malone and Terry Walker, in 1976, surveyed ahead of a chaining project in the Two Mile Creek area near LaSal and provided management with alternatives to destroying or salvaging the resources present (Malone, 1976). Dee Green and Evan DeBloois did a similar survey in 1970 of the Slaughter Flats, Amasa Back, and Dorry Ridge areas. They used the opportunity to develop a research design involving statistical analysis and dealing with lithic campsites to determine what use they served (Green, 1974). They also designed another research project in 1973 for the chaining area to analyze to what degree bulldozers destroy archaeological values (DeBloois, Green, and Wylie, N.D.).

The National Park Service has management problems, too, and must know what the resource is like and where it is. Floyd Sharrock (1966) directed a survey of the Needles and the Island in the Sky Districts of Canyonlands

National Park in 1965 and 1966. Michael Berry (1975) directed a similar inventory and survey in Arches National Park in 1974 just outside the area under discussion. Berry also used site data material previously gathered by the author and other park personnel to provide the National Park Service with an excellent local chronology and summary of the values present.

One piece of non-Federally oriented research has been accomplished in recent years in the area. This is the survey of North Cottonwood Canyon by Larry D. Davis in 1968-1974 as part of his masters program at Brigham Young University and as part of an overall research program being carried out in Southeastern Utah by Brigham Young University under the direction of Raymond Matheny (Davis, 1975).

Historical research has mostly been done by people teaching in universities and colleges and other non-Federally stimulated or directed enterprises. Although the Federal laws require consideration of historical resources on the same level with archaeological resources, archaeologists rarely recognize or bother with historical sites in their surveys. Historians, on the other hand, worry little about specific sites and mostly use documentary evidence. No historical archaeology has been undertaken in this area.

The historical events of the area have been well outlined in two regional histories (Tanner, 1976; Peterson, 1975). To these must be added a multitude of shorter articles appearing in various journals such as the Utah Historical Quarterly, and a number of books and unpublished research papers about individuals or facets of past life in Southeastern Utah. The Daughters of the Utah Pioneers have produced county histories for Grand and San Juan that contain much good in addition to family histories (Cortes, 1972; Perkins, Nielson, and Jones, 1957).

One Federally funded research endeavor that has produced historical data was the Glen Canyon Project in the 1960's. Primarily designed as an archaeological salvage project, its director, Jesse D. Jennings, saw the wisdom of making it an interdisciplinary study including much excellent historical research that indirectly produced information concerning the area under discussion. The program resulted not only in scholarly works in the University of Utah's Glen Canyon Series (Creer, 1958; Crampton, 1959, 1960, 1962, 1964a, 1964b, 1964c), but also in popular histories such as Gregory Crampton's "Standing Up Country" (Crampton, 1964d).

The recent commemoration of Dominguez and Escalante's journey through Utah has stimulated some historical research. Donald Cutter of the University of New Mexico has reported briefly on an old journal of Rivera dealing with early Spanish trips to Spanish Valley in 1765 (Cutter, 1977). Crampton has indicated (personal communication, 1977) that he is trying to better locate the Old Spanish Trail originally researched by the Hafens (1954). Recently Crampton has published the results of this study (Crampton, 1979).

One historical researcher, John F. Hoffman (personal communication, 1978), has done a study for the Utah State Historical Society for the National Register of Historic Places and other purposes, in the Moab area. The Utah State Historical Society has other on-going programs in historic preservation and research including photograph preservation, oral history programs, survey of historic properties for State and Federal register purposes, document preservation, and folk industry conservation.

Present Research Orientation

Most of the research being done in the area at present is aimed at solving management problems. Solving archaeological or historical research problems is secondary. The management problems are principally those resulting from the edicts of the Federal environmental legislation and interpretations of it. The management problems are being solved as cheaply and pragmatically as possible using an avoidance procedure where there are conflicts between development and cultural resource sites.

Recent archaeological research in the region has been oriented to solving problems of chronology, or at least establishing a better chronology. Other related studies in ecology have resulted from some of these excavations, particularly those in Castle Valley, Emery County, where several dry caves have been excavated which contained much perishable material. Paleoecological, dietary, and agricultural problems during the late Archaic have been studied at Clydes Cavern by Winter and Wylie (1974) using pollen in coprolites, alluvium studies, and plant remains. Other studies have analyzed Fremont agriculture and corn from archaeological data from the same source (Winter, 1973). Split-twist figurines have been restudied (Schroedl, 1977a) as the result of new finds at Cowboy Cave.

A study of prehistoric adaptation to a canyon environment was carried out in connection with the archaeological survey of the Dolores River Canyon (Toll, 1977).

Other attempts have been made to determine prehistoric man's use of the environment and which areas he was most likely to use at different periods. A one per cent stratified sample survey contracted by the BLM, primarily for management problem solving, used vegetation zones to stratify the quadrants surveyed (Thompson, 1978).

Dee Green (1974) has investigated several lithic sites in the LaSal Mountain area within a problem-oriented research design whereby he tested several hypotheses regarding what he should expect to find on different kinds of use areas based on lithics. Unfortunately his results were inconclusive due to sample size and no cultural or chronological information was obtained because the sites had no diagnostic materials.

There is still a need in the specific area under discussion for chronological studies, especially of the earlier periods, and for studies of cultural variation in the area. These can only partially be attempted with survey alone. The need is for good excavation using present-day techniques of analysis. Little more can be done with lithic surface survey materials, for the area has been heavily collected so that any serious research can only reflect this deficiency.

There are some anomalies in the prehistoric occupation of the area, such as the apparent lack of use of the mountain areas by other than the earliest lithic peoples, and the historic documentation of use of the mountains by the Numic speakers with little physical evidence of this reported from the mountains.

Detailed research might tell us exactly how the plateaus and canyons were used by the Anasazi peoples living there. Good dating of the sites is still possible and would aid in resolving these research questions. Analysis of the local Anasazi pottery is a must if we are to really understand the local population and their interrelationships on a local level and with outsiders.

There are some gaps in the historical research coverage. Some of the recent events now have enough time behind them so that a good objective historical research project could be accomplished while some of the individuals who were involved in the events are still available. Early mining and later activities concerned with uranium need research in particular.

CHAPTER 2

ARCHAEOLOGY (PREHISTORY/PROTOHISTORY)

Cultural History and Past Lifeways

Introduction: The prehistory and protohistory of Southeastern Utah, in general, and the specific area under discussion, in particular, is known mostly from archaeological survey work which gives a somewhat biased viewpoint of what actually took place and why. To flesh out the present local archaeological knowledge it will be necessary to interpolate pertinent data to the local situation.

It is felt that the report will make the most sense if each cultural unit is described and discussed and then a summation of the past lifeway given. This will keep the data from each period together and make the cultural resource synthesis somewhat more meaningful. A brief summary of the archaeological history of the area and attributes of the various cultural units set in a time frame is presented in Table 5 to orient the reader and place the narrative in perspective. Events will be discussed starting with the earliest.

Some comparative material from a distance will also be used where it is deemed necessary to complete the total picture and make better sense of the local archaeology.

The writer's research bias is in the area of cultural history. Some archaeologists may feel slighted that the processual type of archaeology does not receive more emphasis here. In addition to the writer's bias, there is the justification that very little processual archaeology has been done in the area and the data available does not always lend itself well to processual archaeology, coming, as much of it does, from survey information.

LITHIC STAGE (Paleo-Indian)

General: The earliest stage in the development of the prehistoric peoples of the area is a big-game hunting stage termed the Lithic. The various sub-divisions of the stage are discussed below, but in general they are recognized by their diagnostic point types. They are grouped together because of their common lifestyle and because most of the tools that they used are the same down through time, with the exception of emphasis variations from complex to complex. Additional tools include small unfluted points, side and keeled scrapers, hammerstones, crude bone implements, cylindrical bone shafts with beveled ends, cobble choppers, mammoth bone shaft wrenches, spokeshaves or notchers, burins, and gravers (Sellards, 1952; Haury, Sayles, and Wasley, 1959; Judge, 1973; Irwin and Wormington, 1970; Wormington, 1957; Haynes and Hemmings, 1968).

CULTURE STAGES	TIME	DIAGNOSTIC TRAITS AND SUBSISTENCE PATTERNS
<u>LITHIC (Paleo-Indian)</u>		<u>Hunters of Big Game</u>
Llano Complex	9500-9000 B.C.	Mammoth Hunters/Clovis Points
Folsom Complex (Moab Complex in part)	9050-7050 B.C.	Pleistocene Bison Hunters/ Folsom Points
Plano Complex (Yuma)	8500-5500 B.C.	Bison Hunters/ Firstview type points
<u>ARCHAIC</u>		<u>Hunting and Gathering</u>
Early (Moab Complex)	6050-4550 B.C.	Pinto/Folsom Points
Middle (LaSal Complex)	2570-1120 B.C.	Elko/Pinto/Gypsum Points
Late (Uncompahgre Complex)	1500 B.C. - 450 A.D.	Side and Corner-notched Points. Corn?
<u>FORMATIVE</u>		<u>Corn/Beans/Squash Agriculture</u>
Anasazi (Mesa Verde Branch)		
Basketmaker II	1-500 A.D.	Caves/atlatl
Basketmaker III	450-750 A.D.	Pithouses/bow/pottery
Pueblo I (?)	750-900 A.D.	Pueblos
Pueblo II	850-1100 A.D.)	Pueblos in South
Pueblo III	1100-1300 A.D.)	Pithouses in North
		Mesa Verde Pottery
<u>RECENT NOMADS</u>		<u>Hunting and Gathering</u>
Numic (Utes)	1150 A.D. (?) - Present	Transhumance/horse/tipis/ agriculture (late)
Athabaskan (Navajos)	1500 A.D. - Present	Hunting/gathering/hogans/sheep/ horses/agriculture (late)

TABLE 5

Prehistoric Cultures in the Canyonlands Area
Southeastern Utah

Scrapers are a most important tool found in Clovis and other Paleo-Indian assemblages. Side scrapers may be divided into types according to the shape of the worked edge: straight, concave, convex, or by the location of the retouched edges: ventral, bifacial, transverse, and thinned-back. Transverse side scrapers are retouched opposite the butt, but the retouch is not steep and there is no bit. Thinned-back scrapers have a simple retouch on one edge and one edge has been blunted as if for hafting. Double scrapers are of four types: with convex adjacent edges, with one convex and one concave or straight edge, triangular forms with straight or slightly convex edges, and one form in which the butt or point of detachment has been removed and the whole completely reshaped by retouch (Irwin and Wormington, 1970).

Raclettes are a special kind of scraper found in all Paleo-Indian assemblages. They are thin flakes with fine, non-random, evenly executed retouch flaking.

End scrapers come in three major groupings. Within the first group there are three types. The first is triangular with little retouch at the bit and retains the bulb of percussion. Another type has a spur or beak at one or rarely both sides and some are quite pronounced. A third type has an acute angle where the side and bit intersect. Spurred and angled edge end scrapers show abrasion wear patterns as though they might have been used for ripping or tearing (Irwin and Wormington, 1970, p. 29).

The second group of end scrapers are large flakes with one end retouched, and made to suggest hand-held rather than hafted scrapers.

The third group is distinguished by variations in the shapes of the bits. Bit types are asymmetrical, round, and slightly pointed on small flakes.

Burin are specialized tools with faceted edges, probably used in grooving or chiseling bone or antler for various purposes.

Notchers have a concavity in them which, in laboratory tests, has proved useful for scraping cylindrical objects and for shredding vegetal fibers.

Spurs or gravers have been used to produce needle eyes in laboratory tests (Irwin and Wormington, 1970, p. 30). Beaks resemble spurs, but are thicker and shaped more like a bird's bill. They may be useful for groovers, perforators, or in ripping. Denticulates are flakes heavily serrated and probably are a saw-like implement (Irwin and Wormington, 1970, p. 30).

The above tool kit travels through Paleo-Indian times without too many changes. The primary change is in the point types, and this seems to reflect change in species hunted. There are minor variations in the tool kit, but mostly these are a matter of emphasis, type of site excavated, or interpretation. The above tools were made of fine grained crypto-crystalline materials such as cherts or chalcedony.

Llano Complex: The earliest reported Paleo-Indian remains in all of Southeastern Utah are surface finds of Clovis fluted points of the Llano Complex of Sellards (1952). Tripp (1966, p. 435) reports a surface find of an indisputable Clovis point one-quarter mile east of Acord Lake. Acord Lake is 15 miles west of Emery, Utah, and some 110 miles from the area under discussion. Another point that appears to be a Clovis is reported from Oak Creek Canyon in San Juan County from near a pueblo ruin (Lindsay, 1976, p. 113).

While two points are thin evidence that Clovis hunters may have been in the area, there is added evidence that the remains of one of the major game animals they hunted, mammoth, are found in several locations in and near the area. It should be pointed out that none of these mammoth sites have any evidence that man was associated with them. A mammoth skeleton lies in a small cave less than a mile above the confluence of Courthouse Wash and the Colorado River (42Gr384). It gives the appearance of having washed into the cave. Identification was made by the U.S. Geological Survey in Denver. Another mammoth has been reported (Lavern Young, personal communication) from the Valley City reservoir, found while cleaning the reservoir. One is reported from Cowboy Cave (Madsen, et. al., 1976, p. 54) in Wayne County and C-14 dated minimally at 9860 B.C. Other species from Clovis times in a non-cultural situation are reported from Cowboy Cave. These remains are sloth, horse, bison, and others (Schroedl, 1977a, p. 260).

Just south of the Portal, where the Colorado River leaves the Moab Valley, on the east side is a petroglyph that gives all the appearances of being an elephant. It is termed by the local people the "Mastodon Petroglyph" (42Gr203), and it may well be one, but unfortunately there is no associated site to give credence to this assumption.

The Clovis people were widespread, as they have been identified, mostly through their points from all over the United States, and a few points have appeared in Alaska. Haynes indicated that Clovis were extant at about 9000 to 9500 B.C. and perhaps earlier (Haynes, 1964).

The distinguishing hallmark of the Clovis peoples is the Clovis Fluted point. This may be described as a lanceolate point with a fluted basal section, parallel or slightly convex sides, and concave base ranging from two to four inches in length. The edges of the base usually show evidence of grinding.

The Clovis points were manufactured by working a flake blank bifacially into rough point shape. They were then fluted by striking the flutes from a bevelled platform rather than a nipple-shaped one. There was no evidence of rectanguloid preforms and snapped tips as in later Folsom point manufacturing. Basal grinding was present in a number of the examples. Use of a bone foreshaft is suggested by finds in Montana (Lahren and Bonnicksen, 1974). The shaft wrench described by Haynes and Hemmings (1968) would work best on a wooden main shaft to straighten it with heat and pressure.

There are some regional differences in Clovis points. Most of the western ones seem similar, but those from the eastern United States are somewhat crude, which may be a result of the material as well as the cultural norm.

Two types of sites are known so far for the Clovis peoples, kill and camp sites. The kill sites have been most frequently found and excavated. They show a people adapted to utilizing the mammoth as a food source, hunting them with darts or spears. Whether or not the dart was propelled by an atlatl is unknown. In southern Arizona, at the Lehner site, in addition to nine mammoth remains, which were mostly juvenile animals, there was one horse, one bison, and one tapir (Haury, Syales, and Wasley, 1959). The tapir jaw and bison phalanx were charred, suggesting man's use of them. All of the animals were found in an old arroyo as though they had been trapped and killed while watering. Evidence also pointed to use of the trap on more than one occasion. Whether dependence was on "herd" hunting or single animals is debatable, but Clovis people were primarily hunters with evidence of other types of subsistence lacking as yet. It has been suggested that the hunting technique was to surprise the animals while watering in the arroyo and to hold them there for slaughter by use of a good sized band of men with much noise and perhaps firebrands. After the animal had been killed, butchering took place on the spot. Hearths were found nearby where some of the meat could have been cooked. Tools were found among the animal remains, and they suggest that the large scrapers and knives were used in cutting up the animals and removing the hides (Haury, Sayles, and Wasley, 1959). Boulders were also used in killing the mammoths, as Wormington reports many stones among the bones at the Dent Site in Colorado (Wormington, 1957, p. 44).

Both of the Clovis campsites in Central New Mexico discussed by Judge (1973, p. 255) were located between two sources of water. One was on a low shelf separating two shallow arroyos, and the other was on a sandy ridge separating a shallow basin from a shallow drainageway. Judge points out that in these campsites the blade orientation does not predominate as it does in kill sites. He also reports Clovis points, transverse scrapers of two types (unmodified and bilaterally modified), and side scrapers.

Irwin and Wormington report (1970, pp. 30-31) that Clovis assemblages in the Plains are 19 per cent points and 50 per cent scrapers, of which more than 75 per cent were side scrapers. Tools made on blades comprised 14 percent of the assemblage, much higher than in other Paleo-Indian complexes.

Knives were not common in Clovis times, but they were important, and were similar to those in later cultures. They were large, thin, bifacially flaked tools. Tools with small spurs made up 10 per cent of the total assemblage, and three-fourths of these had more than one spur. There were few notched specimens in the complex, and retouched flakes were rare.

Little is known about social organization based on present data except to infer that some sort of group larger than the family gathered, at least periodically, to hunt mammoth. The discovery of a Clovis-age burial in Montana (Lahren and Bonnicksen, 1974) covered with red ochre suggests religious beliefs in an afterlife. Broken bone foreshafts were with the burial as "killed offerings." Other facets of the lifestyle of the Clovis peoples await finds of more and better preserved material culture.

The Clovis Complex is held by most archaeologists to be ancestral to many of the later Paleo-Indian groups and the Folsom Complex, in particular, seems to be a direct descendant. Folsom points give all the appearance of being a refined edition of Clovis points, changed, perhaps, to meet changing hunting needs.

Folsom Complex: Alice Hunt, in studying the collection of a local collector in Moab, Utah, found Folsom points and an early Pinto point type in a surface association that seemed consistent enough for her to name it as a separate complex, the Moab Complex (Hunt and Tanner, 1960). A similar complex involving Pinto Points and Folsom points occurs near Concho, Arizona, and here, too, it was termed a separate complex, the Concho Complex (Wendorf and Thomas, 1951).

There have been other isolated surface finds of Folsom points in and near the area. Sharrock and Keane (1962) report a Folsom base found on the surface at Sweet Alice Spring. Tripp (1967b) reports another point from the San Rafael Swell country. Others have been found near Grand Junction, Colorado, (Steward, 1933), Montrose County, Colorado (Wormington, 1957, p. 30), on the Uncompahgre Plateau (Huscher, 1939), and near Ferron, Utah (Gunnerson, 1956, p. 412). Alice Hunt reports that four other Folsom points have been found in the area where Tanner's points were found, the area between the Green and Colorado Rivers (Hunt and Tanner, 1960, p. 111). Mrs. V. P. (Agnes) Walker of Moab has also found two broken Folsom points in that same area (personal communication, January, 1978). The map accompanying Hunt and Tanner's article (Hunt and Tanner, 1960, Fig. 1) shows the Moab Complex area extending from the area between the Green and Colorado Rivers along the Spanish Valley and the Land Behind the Rocks to the south slopes of the LaSal Mountains.

The Moab Complex and the Concho Complex are found in similar situations. The artifacts are found in sandy areas where deflation has exposed the materials so that they lie on the exposed sandstone bedrock. The Moab Complex contains, in addition to the Folsom points and Pinto points, snub-nosed scrapers, large projectile points with sloping shoulders and straight bases, a stemmed knife, oval side scrapers, a pick, and a perforator (Hunt and Tanner, 1960, p. 111).

Whether the association of the Folsom points and the Pinto points in both complexes is fortuitous or actual is debatable. Dating of the two point types shows them separated in time in most datable situations. Several things could have happened to place these points together. 1. Deflation could have moved the usually later-dated Pinto points downward

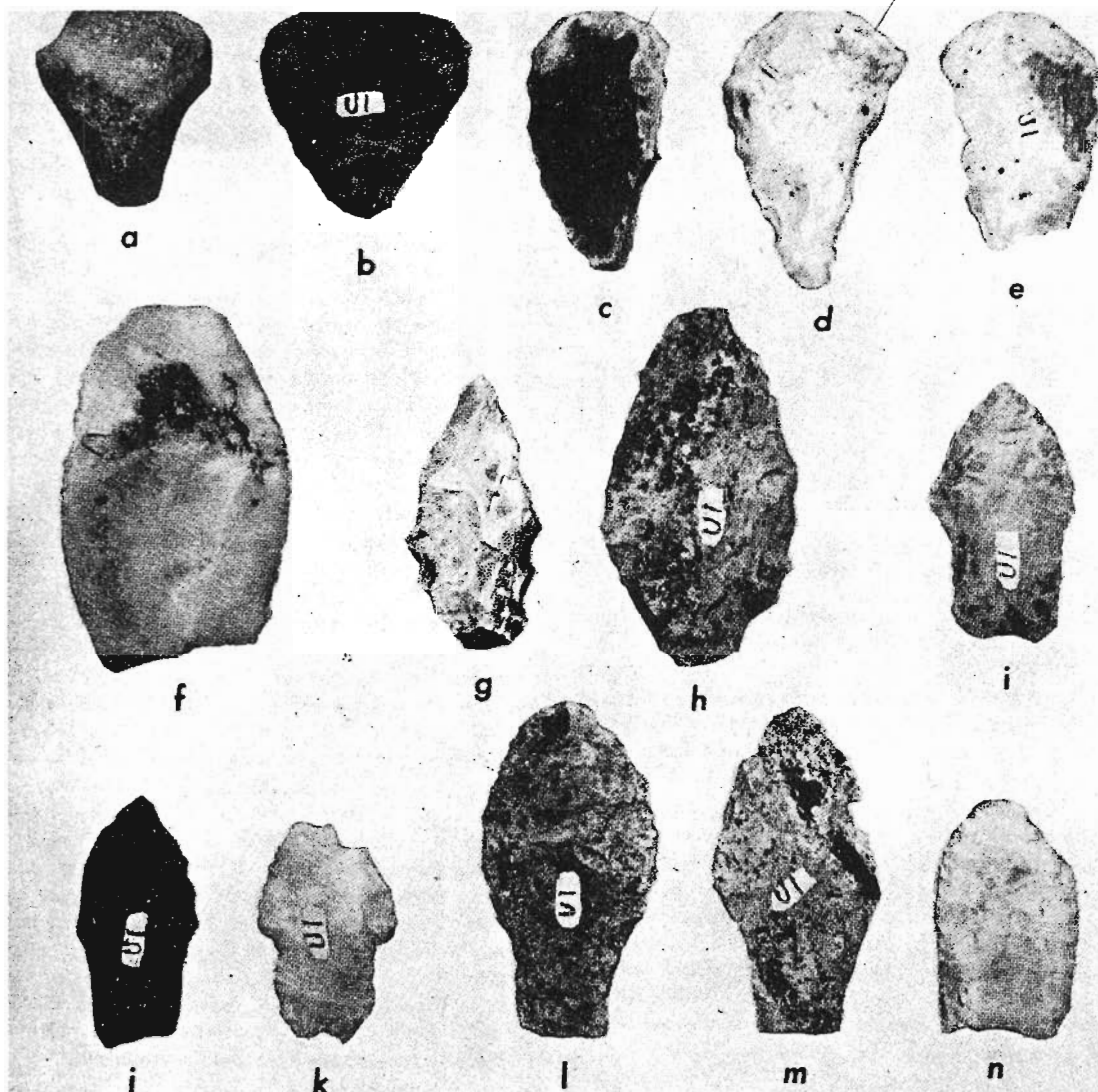


Figure 4. (Hunt and Tanner, 1960, Fig. 3). Artifacts of the Moab complex found together in a depression on a sandstone bench. a-e: snubnose scrapers; f: oval scraper; g: pick; h: knife; i-k: Pinto A projectile points; l, m: large points with sloping shoulders and straight bases; n: Folsom Point.

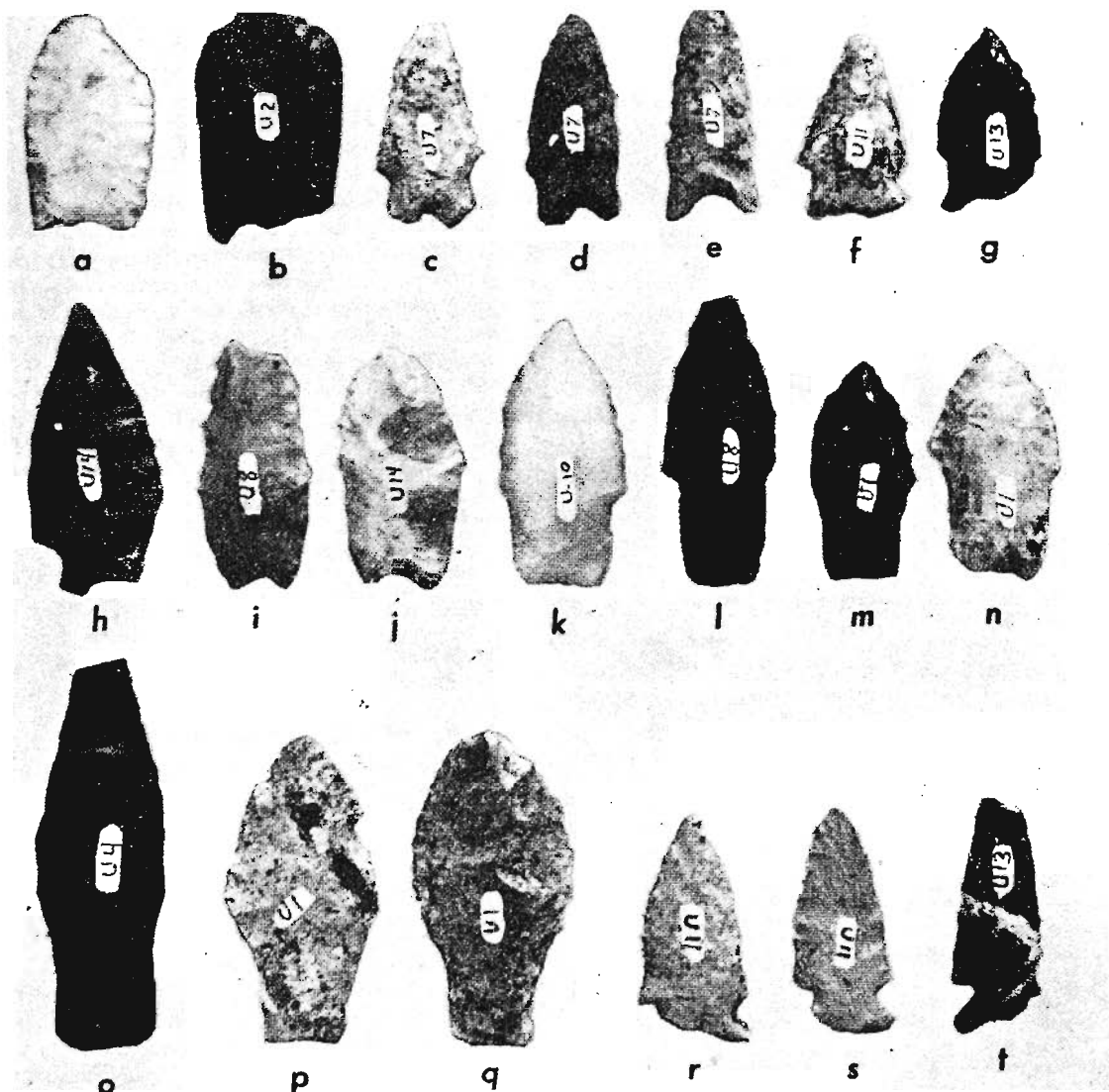


Figure 5. (Hunt and Tanner, 1960, Fig. 4). Projectile points from the general area of Moab complex sites. a,b: Folsom points; j-n: Pinto A points; o-q: large points with sloping shoulders and straight bases; a-q: part of the Moab complex; c-i, r-t: points found nearby cannot, at this time, be identified with the complex.

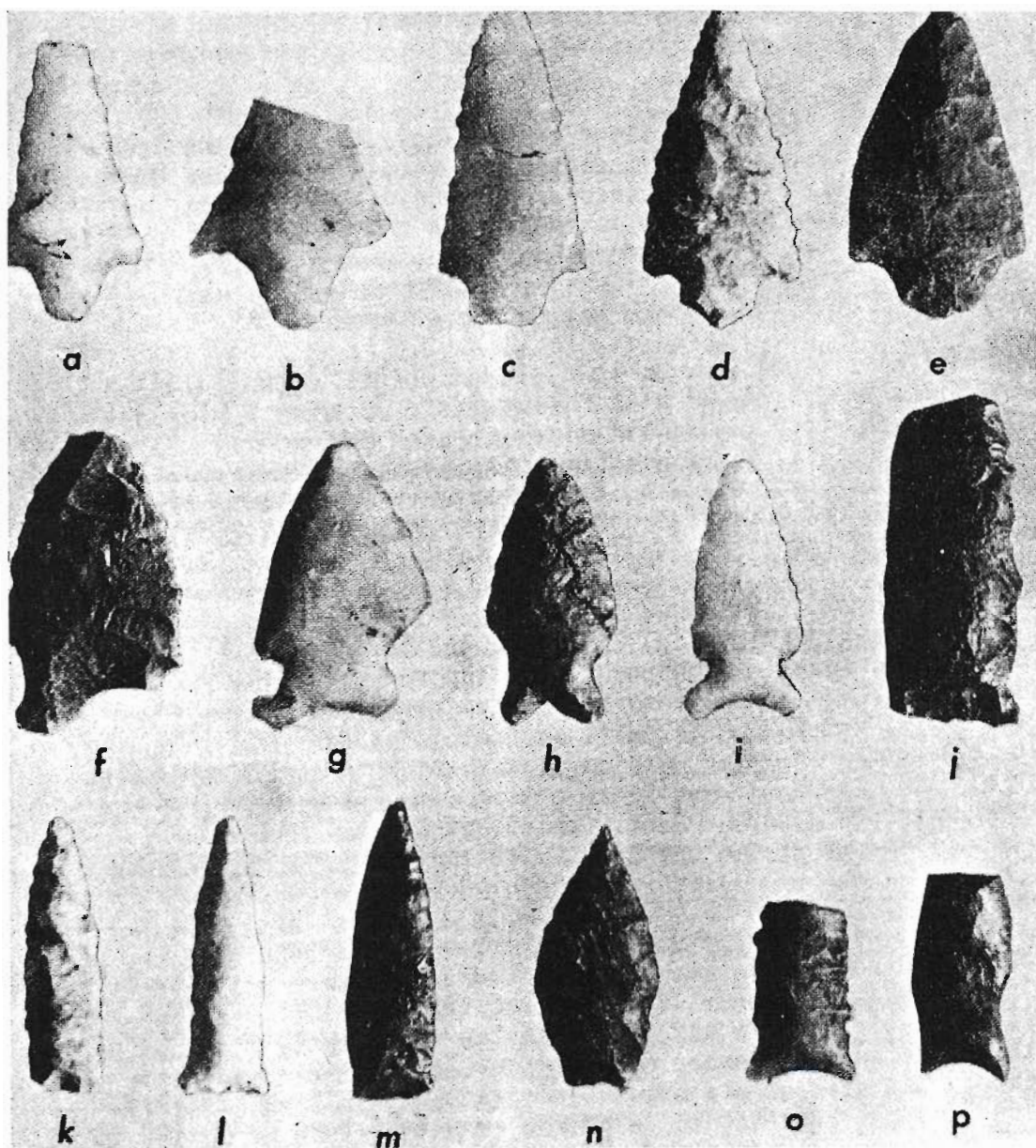


Figure 6. (Hunt and Tanner, 1960, Fig. 5). Projectile points characteristic of the LaSal complex.

to mix them with the earlier Folsoms. 2. Pinto peoples could have found Folsom points and taken them with them as heirloom pieces because of their fine workmanship. 3. The sites may well represent the contact period between late Folsom and early Pinto, the former coming from the east and the latter originating further west. For purposes of this section of the paper we shall discuss the Folsom and Pinto complexes separately in a more conventional chronological system, but with the above anomaly in mind.

The Folsom complex dates roughly from 9050 B.C. to 7050 B.C. (Schroedl, 1977b, p. 4) Judging by the fluted points, it is a lineal descendant of the Clovis complex. Folsom points are very distinctive, having flutes on either side, a PT boat shape with concave ground base, and finely chipped edges. The flutes extend almost the full length on either side and there is frequently a small nipple in the concavity. There is some overlap in size, but the Folsom points are generally smaller, lighter in weight, and more finely chipped than the Clovis.

The tool kits usually found with Folsom points at both kill sites and camp sites are single and double-edged side scrapers, thin flake scrapers with fine chipping called raclettes, beaked end scrapers, angle-edged end scrapers, drills, knives, notchers or spoke shavers, gravers, denticulated or saws, hammerstones, core choppers, and rubbing stones (some covered with red ochre) (Irwin and Wormington, 1970, p. 27; Judge, 1973, p. 189; and Wormington, 1957).

Irwin and Wormington (1970, p. 30) found the Folsom tool kit to consist of 23 per cent points and 49 per cent scrapers, of which 40 per cent were side scrapers, 40 per cent were end scrapers, and the rest raclettes. More than half of the end scrapers were of the angle-edged and spur variety. All end scrapers were on flakes, as were 86 per cent of the side scrapers, the remainder being on blades. Total blade percentage for all tools was 5.64 per cent. Knives were 4 per cent of the total, and spurred implements 16 per cent, with most of them having single spurs. The sample used came from the Lindenmeier Site in Colorado.

The Folsom peoples were primarily hunters of the large, extinct late Pleistocene bison. They also hunted other fauna such as deer, wolf, rabbit, and camel. Several types of locations were utilized by the Folsom peoples for their lifeway. Hearths and camp areas (where at least part of the kill was processed) are frequently found with kill sites. In the Albuquerque area 80 per cent of their campsites were located northwest of playas, which they may have been using for game traps, and all were within 150 yards of an overlook or on it (Judge, 1973, pp. 196-197). Judge discusses three types of campsites: Base camps, Armament sites, and Processing sites (Judge, 1973).

"Base camps" were campsites designated as such because of the high number of tools encountered in these locations, and a high number of scrapers used to manufacture "hard wares" (bone, antler, hardwoods) are found there. The base camps seem to have been located with regard to major hunting areas, close to running water, and with the presence of a playa in the vicinity of the site (Judge, 1973, p. 201).

"Armament sites" were campsites where implements of the hunt were made. These sites were near an overview or lookout point, with some situated right on the overview. Snapped preform tips and channel flakes are found on these sites. Scrapers to work "hard ware" are common, suggesting that points were rehafted at these sites (Judge, 1973, p. 203).

"Processing sites" were campsites near water, and scrapers which had been used on "soft ware" (softwood, hide, and similar "soft" material) are high in number. A large percentage of point bases present on the sites indicates weapon renewal (Judge, 1973, p. 204). The presence of water seems to indicate hide processing at these sites, when viewed with the other site attributes.

The Folsom point is probably the most sophisticated stone artifact made in the New World. The technique employed in making them was also highly sophisticated, according to Judge (1973, pp. 166-169). A flake blank was first removed from a large core with a Levallois technique so as to obtain a flat flake. The flake blank was then worked by soft hammer percussion into a rectangular preform, twice as long as it is wide. The base was then prepared for fluting by chipping a W-shaped, nipple like platform in one end of the preform. The platform was heavily abraded and the flake removed by striking the platform, most likely with an indirect percussion technique. After the first flute was removed another W-shaped platform was chipped into the base and the process repeated for the other flute. This tended to form the "ears" seen on many Folsom points.

When the point was to be finished the end of the preform was snapped off at the end of the shortest flute. The edges of the preform were then finely chipped into the typical shape of the famous Folsom point. The final touch was to grind the edges of the basal portion of the point for hafting into a bone foreshaft, and finally, a dart or spear was made of the point, foreshaft, and shaft.

There is no positive evidence to indicate whether the Folsom hunters used darts propelled by an atlatl or used spears. The small size of the points does suggest that a light dart may have been used which, in turn, suggests the use of the atlatl to gain strength and propelling power.

Evidence of use of ornamentation by Folsom peoples is provided by the finding of a simply carved hematite bead and another of lignite at the Lindermeier site (Wormington, 1957, p. 37). Pieces of hematite and grinding stones stained with red paint at the same site may indicate either body painting or painting of the dead as shown by the Clovis burial noted above.

Beyond these few cultural insights there is little evidence to tell us of the lifestyle of these peoples.

Plano Complex: The Plano Complex consists of a multitude of point forms from many places in the Plains and Colorado Plateau areas. At one time they were all roughly classed as "Yuma." Most of the Plano Complex cultures have been dated post-Folsom, but a few seem to be coeval with

Folsom. Midland, Plainview, and Agate Basin appear to overlap with Folsom (Wheat, 1972, p. 158), while Angostura, Hell Gap, Cody, Frederick, and Firstview appear to be later. The Plano Complex dates roughly from 8500 B.C. to 5500 B.C. (Wheat, 1972, p. 157).

One point of the general Yuma type was found by Hunt (1953, pp. 24-25), all by itself, high in the LaSal Mountains at an altitude of 10,500 feet in the Beaver Creek drainage (42Gr109). She reports that is a "Yuma" type, made of novaculite probably from west Texas, and resembles Angostura points dating at 4000 B.C. Hunt also indicated (1953, p. 21) that there are other similar points which have been found in the Moab area and that they also resemble Angostura or Plainview type points. There are some of these points in the Williams collection in the Moab Museum, but, unfortunately, their place of origin is unknown. None have been found in a situation that would preclude them having been brought into the area by later peoples, such as the nomadic Utes.

Lindsay (1976, p. 22) identifies Hunt's LaSal Mountain "Angostura point" as a "Milnesand" point. However, if the illustration of the point by Hunt is life-size (as all of her other illustrations are), then it measures approximately 92 millimeters long by 26 millimeters wide, and is too large for a Milnesand point. Most Milnesands from the type site were less than 80 millimeters long and 25 millimeters wide (Sellards, 1955). In a later publication Hunt (1960, p. 10) also identifies the point as being 3½ inches long with a thinned base, and similar to Agate Basin points.

The illustration of Hunt's point also resembles Wheat's (1972) type called "Firstview," without basal grinding. Wheat also reports that Firstview points are similar to Agate Basin and Milnesand. In his discussion of Milnesand points from the type site (Wheat, 1972, p. 154) he points out that the original description of Milnesand points includes types which could well be classified as Firstview, Plainview, San Jon, and Agate Basin types.

The Plano Complex picture is still confused in spite of many excavated sites. Within the Complex are the series of large lanceolate points, formerly termed "Yuma," with square or concave bases that strongly resemble one another and could well be local versions of one broad type. They are widespread over the plains area and into the Upper Colorado Plateau region. They all seem to occur with a somewhat similar tool kit consisting of single and double side scrapers, raclettes, end scrapers, knives, notchers or spokeshaves, spurs, beaks, and denticulates (Irwin and Wormington, 1970, p. 27).

Most, if not all, of the Plano peoples were hunters of the various large late Pleistocene bison species that roamed western North America. The Plano hunters may well have accomplished or at least assisted in the extinction of the Pleistocene bison by their hunting pressures. If the Olsen-Chubbuck site is any example, they were at times what today is considered a "game-hog," killing far in excess of what they could possibly

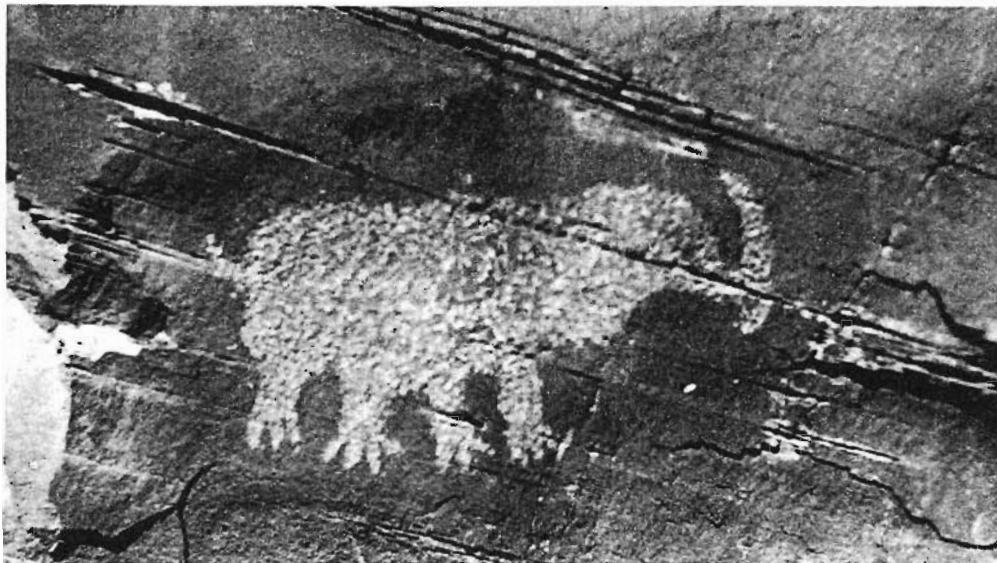


Figure 7. Mastodon petroglyph (42Gr203) on Colorado River near Moab, Utah.

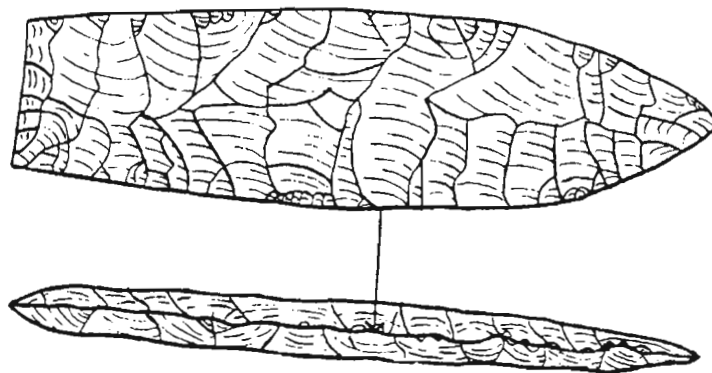


Figure 8. (Hunt, 1953, Fig. 7) Yuma type point from LaSal Mountains.

eat or process before the animals began to rot. At Olsen-Chubbuck, Wheat (1972) found some 190 animals that evidently had been stampeded into an arroyo. More than forty of these animals received little butchering as they were on the bottom of the heap and probably beyond use by the time they were reached. It must have taken a goodly sized group of people to run a buffalo herd of this size into an arroyo and to process most of the animals. Wheat indicates that it probably took some 225 man hours to butcher the bison at the Olsen-Chubbuck site (Wheat, 1972, p. 116).

Using ethnographic data Wheat (1972) draws a picture of the activity at the bison kill. The skin was removed first to be used as a place on which to put the butchered meat. The underside flesh was removed, and the front leg and shoulder removed as a unit. Rear leg flesh was stripped off next. Ribs and/or internal organs could be reached at this point. The animal could be cut in two at this stage, or the meat merely cut away. The hump ribs were then broken off after the removal of the hump meat. The tongue was removed at any time, either by slitting the throat or removing the lower jaw with the tongue attached. Long bones were cracked after meat removal to obtain the marrow. Probably depending on needs, the skulls sometimes were cracked for brain removal. Horns, too, were not always removed.

During all of this activity there was periodic feasting, depending on hunger and personal desires. Tongue, lips, udder, and liver were favorites among historic Plains Indians.

The pattern indicated above seems to be typical of most Plano Complexes. At times the bison were run into a swampy area or a small pond to impede escape, and single animals or only two or three were sometimes taken, but dependence upon bison appears to have been predominate. Other facets of the Plano lifeway are lacking, for most of the knowledge of these people comes from their kill sites.

All indications are that, except for the species change in the large game animals hunted and the change in point types, there was little variation in the lifestyle of the various Paleo-Indian peoples over their known existence from 9500 to 5500 B.C. Chances of Paleo-Indians having been in the area under discussion are fair to good from the present evidence. All of the local data so far is from surface sites, but little attempt has been made to locate and excavate possible Paleo-Indian sites in the area.

ARCHAIC STAGE

General: The archaic stage in western North America is beginning to emerge as one of the more complicated prehistoric stages in terms of regional variation. Part of the complication is the fact that each researcher, for one reason or another, tends to describe the local mixture of archaic lithics, frequently surface materials, as a separate complex, with little attempt at real synthesis. This is partly because of the state of the art and partly because so much analysis has had to rely on surface materials until recently.

At the Archaic stage three basic culture areas, Plains, Southwestern, and Great Basin, seem to gain some positive identity while at the same time still retaining a degree of similarity which some researchers tend to stress more than the differences (Irwin-Williams, 1968a). The Archaic holds a very important place in the cultural history of the West and in particular the Northern Colorado Plateau. The Northern Colorado Plateau seems to be an area of interplay and crosscurrent between all three of the basic Archaic culture areas.

The cultures of the Great Basin appear to have been at an Archaic stage for most of their existence. They began much earlier than the other Archaic groups in the West and some of them existed concurrently with Folsom peoples (Jennings, 1966b, pp. 84-85). Both Plains Archaic and Southwestern Archaic had their roots in Paleo-Indian cultures.

Jennings' concept of a Desert Archaic or Desert Culture that remained much the same for some 10,000 years and was spread over most of the Desert West (Jennings, 1957) has broken down in some respects in recent years. This has occurred as more Archaic and regional differences, although admittedly slight, have emerged. Mexican cultures are seen as having a great deal of influence on the Southwestern Archaic, particularly in the late periods. In recent years both the Great Basin Archaic and the Southwestern Archaic have been shown to have long in situ development sequences (Jennings, 1957; Irwin-Williams, 1968; Aikens, 1970). However, as a synthesis of the Desert West's prehistoric cultures the concept of the Desert Culture is still useful and thought provoking.

The "big" picture as painted by Jennings (1966b, pp. 84-85) shows Archaic peoples depending on a foraging economy involving a wide spectrum of species that were used as they were available seasonally. The tool kit contained many of the earlier tools developed in Paleo-Indian times, plus many special new tools designed to meet new exploitative endeavors. Diagnostic are the slab milling stones, small manos, flexible twined basketry, and coiled basketry. Also found are netting, fur cloth, woven sandals, atlatl, hardwood dart points, digging sticks, curved wooden clubs, fire drills and hearths, tubular pipes, shells traded from California for ornaments, and choppers, scrapers, and crude pulping planes. Lifestyle was that of a sparse population in extended families living in caves and overhangs for permanent settlements, and intensively exploiting the environment for all and any useful species. Small seed harvesting was important, with special techniques used in preparing, cooking, parching, milling, and mashing foods.

Great Basin Archaic: Schroedl (1977a and 1977b) reports on data from Cowboy Cave, located on the west side of the Green River just outside the Barrier Canyon enclave of Canyonlands National Park some forty miles west of Moab. The earliest layer, Unit I, in this dry cave produced animal dung with no human culture, dated at 9810 B.C. The dung was mostly bison, but sloth, horse and other animals may be present.

Units II and III at Cowboy Cave represent an early Archaic use of the cave, and the units bracket the period from 6350 B.C. to 4350 B.C. Artifacts were sparse relative to later levels, but contained handstones and milling stones, a plain-weave yucca sandal, fur, hide, one rod and bundle basketry, one rod and welt basketry, two-ply Z twist cordage (62 per cent), S twist two-ply cordage, Northern side-notched points, Elko series projectile points, rabbit and rodent bones. Wooden atlatl parts, incised and painted sandstones, clay figurines, and clay spindle whorls occur in Unit III. Schroedl says Jennings has tentatively assigned these two units to Lindsay's Desha Complex, a Northern America complex.

The top levels of Cowboy Cave, Units IV and V, are dated between 150 B.C. and 450 A.D., with some indication that the top level, Unit V, dates between 370 A.D. and 450 A.D. The two units contained handstones, milling stones, corn, skin bags, split willow twig figurines, Gypsum points, Elko series points, wooden atlatl parts, one rod and bundle basketry, one rod and welt basketry, S twist two-ply cordage (55 per cent), Z twist two-ply cordage, problematic basketry objects, bone awls, bone gaming pieces, hyoid bone pendants, incised and painted sandstones, unfired clay figurines, and clay spindle whorls. Unit V, alone, contained Rose Spring projectile points, arrow shafts, and arrow parts. Jennings tentatively assigns these units to a Basketmaker II level (Schroedl, 1977b).

Lifestyle for the occupants of Cowboy Cave revolved around the gathering of various grasses, as evidenced by the great amount of chaff in the fill. Small animals such as rabbits and rodents were also hunted with an atlatl and, after 300 A.D., with the bow and arrow. Corn was grown, but apparently the people had little more dependence upon it than they did upon the other grass plants.

The practice of magico-religious rites is indicated by the presence of the split-twig figurines which show interest in large mammals, probably desert bighorn or deer; however, strangely enough, no large ungulate bones are present in the cave debris. Other religious practices may be represented by the large and ornate panel of pictographs just down the canyon from the cave. This is the famous Great Gallery which has been assigned to the Archaic period by Schaafsma (1971, p. 135) and called the Barrier Canyon style of pictograph. They represent large tapered-body anthropomorphs with an ample head and frequently a decorated body area. Some have arcs of paint over them, and each panel usually has a dancing man and animal scene present. The detail and design elements present have very few parallels in the Southwest, although Schaafsma sees some with Texas Pecos River styles (Schaafsma, 1971, p. 131).

At Pint Size Shelter in Castle Valley south of Price, Utah Lindsay and Lund (1976) report an Archaic level dating at 2570 B.C. to 1440 B.C. It contained Gypsum points, Elko Corner Notched points, flat slab metates, unshaped one-hand manos, triangular point fragments, drills, bifaces, unifaces, cores, and worked flakes. The pollen record from the shelter gives the only indication of the lifestyle, as it suggests high grass and Cheno-Am usage. Lindsay and Lund feel that the evidence from

Pint Size along with others in the area (Clydes Cavern, Joes Valley Alcove, and Sudden Shelter) indicates a seasonal round similar to the proto-historic Numic pattern as described by Seward (1938) with Pint Size being occupied in the summer intermittently. Buffaloberry, ephedra, yucca, and cactus pollen may also be an indication of foodstuffs.

At Sudden Shelter, near Pint Size Shelter, on the east side of Salina Pass, two Archaic levels are reported (Lindsay and Lund, 1976, p. 56). The lower level radio-carbon dates at 5250 B.C. to 4550 B.C., and contains Pinto and Elko series points (Schroedl, 1977a, p. 6). The upper level dates at 2650 B.C. to 1050 B.C. and contains Gypsum points. Sudden Shelter contained great amounts of animal bone, including antelope (Lindsay and Lund, 1976, p. 71). The Pinto point dating is bolstered by a date of 4250 B.C. for Pinto points from Joes Valley Alcove in the northeastern part of Castle Valley (Lindsay and Lund, 1976, p. 56). The basal date for the Archaic at Joes Valley Alcove was 6050 B.C. (Berry, 1975, p. 25).

Clydes Cavern is another site in the Castle Valley Area, located in the San Rafael Swell, and containing Archaic materials. Level 1 is described as Late Archaic, from artifacts, and contained metates and a rabbit-skin robe, with a radio-carbon date of 1120 B.C. (Winter and Wylie, 1974, p. 305). Level 2 is also described as Late Archaic with corn recording 460 A.D. dating it. The corn is mostly tripsacoid but with eight cobs of Early Chapalote and nine slightly dented kernels (Winter, 1973, p. 450). The corn, like that at Cowboy Cave, was apparently not greatly depended upon in the Archaic period but treated more as another grass rather than as a domesticate. This may mean that there were attempts to grow or to assist nature in the growing of wild grasses during the Archaic period as has been suggested as the basis for agriculture (see Winter, 1976, for discussion). Level 2 also produced coprolite evidence of the following plant use: Allium (onion), Echinocereus (hedgehog cactus), Helianthus (wild sunflower), Phragmites (reed cane), Pinus (pine) (Winter, 1973). Animal remains during this same period indicate the use of ground squirrel, kangaroo rat, chipmunk, jack rabbit, wood rat, cottontail rabbit, and an unidentified bird (Winter and Wylie, 1974, p. 313).

Lindsay (1970, p. 23) identifies Level 2 in Clydes Cavern as a Basket-maker II occupation. Adovasio reports both Fremont and Anasazi basketry from the same level associated with the atlatl and corn (Adovasio, 1971).

Based on much of the foregoing data Schroedl (1976) classifies the following Archaic phases for the Northern Colorado Plateau:

Black Knoll Phase (6350 B.C. to 4250 B.C.) with Pinto Points in the first half of the phase and continuing into the later half with Northern Side-notched points.

Castle Valley Phase (4250 B.C. to 2550 B.C.) with Hawken Side-notched, Sudden Side-notched and Rocker Base Side-notched points.

Green River Phase (2550 B.C. to 1350 B.C.) with Gypsum points

Dirty Devil Phase (1350 B.C. to 450 A.D.) with Gypsum points and possibly corn.

Plains Archaic: Evidence of Archaic peoples occupying the territory north of the area under discussion comes from Deluge Shelter in Dinosaur National Monument (Leach, 1967). At the lowest levels Leach tentatively identified Scottsbluff and Dalton points. The next level up, Level 12, produced bison remains and McKean points similar to those described by Mulloy as "lower level." Breternitz reports on carbon-14 dates for this level, but feels they are in error and that the level should date before 2000 B.C. (Breternitz, 1967, p. 2). Above this level were corner-notched points that Leach compares with similar types from Danger Cave but look to this author like some of the Uncompahgre types from the Taylor site (Wormington and Lister, 1956, pp. 48-49). The next level, Level 10, contains a few corner-notched points and many "stemmed-notched" types. Level 9 contains a corner-notched point identified by Leach as an "upper level McKean type" (Leach, 1967, p. 94). Level 8 contains unnotched and side-notched points similar to Desert Culture types. Level 7 relates to the Great Basin with corner-notched points, as does Level 6 with its stemmed-notched points. Leach does recognize some Uncompahgre influence at Level 6, but does not elaborate. Level 5 has Great Basin point types, and metates and manos. All material above Level 5 is Fremont in tradition.

Leach seems unduly impressed by the point sequence from Danger Cave, and pays little attention to the Uncompahgre material. He was somewhat inhibited by losing some of the artifacts at the dig site through flood, but it would appear to the writer that many of the types he illustrates could as well be grouped with Uncompahgre material as with Danger Cave. Differences in material used to make the points can account for some of the differences in appearances and only a study of the points themselves can give the details. The material used for points in the Northern Colorado Plateau is mostly quartz, while Great Basin material is mostly obsidian.

Thorn Cave, near Jensen, Utah, in the same general area as Deluge Shelter, gives evidence of a similar Archaic mixture as at Deluge Shelter. Day summarizes his evidence by saying that the collection has little in the way of diagnostics but the general flavor is Desert Archaic with overtones from the High Plains Middle Horizon cultures and some similarities to the Uncompahgre complex (Day, 1964, p. 58). He identifies one point as conforming to the description of Hannah points.

Day found evidence of usage of jack rabbit, cottontail rabbit, beaver (one bone), mule deer (223 bones), antelope (three bones), bighorn sheep (6 bones, and top level only), diagonal twilled basketry, baked clay objects, one-face quartzite cobble manos, two-face oval manos, slab metates, stone discs, bone flaking tools, bone tubes, bone pendants, bone un-eyed needles, L-shaped bone awls, scapula seed headers, choppers,

scrapers, blades, and worked flakes (Day, 1964). The second level from the bottom carbon-14 dated 2280 B.C., and the seventh level from the bottom dated 2200 B.C. There were two more levels above the one dating 2220 B.C.

At Hells Midden in Dinosaur National Monument, Lister (1951) found three stages of hunter/gatherers dating before 400 A.D. with an estimated beginning date of about 1500 B.C. His Upper hunting-gathering stage had small triangular stemmed points; small triangular blanks; corner-notched; rounded based points; corner-notched, straight-based points; side-notched, straight-based points; stemmed, indented-based points; stemmed, round-based points; expanding-stem indented-based points; bifacial knives; choppers; bifacial scrapers; one-hand manos; expanded-base drills; core drills; bone awls; and bone pendants. The Middle hunting-gathering stage had expanding-stem, indented-base points; corner-notched, thin based points; bifacial knives; circular scrapers; saws; one-handed manos; expanded-base drills; bone awls; notched bone; and bone pendants. The Lower hunting-gathering stage had corner-notched, thin based points; bifacial knives; circular scrapers; expanded-base drills; and a stone ball.

Local Archaic: The Uncompahgre Complex was identified by Wormington and Lister (1956) from stratified sites excavated along the east and west flank of the Uncompahgre Plateau in West Central Colorado not too far south and west of Grand Junction, Colorado. They admit that only the Uncompahgre scrapers, the adze-like forms, and the large polished and partially polished objects from the Taylor site are different from Southwestern and Great Basin artifacts of the Archaic stage. They describe a non-agricultural complex with the following traits: grooved and pecked petroglyphs with anthropomorph, zoomorphs, and bear paws; hearths, with some containing fire-burned stone; slab-lined cists; slightly polished ovoid core bifaces; polished stone ornaments; un-notched points; triangular or leaf-shaped points; large and small corner-notched points; triangular serrated points; straight-stemmed barbed points; rounded-base points; pointed tang, side notched, with both concave and notched-base points; thin, flaked on both sides, knives; expanded-base drills; straight shafted drills; side-notched drills; Uncompahgre scrapers; adze-shaped scrapers; serrated scrapers; end scrapers; choppers; hammerstones; flake gravers; shaft smoothers; flat slab metates; one-hand manos; splinter bone awls; grooved needle; blunt bone tools; tubular bone beads; sheep horn wrenches; single rod and bundle, non-interlocking stitch, coil basketry; grooved wooden shafts; and a rabbit fur strip. The diagnostic Uncompahgre scraper runs from triangular to rectanguloid in shape and is chipped on the two edges that form a triangular point while the base has only primary chipping. One secondary-flaked edge is worked on both faces and the butt end appears to be part of the original striking platforms that produced the flake utilized to make the scraper. The diagnostic adze-like scrapers are

from 2½ to 3½ inches long, diamond shape in cross section, with thick butts and flat faces. From the butt they taper to a thin edge at the bottom which is flaked on one side only. They appear to be designed to be hand held.

Wormington and Lister (1956) assign the Uncompahgre Complex to the generalized Desert Culture, stating that it is one of many local variations. The authors report that only the top layers in all four sites used to describe the complex may be the Uncompahgre Complex, as the deeper layers in the Taylor site have some different points than the others.

Dating of the Uncompahgre Complex is not too firm, but from geological studies by Charles B. Hunt at the sites it would appear that the Uncompahgre Complex dates from the time of Christ to as early as 2000 B.C. (Hunt, 1956a).

Buckles (1971) has redefined the Uncompahgre Complex based on his survey and excavation in the east-central portion of the Uncompahgre Plateau near Delta, Colorado. His complex covers a series of phases and assemblages beginning with a Paleo-Indian assemblage at 8000-3000 B.C.; running through a series of Archaic stage cultures and ending with two Proto-Historic (probably Ute) phases dating 1300-1500 A.D. and 1500-1880 A.D. There are many similarities in point forms with other Archaic material in the Northern Colorado Plateau region but it is beyond the scope of this paper to ferret them all out.

In her survey of the LaSal Mountain area Alice Hint labeled many sites as "Fremont (?)," which she described as a pre-Fremont culture engaged in hunting and gathering and having, as diagnostic tools, large corner-notched points. She originally thought that these peoples were related to the Fremont proper and were living in the area at the same time as the Fremont (Hunt, 1953, p. 20). She reports that fully a third of the sites she found were from the "Fremont (?)" and that the diagnostic points were found in campsites at all elevations, but these diagnostic points never occurred in Fremont dwelling sites. In a later paper she equates her "Fremont (?)" with the Uncompahgre Complex and states that in the LaSal Mountain area these sites are characterized by abundant flat or slightly basin-shaped metates; one-hand manos; large and medium sized corner-notched points with expanding stems; knives; drills; a lack of large scraper planes; and a scarcity of scrapers with steeply chipped working edges (Hunt and Tanner, 1960, p. 114).

Hunt and Tanner (1960) report some 100 sites in the area under discussion as belonging to the Uncompahgre Complex. Other surveyors did not indicate specific Archaic complexes, or did not recognize them because most of the other sites inventoried in the area are simply designated as Archaic. Undoubtedly some of the general Archaic sites may be Uncompahgre sites, but only restudy of the survey material, a task far beyond the realm of this paper, could determine this.

Little is known of the lifestyle of the Uncompahgre Complex peoples in the LaSal Mountain area. The site dispersal from low altitude to high and the tool assemblage would indicate that some sort of transhumance

based on hunting and gathering was practiced. One site (42Sa104) in the mountains has a dozen or so unexplained mounds, two to four feet high, spread over several acres. There are indications of the age of this complex at 42Sa192 where a hearth and stonework in a rock shelter on an alluvium surface were recorded under a geologically dated sand dune.

Hunt describes two other complexes in the LaSal Mountain area that are of Archaic age. The Moab Complex has been discussed under the Folsom Complex in this document. The complex, as reported by Hunt and Tanner (1960) from surface materials found by Dallas Tanner, contains both Folsom points and one of the Pinto point types in the lithic assemblage. Schroedl feels that this complex must be discounted because no excavated Folsom sites have ever produced Pinto points and Elko type (Schroedl, 1977b, p. 6). Schroedl ignores the similar surface mixture identified as the Concho Complex (Wendorf and Thomas, 1951), and the writer sees no Elko types illustrated in the Moab Complex assemblage (Hunt and Tanner, 1960, Fig. 3). Further, there never have been any Folsom sites excavated in the Northern Colorado Plateau, to the author's knowledge. So, one cannot discount this complex until further actual field work is done. The complex may well represent late Folsom peoples hunting the bison of the region, particularly in the broad flat area along the base of the Book Cliffs, mixing with foragers using Archaic Pinto points who had come into the region either from the south or the west.

At Hogup Cave Aikens dated the levels with Pinto points at 6400 B.C.-1250 B.C., with no apparent time difference between Pinto point types (Aikens, 1970, p. 188).

There are other sites in the area under discussion that either appear to have or have been designated as having Archaic affinities. Most of these are campsites or lithic scatters, sometimes combined with slab-lined hearths or ashy areas. They are, for the most part, out in the open, either in the pinyon-juniper areas where there are wind-blown sand deposits or (a few) in the canyon bottoms. It should be noted that very few Archaic sites have been reported in recent surveys. This is due to the lack of diagnostic Archaic point types, which have been removed by heavy non-scientific collecting over the last 25 years. Hunt apparently got to the sites before the heavy relic collecting began with the influx of peoples during the Uranium boom of the mid-1950's. This was also true with the inventory survey of the Arches National Monument (now Park) in the late 1950's (Berry, 1975). In most cases these archaic (and later) campsites were only surface sites with no depth to them at all. Once the diagnostic points were picked up, little was left with which to judge time or culture.

There are other sites in the area and region that appear to be Archaic. The geologist, Richmond, encountered buried hearths, some of them slab-lined, in arroyo walls in the Spanish Valley and Castle Valley drainages. One of these contained a point identified by Alice Hunt as being similar to points of "pre-pottery" age she found at the surface of deposits no

younger than the lower member of the Gold Basin formation (Richmond, 1962, p. 80). The surface of these deposits dates at about 50 to 520 A.D. (see Table IV, Section 3.1). A radio-carbon date from charcoal from the hearth gave a date of 900 B.C. (Rubin and Suess, 1955, p. 484).

A split-twig figurine was found in a rock shelter in the Seven-Mile area (Pierson and Anderson, 1975) just north of the area under discussion and others have reportedly been found at the mouth of East Coyote Creek southeast of LaSal (Ray Anderson, personal communication). Fragments of another were excavated from a cave in Mill Creek (43Gr239), along with a surface Gypsum-like point, a corn cob, bone awl, core hammerstone, one-hand mano, slab metate, yucca Z twist cordage, and leather (Pendergast, 1961b). These figurines have most generally been assigned to the Archaic level in time, but the culture is not certain (Fowler, 1973). They carbon-14 date at about 2145 B.C. to 1150 B.C. (Fowler, 1973), but recently some have been found at Cowboy Cave in a context that suggests that they lasted into early agricultural times, possibly as late as 450 A.D. (Schroedl, 1977a).

One lithic scatter with a Pinto point was found by Lipe in the Dark Canyon Plateau area on Dry Mesa (Site DSC-10 in Lipe's survey).

Lindsay, in his summary of Grand County archaeology (Lindsay, 1976), dismisses most of the reported Archaic sites by accepting as Archaic only those sites with Gypsum, Pinto, or Elko series points. He bases this on the fact that corner-notched points, particularly definitive of the Uncompahgre Complex, occur in both Archaic and Fremont contexts. This is true, except that most of the Archaic corner-notched points are larger and, although the smaller ones do occur in the Archaic, they occur most frequently in later contexts. Most Fremont points are small, and some of them so small that Hunt (1953, p. 20) refers to some of them as "miniature" points. The similarity in point shape is good argument for Fremont evolving out of the Uncompahgre Complex in the Northern Colorado Plateau region.

Lindsay (1976) also indicates that the Uncompahgre Complex has, as one of its traits, the use of the bow and arrow. Although Wormington and Lister (1956, p. 78) discuss this possibility, they arrive at no definite conclusion; their Uncompahgre Complex trait list does not include bow and arrow, and nothing beyond small points was found to bolster this conclusion.

To briefly summarize, the Archaic period was one of hunting-gathering peoples slowly developing and diverging into the basic cultures of the West. The introduction of agriculture, the bow and arrow, and pottery, as the period ended, radically changed the economy but not too many of the basic lifeways, judging from the material traits that the archaeologist encounters. These new traits also provide much grist for the taxonomic mill of the archaeologists. Only more excavation of stratified sites in the area under discussion can provide clues as to the actual sequences of events and cultures involved.

Cultural impacts on the local Archaic came from the Plains area, affecting Archaic peoples using Pinto points, a trait which could have its roots either to the west in the Great Basin or southward in the Southwestern tradition. Other impacts continued to shape the regional Archaic, as Great Basin point types are found west of the Colorado River. Locally these Great Basin impacts seem to have had little effect because Pinto point users and later Gypsum point users seem to have dominated. At the same time, or perhaps replacing the late Pinto and Gypsum point users, there developed a local marginal Desert Culture Archaic Complex called the Uncompahgre, which had some relationship with the Plains Archaic of the Uinta Basin and with the northern Southwestern Archaic tradition.

There is some evidence that the Uncompahgre Complex may have developed into or affected both the Fremont and Basketmaker cultures of the northern Colorado Plateau region.

FORMATIVE STAGE

General: In the northern Colorado Plateau there are two farming cultures present, the Anasazi and the Fremont. In one respect they can be considered in the earliest periods as Archaic stage cultures with the addition of maize agriculture, masonry construction, and the bow and arrow, with pottery added somewhat later. At first the Fremont was considered to be a local northern variant of the Anasazi with a time and culture lag. The farming culture of the northern Colorado Plateau was classified at Basketmaker III and Pueblo I levels while to the south the Mesa Verde Anasazi were at Pueblo II and Pueblo III levels. The Fremont variant in the area has been termed San Rafael. Mesa Verde and Kayenta Anasazi trade pottery is quite commonly found in San Rafael Fremont sites (Marwitt, 1970).

Prior to the 1960's when a concerted effort was undertaken by the University of Utah to gain a better understanding of the Fremont, most of the masonry structure sites and other sites with Anasazi pottery on them in the Spanish Valley, Castle Valley, and the LaSal Mountain areas were considered to be Fremont. Rudy reports an "interfingering" of the San Juan Anasazi and the Fremont in the Beef Basin-Salt Creek-Horse Canyon area with the Fremont or a closely related group occupying the narrow canyons and the Anasazi living in the broad park or basin areas (Rudy, 1955, p. 3). The author reached a similar conclusion after a reconnaissance of the same area based on house types and pictographs (Pierson, 1962). (Hunt designates the farming/masonry structure/ceramic complex she found in the LaSal Mountain area as Fremont, reporting that most of the pottery resembled Anasazi types but that it was made of local materials and was probably indigenous to the area (Hunt, 1953, p. 15). Wormington, in her early analysis of the Fremont, apparently accepts Hunt's assignment of her sites to the Fremont (Wormington, 1955, p. 147)

With the recent works (Marwitt, 1970; Aikens, 1966; Gunnerson, 1969; Madsen and Berry, 1975) of the University of Utah a better, albeit still confused, picture of the Fremont is being developed. The recent discussions all seem to accept Fremont as a separate entity apart from the

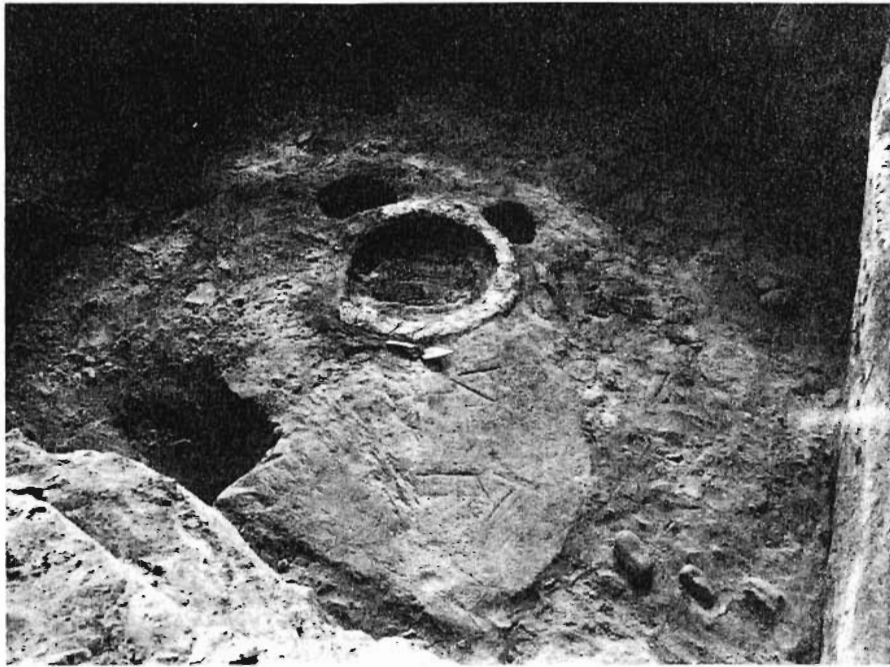


Figure 9. Floor of Pueblo II/III pithouse on State Highway 279 south of Moab, Utah excavated by Points and Pebbles.

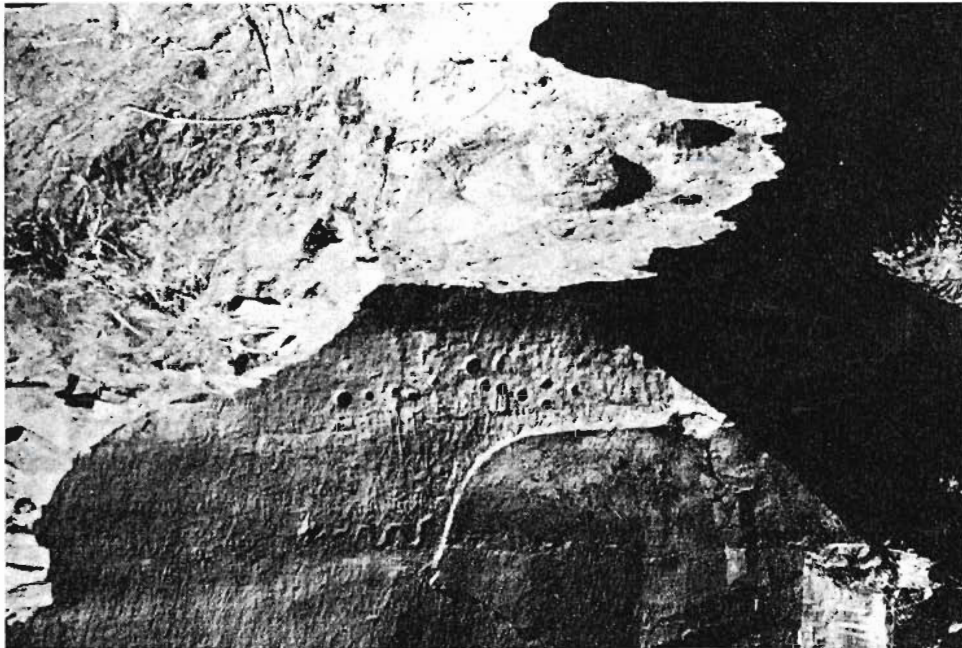


Figure 10. General view of pithouse on State Highway 279.

Anasazi, but can arrive at no positive conclusion as to good definitions of regional Fremont cultures or as to cultural origins, sequels, or relationships. Other recent works have viewed the local farming/masonry structure/pottery complexes in the Canyonlands area as being totally Mesa Verde Anasazi (Sharrock, 1966; Lindsay, 1976; Berry, 1975; Lucius, 1976).

For purposes of discussion we shall accept the designation of the farming/masonry structure/pottery complexes in the area under discussion as being basically Anasazi, but in order to emphasize areal differences we shall discuss them under the terminology of the Abajo Mountain Anasazi and the LaSal Mountain Anasazi. The Fremont occupation of the area will be discussed separately.

Basketmaker I	- - - - -	Pre-A.D. 1
Basketmaker II	- - - - -	A.D. 1 - 500
Basketmaker III	- - - - -	A.D. 450-750
Pueblo I (where encountered)	- - -	A.D. 750-900
Pueblo II	- - - - -	A.D. 850-1100
Pueblo III	- - - - -	A.D. 1100-1300
Pueblo IV	- - - - -	A.D. 1300-1700
Pueblo V	- - - - -	A.D. 1700 to present

Table 6

Anasazi Stages, Southeastern Utah
(From Jennings, 1966a, p. 33)

Jenning's tabulation of Anasazi stages and dates (Table 6) indicates some of the problems in dealing with the Anasazi; it isn't as cut and dried as most summations would indicate. The same can be said for the descriptions of the various stages; they vary with the type of site and the region or area in which they are found. Needless to say, these regional and areal variations are partially cultural and partially based on the need and environment. We shall discuss the Anasazi within the context of the area which has been designated as the study area and try to avoid complicating the story by bringing in too many outside complimentary styles.

Abajo Mountains Anasazi: In the canyons emanating from the Abajo Mountains and on many of the plateaus and basins between these canyons one finds the remains of an Anasazi group who lived there from at least Basketmaker II times through early Pueblo III times. These people were

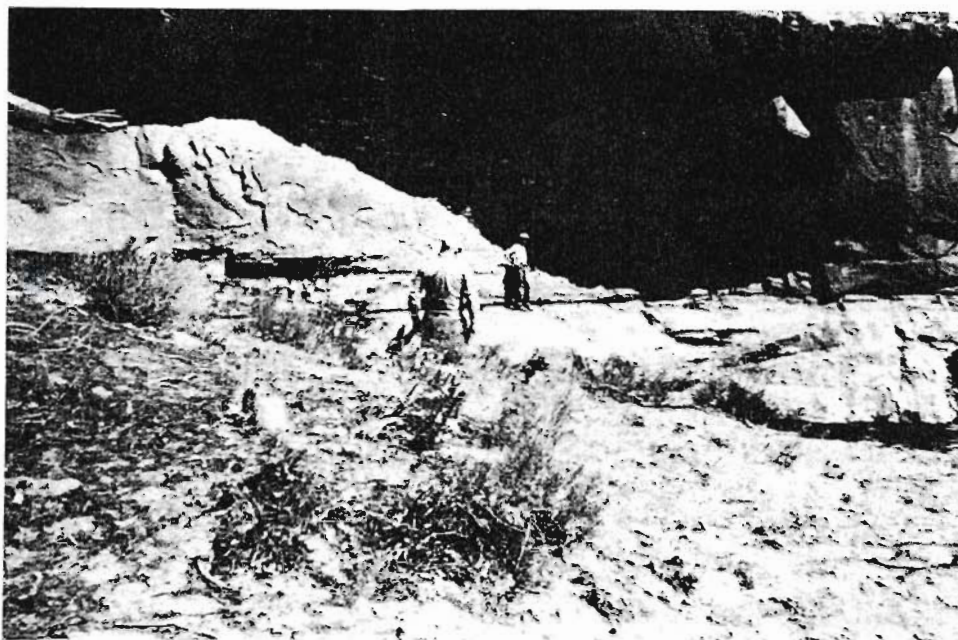


Figure 11. Abajo Mountains Anasazi Pueblo II/III cliff dwelling, located in Beef Basin.



Figure 12. Large Pueblo II/III ruin in Ruin Park.

related to the general San Juan Anasazi that covers the San Juan drainage of Southwestern Colorado--the Four Corners area. More specifically, they have been assigned to the Mesa Verde Branch of the San Juan Anasazi because of the pottery types they used and other features. The Mesa Verde Branch extends from the Mesa Verde area proper, west to the Colorado River, and northward to encompass most of the area under discussion. It should be noted that the so-called heartland of the Mesa Verde is not the Mesa Verde itself; the sites there represent a local population and probably not the most typical situation under which the Mesa Verde culture is found. More typical are the sites along the northern drainages to the San Juan River in Southeastern Utah.

In the study area there are Anasazi population concentrations in Horse Flats, Dark Canyon Plateau, Fable Valley, Beef Basin, Ruin Park, Salt Creek Canyon, and North Cottonwood Canyon. There are also population concentrations on the Manti-LaSal National Forest in Hammond and South Cottonwood Canyons, Milk Ranch Point, and other areas.

Horse Flats were surveyed for archaeological sites in 1969 so as to set up an avoidance plan for a pinyon-juniper chaining project. Carl Mahon and the author did the survey for the BLM, and found some 18 sites (Ar-43-06-623 through Ar-43-06-640) which I classified as Pueblo I through Pueblo III. There were two pithouse sites, one of which was classified as Pueblo I - II (Ar-43-06-629), the other (Ar-43-06-628) was not classified. One campsite with ceramics was classified as Pueblo II - III (?), (Ar-43-06-631). The rest were small masonry pueblos dating from Pueblo II (Ar-43-06-623, 624, and 638) or Pueblo II - III times.

This is somewhat typical for the pinyon-juniper flats in Southeastern Utah inasmuch as the earlier Basketmaker sites, if they are present, are either not easily seen or have been covered by later developments so that they are not often reported. This gives a somewhat warped picture of settlement patterns and is one of the hazards of putting too much faith in survey data. Judging from excavations further south (Lipe, 1970) one should find the earlier sites extant over most of the region.

The Museum of Northern Arizona, with William D. Lipe in charge, surveyed the Dark Canyon Plateau in 1967. This was not a detailed survey, apparently, and the area had, at least in part, been chained during the 1950's. Lipe (1967) reports some 38 sites recorded on the plateau proper and 3 on Wild Cow Point, a northerly extension of Dark Canyon Plateau on the northern side of Fable Valley.

Seventeen of the sites were classified Pueblo III, two Pueblo I, and three Pueblo II/III, and nine were unassigned pueblos. Most of the sites were open pueblos, some with kivas. Three rock shelters were noted with masonry structures, one of these was called a granary. One lithic scatter with ceramics was noted. One tower kiva was found. One of the Pueblo II sites is a small pithouse village. Most of the Pueblo villages are located on the edge of sage flats, on sandy ridges, and other types of ridges. Descriptions of the pueblos reveal no particular patterns of village shape, masonry styles, or types of villages.

Fable Valley has the dubious distinction of having been surveyed and reported upon by more people than any other section of the area under discussion. Baldwin in 1945 (1948), Thompson (1958), Lipe in his 1967 survey, the Carnegie Museum expedition in 1945-47 (Sharrock and Keene, 1962), and possibly Dean Cummings in some of his early expeditions to Southeastern Utah, visited Fable Valley. Locations of these sites are vague because there were no good maps when the surveys were done.

The valley was probably one of the most heavily populated areas on the west side of the Abajo Mountains, if we are to judge by the number of sites and the concentration of them. Most of the sites are small, many of them classified as granaries, but there is an occasional large pueblo like 42Sa432 which is recorded as having 100 rooms. This large ruin has a circular depression in the center some 50 to 60 feet across which may indicate a great kiva. Other smaller kivas were noted in association with sites in the canyon. Several smaller structures were located high in the face of the canyon walls. Most of the dated structures are dated from pottery, and indicate usage during the Pueblo II and Pueblo III periods. Occasional references to possible pithouses are about the only indications of some occupation during earlier periods.

The valley still has water in it, although presently an arroyo runs through it. Several springs are also available as water sources. The lower end of the canyon narrows and becomes steep. All evidence points to a farming community in Fable Valley most likely living in the large pueblo, at least toward the end of the occupation, but using the smaller villages, house units, and storage chambers for outlying farming activities. There is some indication of a stress situation, as 42Sa430 had loopholes in the front wall of the cliff ruin. The height at which some of the granaries were placed and the attempts at camouflage tend to support this theory.

The relationship between the canyon communities and the settlements on the flats above the canyons is not clear. The villages in the flats appear to be the same kind of villages and structures as in the canyons at the same time period. Except for the lack of indication of stress they have about the same settlement pattern, except, of course, for fewer "cliff houses" than the canyon settlements. The plateau settlements used the cliffs and caves in the buttes and ledges that rise above the plateau areas.

There seem to be few structures reported above 8000 feet. Undoubtedly this is because farming is unreliable above this elevation and these areas were most likely used for hunting and gathering activities year round, although there is no positive evidence of this.

The pattern described for Dark Canyon Plateau and Fable Valley is typical for most of Beef Basin, Ruin Park, Salt Creek, and North Cottonwood Canyon. Horse Canyon, Davis Canyon, and Lavender Canyon seem to have been too narrow for anything except small structures built in the cliffs and canyon walls or the use of rock shelters. Perhaps Davis, Lavender,

and Horse Canyons served as farm areas for communities in the upper reaches of North Cottonwood Canyon and Salt Creek where there are surface villages and alcove (ledge) villages of Pueblo II-III age, although none of them are very large. Some of these villages in the Big Pocket in Upper Salt Creek consist of up to 34 "structures" (Sharrock, 1966, p. 66) which include granaries.

The villages in Beef Basin/Ruin Park could have used these canyons too. Rudy (1955) excavated nine sites in Beef Basin ranging in size from one room to a twenty-five room affair called High House. All were typical Mesa Verde surface pueblos with circular kivas and ceramics, including Mancos Black on White, early Mesa Verde Black on White, and corrugated wares. Also found were some intrusive wares identified as Flagstaff Black on White, Tusayan Black on Red, Tsegi Orange, Tusayan Polychrome, Tsegi Black on Orange, and a fine tempered buff ware.

Kivas varied somewhat from typical Mesa Verde recess types to those without recesses, and not all sites had kivas. One site, L-House, had two plazas outlined with walls. Masonry in the villages varied in quality and was described as being made of roughly shaped sandstone blocks and tabular slabs which were mud mortared into one-rock-thick walls in a crude coursing.

One pit house was found at Ridge Site, but apparently it was occupied at the same time as the surface structure with which it was associated and does not represent an earlier occupation period.

Rudy assigns the sites to the Pueblo II-Pueblo III time period. This is somewhat supported by the tree-ring dates (Bannister, 1964), dating 42Sa207 (L-House) at 1233 A.D., 42Sa45 (Ridge Site) at 1213, 1214, and 1232 A.D., and 42Sa227 (Ledge Site), an unexcavated site in Horse Canyon, at 1223+ A.D. Only 42Sa207 had a bark date. This does not quite fit Sharrock's assignment of an age of 1075-1150 A.D. for the Pueblo II-Pueblo III occupation of the general area and Salt Creek in particular (Sharrock, 1966, p. 71). He does qualify this by admitting abandonment sometime about 1200-1250 A.D., but building dates and abandonment are somewhat at odds.

Davis (1975, p. 90) dates his late Pueblo II-early Pueblo III sites in North Cottonwood Canyon at 1050-1200 A.D. from a study of the ceramics. The ceramics found by Davis are mostly Mesa Verde Black on White and Mancos Black on White. Sharrock reports Mesa Verde Black on White and McElmo Black on White. They are all classified as in the Pueblo II-Pueblo III period and date (Breternitz, Rohn, and Morris, 1974) 900-1150 A.D. for Mancos Black on White, 1075-1275 A.D. for McElmo Black on White, and 1200-1300 A.D. for Mesa Verde Black on White. However, there seems to be a difference of opinion on classification of the types and the further away one gets from the Mesa Verde the less like the type descriptions the pottery becomes. The pottery dates and tree ring dates would seem to indicate that Sharrock's dating is a little early for primary occupation.

In a recent one per cent sample inventory of the Beef Basin Planning Unit of the BLM, an area which takes in much of the Abajo Mountain Anasazi community, Thompson (1978) identified sites from Basketmaker II age through Pueblo III. The earliest sites, Basketmaker II through Basketmaker III, are found mostly out of the canyon areas, and few of them were found. Pueblo II, Pueblo II-Pueblo III, and Pueblo III sites were found in all situations, but with fewer in the canyon areas. Site density is reported as 32 per square mile. Pueblo I sites were not reported. Pueblo I sites do occur in quantity on Milk Ranch Point (De Bloois, 1975) not far from the Beef Basin Planning Unit, and they also occur in some areas to the south, but apparently the Pueblo I population needs were either specific or they tended to cling together in large communities and excluded some areas.

The Pueblo I classification is still somewhat troublesome, as our control of time in this area is not accurate enough to indicate whether Pueblo I may have been localized development or an actual state that all Pueblos went through in their evolution. If Pueblo I tended to be a localized development of progressives where they were experimenting with surface masonry structures while their less advanced and more conservative neighbors were still at a Basketmaker III stage, then it is highly possible that a rapid advance began at the beginning of Pueblo II times with many Basketmaker III peoples going directly to a Pueblo II stage, bypassing Pueblo I. Parallels among the present-day Pueblos, particularly the Hopi, tend to substantiate this. There are many indications of a rapid expansion in Pueblo II times, and this may be one reason why it appears to be such a rapid one from the mostly surface evidence we have.

Salt Creek and Horse Canyon are noted for their pictographs. Some of these are so-called Fremont types: figures with shields, horned anthropomorphs, and triangular anthropomorphs. There are other pictographs of multi-colored painted humans, perhaps with masks, about four feet tall, that seem to be indigenous to Salt Creek and Horse Canyon. Sharrock (1966) for some reason does not mention them in his description, unless they are the ones referred to as ghost figures, but Schaafsma (1971, Fig. 52, and Plate 27) has a good description and illustrates two panels. There are several other panels with up to thirteen figures in them, all with the same basic slit eyes and a mask-like facial appearance. Some in Horse Canyon have completely red faces, others in Salt Creek seem to be wearing hats, ear bobs, necklaces or chin tattooing, and carrying boxes of some sort. The group known as Thirteen Faces have white skirts and painted torsos (Krutch, 1971). They probably represent some local cult possibly brought about as the result of contact with their Fremont neighbors to the north and northwest.

Evidences of the subsistence pattern are found in the many one-handed and two-handed manos; flat, basin, and trough metates; digging and planting sticks; corn cobs; and corn listed as yellow, red, white, and blue flints and flour corn, with little dent; pumpkin (*C. pepo*); agave; turkey; mountain sheep; deer; and one cotton boll from 42Sa1374 (Paul

Bunyon's Potty) in Horse Canyon; which have been reported by Sharrock (1966), Rudy (1955), Davis (1975), or seen by the author. Tools such as cores; hammerstones; choppers; knives; scrapers; adzes; drills; needles (?); side and corner-notched and triangular projectile points; bone awls and flakers; saw; mauls; mortars; sherd spindle whorls; and fire drills and hearths; and woven materials such as turkey feather cordage; cotton cordage; reed matting; single split-rod foundation, coiled basketry and open, intricate stitch basketry give indication of past technologies and life styles of these people. In addition, a few of the finer things such as clay beads and a gray siltstone pendant give some indication of the styles in personal adornment. If the pictographs described above are self-portraits, then the inhabitants of the canyons were ornately decked out at times, with ear ornaments or necklaces, bobbed hair, painted or tattooed faces and bodies, and white skirts.

In summary, the picture that evolves of the inhabitants of the Abajo Mountain area is of an early population of hunting-gathering types that either had lived in or about the area for some time or had moved into it periodically to use it. The population appears to have been sparse until Basketmaker times, when a small resident population began to grow crops of corn in the area. During the Pueblo II period, probably in the late 11th century, a population explosion occurred when many villages and farm areas were developed, probably as the result of rainfall patterns that provided good streams and springs and a steady deposition of fertile soils (see Table 4). There may have been movements out of other less favored areas to the south, increases of population from linguistically-related Archaic Stage nomadic peoples occupying the same region, and natural increases in population due, in part, to a better, more varied, and more abundant diet.

The Pueblo pattern of small and medium sized masonry villages with religious centers in the form of circular below-ground kivas, and outlying farm and storage facilities was well established by Pueblo II times in the Abajo Mountain area. It was based on the earlier Basketmaker mode of life which involved experimentation with agriculture and perhaps religion, and a continued heavy use of all available plants and animals from all eco-zones.

Whether the population duplicated the peoples to the south is unknown, for burials are as yet unstudied. We may surmise, at present, that they were much the same, i.e., during Basketmaker times, a long and undeformed headed, medium height group of people, somewhat stocky in build and running to fat on occasion. During Pueblo times there may have been a change to an occipitally deformed head as the result of a change to a hard cradle board. The prehistoric inhabitants may have spoken one of the Shoshonean languages as some of their descendants, the Hopi, did, and as later peoples living in the area, the Utes and Paiutes, did also. This is not to say that they were all material culturally or even genetically related, but it appears that traditionally the land has been used by peoples speaking one or more variants of the Shoshonean language family. Some of the languages may even have died out.

In dress and appearance we have only bits and pieces to go on, but evidently they used such things as turkey feather and rabbit fur blankets for winter dress, with sandals woven of yucca and at times padded with corn husks or other materials. In summer, a simple skirt of cotton or vegetable material probably sufficed for the women, with the men wearing a cotton gee-string or nothing. Body and face painting undoubtedly were practiced as part of the religious or narcissist complex. Beads, pendants, feathers, and other adornment were also used by both sexes (Wormington, 1947; Jennings, 1966a).

Agriculture was practiced in a dry-land type of farming in small family plots, growing corn, squash, cotton, and perhaps beans. There is no indication of irrigation in the immediate Abajo Mountain area complex, but elsewhere in the Glen Canyon there is indication that storage facilities, terracing, dams for flood plain and small canal irrigation were known and used on a small scale (Jennings, 1966a). However, most of the agriculture was practiced in naturally fertile and watered areas, either in small flat drainages on the plateaus or in sandy areas along the streams; in either case where the maximum benefit of the runoff and subsurface water flow could be made.

There is some indication that an arroyo cutting cycle in the middle 1200's as the result of a change to summer rainfall may have caused the evacuation of the area (see Table 4). The arroyo cutting would have ruined most of the farmland, even though in a few places apparently some of the late Pueblo III population hung on. If this population had headed south and east looking for greener pastures, it might have caused some of the trauma evident in the Hovenweep country with its many stone towers in the 1200's and the Mesa Verde proper with its semi-fortified cliff dwellings of the same period.

Tools and utensils found in the area were typical of much of the Southwest. Pottery was black on white decorated wares in the form of bowls, dip-pers, and large ollas, or gray corrugated wares in the form of large ollas which seemed to have been used mostly for cooking and storage, while the black on white wares were used for eating and storage of smaller items. The wares were typical of those called Mesa Verde. Basketry was also used, being of the coiled and twined varieties for the most part. The bow and arrow was used after Basketmaker III times, along with a host of stone chipped and ground tools, among which the manos and metates and small corner-notched points are most common and diagnostic of the culture.

All in all, the impression one gets is of a small population of farmers busily engaged in farming, gathering, building and leaving all sorts of masonry buildings over a period of time as they made their living from the land. The dry climate and situations in which they left their remains enhances their visibility, but there really were not many of them; Sharrock says only 276 people occupied Horse and Salt Creek Canyons at any one time (Sharrock, 1966, p. 66). They seem to have had little

contact with any but their own kind to the south, as only a few Fremont sherds and one Fremont style metate plus some pictographs in the Fremont tradition (?) have been recorded in the area (Sharrock, 1966; Davis, 1975).

LaSal Mountain Anasazi: As one moves northward to the area around the LaSal Mountains massif, the prehistoric Anasazi occupation becomes very sparse. Only in the Paradox Valley to the east of the LaSals is there anything that resembles the occupation in the vicinity of the Abajo Mountains. The rest of the evidence for Anasazi occupation (primarily pottery) is found in rockshelters and campsites in the Arches National Park area (Berry, 1975); west of Moab (Pierson, 1977); in Mill Creek, Castle Valley, Fisher Valley, Spanish Valley and on the mesas around the LaSal Mountains as campsites (Hunt, 1953).

It should be noted here that Hunt's early and late Fremont are considered to be the local LaSal Mountain variety of Anasazi and have been so classified by most of the recent reports on the area. There are some doubts, however, as to what really occurred in the LaSal Mountain area with regard to the local population at that period, and Hunt has a point of view that cannot be totally ignored even at this late date. Hopefully, a better understanding will come out in the following discussion.

The Anasazi population of the West Paradox Valley has been reported by the Woodburys (1932) and Kasper (1977). The Woodburys found some sixteen rectangular-roomed masonry walled buildings atop small mounds with Pueblo I and Pueblo II pottery in them. Leach corroborates this and, further, apparently found Basketmaker III pithouses under one of the pueblos (Kasper, 1977, p. 2). The Woodburys (1932, pp 17-18) also describes a large pueblo ruin near Norwood, Colorado, some twenty miles southeast of the Paradox Valley.

The artifacts found by the Woodburys in excavating one of the Paradox Valley sites included incised bone gaming pieces; "bird points;" black on white and black on red pottery; unobliterated coil "black" pottery, bison, mountain sheep, cottontail rabbit, jack rabbit, pocket gopher, and gray wolf bones. Kasper reports that the Basketmaker III occupation was principally agrarian with little use of the fauna except for rabbit, but that the Pueblo I-Pueblo II phase used a great many animals. Bison represented 89 per cent of the estimated meat poundage, with rabbit being the major small animal eaten. In addition, she found evidence of deer, tassel-eared squirrel, bobcat, and either dog or coyote in the site.

Based on hunting emphasis, mound location, little pottery, and indeterminate corn quantities, Toll considers the West Paradox Valley sites and one structure excavated by Vondracek in Roc Creek Valley to be Fremont (Toll, 1977, pp. 157-158) He also examined the West Paradox material of

the Woodbury's and illustrates some of their material (Toll, 1977, p. 95 and pp. 243-256). The points are small, square-based, side-notched and corner-notched types similar to those illustrated by Hunt (1953, pp. 32-33) as occurring with pottery sites. Other tools described are drills, graters, hammerstones, stone beads, bone beads, bison rib beamer, burnisher (?), bone awls, bone gaming pieces, and a flaker.

Toll also found a number of "Archaic" sites in the Dolores River Canyon, and he does not rule out the possibility that there was use of the canyon by both horticultural and non-horticultural groups at the same time period (Toll, 1977, p. 158). Hunt has also suggested this for the area she surveyed (Hunt, 1953, p. 20). The structure on Roc Creek excavated by Vondracek gave a carbon-14 date of 905 ± 60 A.D. (Toll, 1977, p. 171). This site apparently had a sparse collection of corrugated and painted Anasazi wares, but little other information is available.

Schroeder has a complementary suggestion to Toll's use for the area, based upon the corn material from Tabeguache Cave. He suggests that Tabeguache Cave is Archaic in cultural pattern and represented a nomadic way of life with maize agriculture that survived until 800-900 A.D. At that time a Pueblo sedentary way of life with a new kind of maize was introduced and lasted until about 1150 A.D. when the area was abandoned to the Shoshoneans (read Numic or Proto-Ute) (Schroeder, 1964).

To the northwest of the LaSals are two valleys, Castle and Fisher, where Hunt (1953) found evidences of Anasazi usage. In Fisher Valley she reports masonry granaries, rock circles on ledges, and towers (42Gr183-188); the rock circle and watch tower having black on white sherd tempered pottery with them. Sherd tempering is probably Pueblo II in time (Hunt, 1953, p. 202). She also found campsites with Anasazi pottery and Fremont "miniature" points which are small (less than one inch) points with stems narrower than blades, or with slightly expanding stems and short tangs (Hunt, 1953, Fig. 10). Two ten-foot-diameter rock house foundations with black on white pottery (42Gr269) are also reported from Fisher Valley.

In Castle Valley 42Gr209 is a slab-foundation house with an oval shape, plain gray pottery with porphyry temper, and sand tempered gray corrugated pottery. Campsites in the valley produced gray corrugated pottery and black on white pottery of Pueblo II age. Dykman, surveying for Intersearch, reports one rockshelter with a few sherds of Basketmaker III-Pueblo I and Pueblo III present (42Gr702) (Thompson, 1978).

Mill Creek, in its two narrow well-watered canyon forks, has many rockshelters and sandy areas which were occupied in prehistoric times. Hunt lumps all of the sites she encountered there, but reports many petroglyphs, retaining walls, bell-shaped granaries in caves, corn cobs, and a few sherds of black on white pottery (Mancos Black on White?). Near the mouth of Mill Creek are two sites, 42Gr175 and 176, with walls. 42Gr175 has a retaining wall, and 42Gr176 has remains of six circular masonry structures and a granary with black on white pottery (Mancos Black on White?) and a sherd-tempered plain gray polished pottery (Hunt, 1953).

Spanish Valley has received much impact over the years as the population has grown, so that many of the sites located in the valley, and particularly those in the lower end, have all but disappeared or have been vandalized to the point that they have little information to offer at present. Hunt surveyed a few sites in the valley and down the Colorado River Canyon to the mouth of Kane Creek which, with some of the unreported excavations of the Moab Points and Pebbles Club in the late 1950's and early 1960's, give a fair idea of what took place. The writer was fortunate enough to direct the Points and Pebbles excavations, and most of the excavated material has remained in the Moab Museum to the present.

Only one site is reported for the upper end of the Spanish Valley (42Gr195), a fifteen foot diameter dwelling with plain gray and black on white pottery (Hunt, 1953). Several masonry structures are described from the lower end of the valley, some within the town of Moab, and at least one may be the same as one excavated by Points and Pebbles (42Gr-178).

42Gr178 is described by Hunt (1953) as dwellings on top of a hill with Mancos Black on White, red on orange (Abajo?), rock tempered corrugated, sherd tempered corrugated, porphry tempered plain gray, and sherd tempered plain gray pottery. Points and Pebbles salvaged, ahead of gravel pit operations, a crude coursed masonry, 9'4" diameter, circular structure at the point of the gravel hill just south of the mouth of Mill Creek. It contained the same general pottery sample as above, but the corrugated ware had clapboard or unaltered corrugations in a Pueblo I-Pueblo II style. Hunt describes both altered and unaltered corrugations, but does not indicate which is found where (Hunt, 1953, p. 170). The plain gray found there fits the description for Moccasin Gray (775-900 A.D.). There were also, in the fill, some heavy pieces of baked clay which were either burned chinking or a fine silty sand-tempered pottery with inclusions of vegetable material. The building has been burned and vandalized and no floor features were evident. In the fill and on the floor were black walnut shells, a bird bone, an unshaped long oval mano, three corner-notched expanding-stem points about one inch long, and a peach seed shell. The latter is probably modern, as might well be the black walnut shells.

✓ Hunt also describes several masonry granaries and some rock circles at the lower end of the Spanish Valley. 42Gr177 is on the south rim of the valley and consists of two rock circles of thin horizontally-laid rock slabs with no door associated with rock and sherd-tempered corrugated ware. Sherd-tempered black on white (Mancos Black on White?), and petroglyphs, including a humpbacked flute player and a pecked and painted red and white figure behind a shield. 42Gr190 has a pottery complex like 42Gr177, and is a hilltop dwelling. One granary, in a rockshelter, 42Gr196, was dated at 100 A.D. \pm 150 by carbon-14 methods (Hunt, 1953, p. 233). It was built of slab and horizontal masonry, and gray sand-tempered corrugated pottery was associated with it.

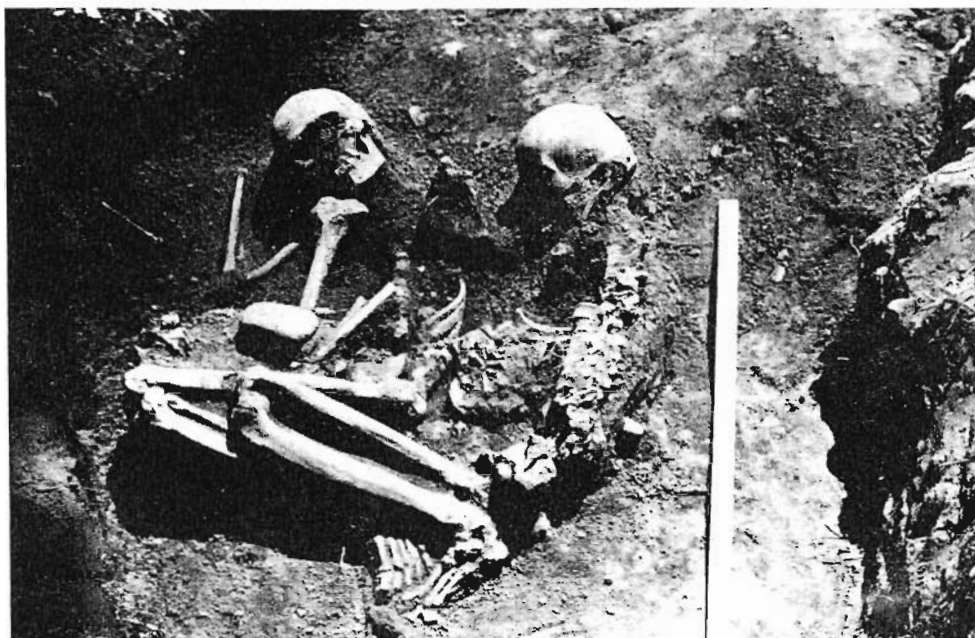


Figure 13. Flexed, undeformed Pueblo burials from the Polley/Secrest site, Moab, Utah.



Figure 14. Extended, face down Pueblo burial from the Polley/Secrest site.

Points and Pebbles, in 1961, excavated an interesting pithouse on the present highway, State Road 279, leading to Texas Gulf International's Potash mill. The pithouse was dug into the talus at the foot of a sheer sandstone cliff not far from the Colorado River's edge; so close, in fact, that road construction necessary to get past this narrow spot removed the house after excavation. The pithouse was circular, with an entry or ventilator shaft on the east side toward the river. It was masonry-lined, using the large boulders in the talus fill by incorporating them in the crude masonry wall.

In the approximate center of the floor of the pithouse was a circular, adobe rimmed fireplace, 25 inches in diameter, and four inches deep. At the southeast and southwest tangent to the fireplace were two holes dug into the floor. Another was in the south half of the floor. Embedded in the floor to the north of the fireplace was a large flat slab of sandstone in which the inhabitants had scratched grooves. In the fireplace, on top of the ashes in it, was a flat thin slab of lime rock that apparently was used as a cooking slab (comale).

The pithouse was approximately 5½ feet deep, and had burned. The roof evidently was a layer of poles, then grass, and a layer of sandstone slabs with dirt on top. On the back wall, which is the cliff face, both above the roof line and in the pithouse, there were petroglyphs of mountain sheep, a snake, an upside down "U" (vagina symbol, ?), and several holes which may have been beam holes. In the fill and on the floor were found a quartz hammerstone; a loaf shaped mano; a flesher/scrapper; two burned eight rowed corn cobs; fourteen side-notched square based points; two drills; four black on white sherd spindle whorls; one graver; one big bone bead; several small stone, bone, and shell beads; and two bone dice, one of which had five dots on one side and several incisions on the other. Approximately half of the sherds were classified as Mancos Black on White. An almost equal quantity of sherds were large quartz-sand tempered indented corrugated ware (Tusayan?). Other sherds were one of Tusayan Polychrome (?), a polished red sherd, and an unidentified black on white with an indented corrugated exterior.

700 Estimated
11/10/61
✓ This site is certainly Anasazi in culture, although the large number of points perhaps would indicate a heavier hunting orientation than some Anasazi descriptions would admit. The pithouse type is widespread in time and culture. The sherds indicate at least a Pueblo II and possibly an early Pueblo III level of culture at the site.

An unrecorded site at the mouth of Kane Creek where it enters the Colorado River is a pithouse village. It consists of at least seven circular pithouses, each about twelve feet in diameter, on two sandy ridges extending out into an alcove made by the canyon wall. Above the pithouses, to the east in a saddle, is an eighteen-foot-diameter, double walled, circular structure. Surface sherds associated with the village are Mancos Black on White and an indented corrugated ware.

Undercut pit storage was also utilized by the local population. One was uncovered with a bulldozer during gravel pit operations on a gravel bench above the Colorado River near the previously mentioned pithouse complexes. The pit had a flat stone cover and a handful of black on white sherds were inside (Pierson, 1958).

* Another recorded site located in the town of Moab near 4th East and Mill Creek Drive has produced at least seven burials (five in 1959, two in 1976). All of them were adult burials. Five of them were found buried together about four feet deep in what may have been a pithouse. The five were buried extended, on their faces, and on top of one another, each one covering the lower body and legs of the body below. Four of the five had slight head deformation. The other two were buried at a shallower depth, although this has been a garden for years and may have been leveled so the present depths are spurious. The two were apparently young adult males and had been buried together in a fetal position, facing east. Their cranium were undeformed, and the cranial indices were 73.6 and 76.3 respectively (Janet L. Pierson, 1977, personal communication).

The site the burials came from is quite extensive and occupies a bench above the flood plain of Mill Creek. The pottery, gathered by the land owners in years of gardening, is mostly gray corrugated and black on whites. The sherds and skeletal material have not been examined in detail at present.

Cummings (1953, p. 44), describes a "turtle-back adobe walled structure near Moab." Unfortunately little else is known of this ruin.

At the request of the local sheriff, Points and Pebbles excavated a burial in 1959 from a small slab-lined cist in an overhand near Kings Bottom in the vicinity of the above-mentioned underground storage pit and the famed "mastedon" petroglyph. The burial was in the fetal position, with an undeformed cranium, wrapped in a rabbit fur blanket, and accompanied by one fragile sandal. The sandal appears to be a finely woven rounded heel, yucca twine affair, but the toe section is gone. However, it resembles illustrations of some of the Basketmaker III types from the literature. The heel section is woven with the warp threads running the length of the sandal till about mid-section where the warp threads run the width of the sandal. The heel is slightly cupped, with heavy twine for tying. Both S and Z twist two-ply threads are used.

During work in the Arches National Park about 1960, a burial was noted washing out from underneath a boulder above the present Courthouse Wash bridge by one of the maintenance men. It had an undeformed cranium, and was accompanied by a single rod-foundation, coiled basket fragment. The burial had been disturbed, so position was not determinable.

Hunt (1953) found very little evidence of the use of the higher elevations of the LaSal Mountains by the agriculturists who lived in the valleys and canyons and had masonry structures. There is scattered

evidence from Arches National Park on the north side of the Colorado River and the area between the Green and the Colorado that the Anasazi were utilizing the resources there. Berry (1975) describes rock-shelters, granaries, and campsites with Pueblo pottery in them from the Arches. Gunnerson (1959), Pierson (1977), and Keller (1975a and 1975b, 1976) describes the rockshelters, granaries, and campsites with Pueblo pottery in them scattered over the mesa and in the canyons of the land between the Green and Colorado Rivers.

Thompson (1978) in his 1 per cent sample survey found no Pueblo material to the south of the LaSal Mountains in the Dry Valley area and west along the mesas flanking the Spanish Valley. He did identify Anasazi sites near the Colorado River in the Pritchett Canyon area, but, in spite of his maps indicating pottery, the site survey reports indicate no ceramics, and the judgements were made from "depth" and pictographs. However, the Dellings have excavated a rock shelter on the west side of Roan Bailey Mesa, west of Dry Valley, which contained Anasazi pottery and maize remains (Delling and Delling, 1969).

4 The LaSal Mountain Anasazi, from the above evidence, were living in pit-house villages along the watered side-streams flowing out of the LaSal Mountain massif, but at the lower ends of the streams near where they entered the Colorado River and where there was farm land sufficient for their needs. There were not many of them, and the largest villages have probably disappeared under the town of Moab. The pithouses were circular, masonry-walled affairs, some with ventilator shafts or entry ways, and with adobe-lined fireplaces. Small square-roomed structures were in use in the Paradox Valley along with or succeeding pithouses. No indication of religious structures has been found, and, except for interment of the dead and a wide variety of pictographs and petroglyphs in the region, no indication of religion is present. Some circular masonry structures (usually described as dwellings) were built on hilltops and, although they suggest defense, it may be they were part of the religious pattern, for they occur alone (example: 42Gr178).

The subsistence pattern seems to have been based on corn agriculture with a heavy use of the wild plants and animals. The corn ranged from 8 to 18 row types with a mean of 14. Foraging expeditions were made out into the desert country surrounding the favored valley and canyon occupation areas. Some evidence exists to show a dependence on grasses available in the desert and some of the desert animals such as deer and rabbit. In Paradox valley bison and mountain sheep were important, and there are bison petroglyphs in the Moab vicinity. Other plants and animals were undoubtedly used, but evidence is still lacking due to the few minor excavations in the region as opposed to the many surface surveys, hence the lack of perishable materials that would give a more complete story.

Strangely enough, there are no indications that the LaSal Mountain Anasazi used the mountains themselves for part of their subsistence pattern. Hunt (1953), Toll (1977, p. 158), and others have indicated the

possibility of other foraging peoples occupying the mountain environs which closed off these areas to the LaSal Mountain Anasazi and contained them to the areas in which they have been found.

The LaSal Mountain Anasazi used ground stone tools in the form of slab and trough metates and small long-oval manos. They also chipped stone, with the usual inventory of points, knives, choppers, drills, gravers, etc., indicating the variety of tasks accomplished by them. Only the points have some diagnostic value. They are usually small and side-notched, with square bases, while others are corner-notched with slightly expanding stem. There may be a time difference here, with the latter being slightly earlier. The last mentioned point is also found without pottery, and is suspected of being part of the foraging complex that may have used the area at the same time as the farming communities. The idea that the farmers may have visited the mountains dropping these points and not leaving pottery is rejected because of the sites in the desert where pottery is found. Although water is not as plentiful in the desert as it is in the mountains, there is a sufficient supply so as to indicate that the pottery was not necessarily always brought to the desert as water containers.

Evidence for the more perishable things is less plentiful. Baskets were made, evidently a one-rod coiled variety; sandals of finely woven yucca fiber, phragmites arrow shafts, and rabbit fur blankets were also used.

All we know about the people is that they were a long-headed group not practicing intentional head deformation. They buried their dead in and about their villages, and in slab-lined cists in rock shelters. Some were buried in a flexed or fetal position. Others, and these may be outsiders or at least unwanted peoples, were carelessly thrown into their grave, one on top of the other, face down, with no grave offerings and little care.

The pottery and some of the perishables indicate a dating of from sometime in Basketmaker III times through, at the very latest, an early Pueblo III time, with the bulk of the occupation relating to the ubiquitous Pueblo II-Pueblo III period. Sites in the area classified as Basketmaker II must be suspect, for most of them have been classified on very tenuous grounds, such as depth of fill and the absence of any other traits. They just as well could be Archaic sites or Numic sites, for all three culture levels have similar trait lists. Pueblo I is also a problem in that it is poorly defined except for its pottery, and little or no neck-banded plain gray wares or Kana-a decoration style Black on White pottery is reported from the sites designated Pueblo I in the area. Only the top site (42Gr178) has Pueblo I sherds, and they are mixed with Pueblo II sherds.

As most students of Southwestern archaeology well know, the Pueblo stages do not occur at the same time in all areas. The pottery so far identified in the area can be dated from about 900 A.D. to 1282 A.D. if one takes the widest range of dates, or it could all be placed in the time period 900 A.D. to 1075 A.D. at the narrowest time span that covers most of the types (Barnitz, 1966). A problem is that there has been



Figure 15. Typical storage granary of the region.

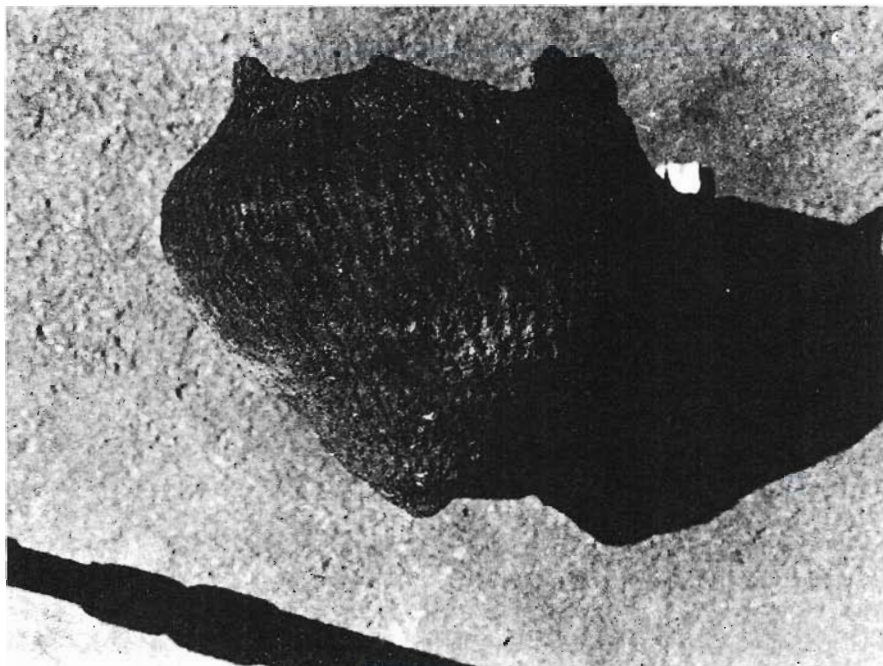


Figure 16. Ute pot from the LaSal, Utah area.

no good study of local pottery varieties and it is acknowledged that many, particularly the plain wares, are somewhat different from the type descriptions and may well represent local types.

The situation is similar to that found in other peripheral areas where the cultural norms for the period as described from the large centers never quite seem to fit the local situation, and one wonders if one is really dealing with the same culture. Jennings sums it up succinctly in his Glen Canyon summary when he describes the genius of the "real" Anasazi as "the ancient foraging skills, to which was added horticulture" (Jennings, 1966, p. 62), not the large urban centers.

The LaSal Mountain Anasazi were that sort of genius, that sort of environmental hustlers, and they were a long, long way from the bright blue flame of culture, almost as far as the area is today. They tended to do their own thing and kept many of the old styles alive, but managed to keep in touch with "culture" through trade, as the pottery shows. There is little to indicate that they had other than an unhurried, uncrowded lifestyle, and their biggest problem, and perhaps their downfall, was erosion. The widespread Southwestern erosion cycle that began about 1200 A.D. in this region (Richmond, 1962) probably brought an end to the small LaSal Mountain Anasazi colonies, if they lasted that long. Some of them may have joined the nomad neighbors who might have spoken a related tongue. Others probably moved south, stopping to farm or simply reverting to unforgotten foraging ways for the time being until arable land was found.

Fremont: Hunt (1953) believed that the pottery-using agriculturists in the LaSal Mountain region were Fremont, and there are other references to Fremont further south in Beef Basin and the Needles area (Rudy, 1955; Pierson, 1962). More recently, Toll (1977) has made a case for Fremont involvement in the Paradox Valley-Dolores River area. However, there really are very few physical evidences of Fremont in the area under discussion. Jennings (1975) says there is no Fremont south of the Colorado River. There are a few Fremont sherds in the Salt Canyon area (Sharrock, 1966), a Utah style metate from North Cottonwood Canyon (Davis, 1975), and some petroglyphs and pictographs that may or may not be in the Fremont style scattered over the region. Some of Hunt's (1953) gray wares might be Fremont, but there are no calcite-tempered ones among them as would be expected so close to the Turner-Look Fremont site where Fremont calcite-tempered wares were an important trait (Wormington, 1955). Only in the Paradox Valley is there indication of Fremont occupation (Toll, 1977, p. 162; Kasper, 1977) and this information is from secondary sources; the original work by Leach is as yet unpublished.

If the Fremont were in the LaSals hunting, as has been suggested by Toll (1977) and Kasper (1977), they did not bring pottery with them, or it has not been recognized, and they used larger points than they have been given credit for. Hunt found none of the smaller late points in the mountains (Hunt, 1953, p. 10). Fremont use would help account for the lack of Anasazi use of the LaSals, however.

That there was contact between Fremont and Pueblo is indicated by some of the pottery found at the Turner-Look site. Wormington (1955) reports Mancos Black on White, Deadmans Black on Red, Tusayan Black on Red, and Middleton Black on Red, plus Tusayan Corrugated and a type with corrugated exterior and black on white interior. Some of the dominant ware is the calcite-tempered plainware which has no Anasazi counterpart.

Comparing the house forms and trait list from Turner-Look with the few known sites in the Moab vicinity, one cannot help being struck with the similarities. Many point types are shared, house form and features are similar, decorated and corrugated wares are the same, burial customs are the same, bone dice, bone beads, stone beads, bone awls, and some metate and mano types are similar. The principal difference is in the lack of calcite-tempered pottery in the Spanish Valley area. Could this be strictly an environmental difference in that there is little or no Mancos shale in the Spanish Valley area whereas there is little else in the area of Turner-Look? Wormington believes the Mancos shale calcite geodes produced the tempering material for the Turner-Look calcite-tempered pottery (Wormington, 1955, p. 68).

We do not feel that there is enough specific data to go further with this discussion and can only hope that this discussion will stimulate future research which will give us the answers we need. Generalizations and speculations in this area at this time can only lead to confusion and frustration, and there is really little to discuss with the evidence we have.

PROTO-HISTORIC

Numic: There is good archaeological and historical record of the occupation of the area by the Numic speaking peoples, and in particular the Southern Utes and perhaps the Paiutes. The historic record is discussed under Indian History in the section on History in this document. Briefly, when the Elk Mountain Mission came into Spanish Valley in 1855 and built a fort near the present site of Moab, there were Ute Indians living in the valley. They were farming, Pueblo style, with dibble sticks, and growing corn, squash, and melons (Tanner, 1937, p. 19). A village or camp is reported from the upper end of the Spanish Valley at that time and eventually, before three months were up, the Indians killed several of the missionaries and ran the remainder out of the valley. There were other conflicts with Indians in the white settlement period from 1879 to 1900, but the Indians were a mixed lot by then, consisting of Utes, Paiutes, and others.

Wormington (1955, pp. 133-135) suggests that Utes and Paiutes were not culturally different in archaeological contexts as the pottery is much the same. Schroeder (1965, p. 53) suggests that Utes only became Utes with the advent of the horse and Plains culture traits. This is not borne out by many recent ethnologists who find strong differences in Ute and Paiute cultures (Smith, 1974, pp. 18-19).

Ute archaeology is described by Buckles as a variant of the generalized Desert Culture of Jennings, with the historic occupation differing from the prehistoric in the addition of European articles of metal and the horse with its Plains culture complex (Buckles, 1968). He reports distinctive points less than an inch long, thin, triangular, and side notched. Other stone tools are crude, with the exception of knives and rare small end scrapers. Large cores and choppers are common. Small one-hand handstones, which are usually bifacial and flat, and unshaped slab milling stones with circular grinding surfaces are the plant food preparation tools. There are few bone tools.

Pottery is rare, and Buckles (1968) says it appears to be associated only with late prehistoric and historic Ute sites. The vessels are pointed-based, wide mouth jars with low shoulders and slightly flaring rims. They were coiled and finished by scraping and wiping, or by pressing the coils together with the fingernails, leaving a corrugated effect. Surface color is usually yellowish brown to gray. Schroeder also describes some Ute pottery varieties from western Colorado with mica and quartz temper found on the surface and with a paddle and anvil finish which was punched with a stick to make a "corrugation" effect (Schroeder, 1955, p. 133). One pot similar to Schroeder's description, except that it was scraped, has been found by local collectors in the LaSal area (Harold Provonsa, personal communication, c. 1960) and shown in Figure 16.

Habitation sites varied with elevation, according to Buckles (1968). Valley floor sites with beads, metal points, and other historic objects were found. These were campsites of large groups of people living in either brush wickiups or tipis. Rock shelters were used higher on the slopes of the valleys. In the pinyon-juniper areas, higher on the plateaus, wickiups were used. These were made by leaning tree limbs against each other in a conical shape, with a diameter of about eight feet the usual size. The exterior was covered with branches and bark, and beds of cedar bark are commonly found inside. On the tops of the plateaus the campsites are represented only by surface materials (Buckles, 1968, p. 62).

In the area under discussion mostly rock shelters and open sites of Ute origin have been found. Two caches of tipi poles have been reported (Pierson, 1960). One cache of eight poles ranging from 10½ feet to 13½ feet long were found leaning against a tree on Fisher Mesa at the north end of the LaSal Mountains. Another cache of three was found under a rock ledge in the vicinity of Little Valley near the Arches National Park, with the remains of a skin cover. The three appear, from the wear pattern, to have been used as a travois.

Hunt (1953) has identified with certainty a half-dozen Shoshonean (Numic) sites and 25 probable sites in the area under discussion (Hunt, 1953, p.16). The sites were in the canyons and in the pinyon-juniper areas, with none in the mountains. They are identified by the presence of small side-notched points, some with basal notches; small triangular

points; oval and rectangular knives; large and small flanged drills; small flat snubnosed end-scrappers; keeled snubnose end-scrappers; spatulate ended-scrappers; double convex-edged scrapers; oval, concave and keeled side-scrappers; flake gravers; cobble and core choppers; flat, slightly basin-shaped metates; and bifacial and oval manos. Pottery was a plain brown ware found at one site in the Castle Valley area, but another site produced Hopi yellow wares and Navajo pottery, which Hunt considers indicative of Shoshonean (Numic) occupation or trade expeditions, which are known to have occurred historically for the Navajo at least. Architecture is reported as absent except for low rock circles and walls and the remains of a masonry dwelling at a mixed site near LaSal which had Hopi and Navajo pottery (42Sa182). In this same vicinity maps from the Hayden expedition indicate a "Ute Farms" (Hayden, 1877, Sheet VIII). The hogback ridges on the northeast side of Castle Valley seem to have been a favorite Numic camping area (Hunt, 1953, p. 229).

Berry found four rock shelters with "Paiute-Shoshoni ware" in Arches National Park (42Gr516, 528, 568, and 570). A small triangular point was found at one of the sites, but the others produced no diagnostic materials. One petroglyph panel (42Gr297) depicted horses with riders and mountain sheep (Berry, 1975).

Luster Cave, located just inside Utah on the Little Dolores River, is an apparent Numic site excavated by Robert Lister (Wormington and Lister, 1956, pp. 93-106). The cave or rock shelter contained several hearths and slab-lined cists. Twenty-nine potsherds were found, of which twenty-six were a plain brown to dark gray, rock and mica tempered ware. The surface was manipulated with finger impressions and the form apparently was a wide-mouthed container. Three sherds were in Pueblo corrugated style, but with the same color, paste, and temper as the plain ware.

Stone tools from Luster Cave were small, long, side-notched points; side and basal notched points; long, serrated, corner-notched tanged points with rectangular bases; triangular points with convex, concave, and straight bases; drills; snub-nosed scrapers, bifacial knives; choppers; slab, shallow basin metates; one-hand oval one and two-faced manos; hammerstones; bone awls; a fishhook (?); bone gaming pieces; deer antler flaker; tubular bone beads; shell pendant; yucca, juniper bark, rabbit fur, sinew, and human hair cordage; wooden arrow foreshafts; reed shafts; wooden butt arrow ends, painted red; leather; bundle with rod core coiled basketry; and a child burial wrapped in a rabbit fur blanket and a piece of deer hide. Also found was an antelope head rigged with sinew tied between the ears, and purposely buried. Corn was found in quantity and described as an 8 to 14 rowed type mixed with Eastern and Anasazi influence superimposed on the Fremont type corn from Yampa Canyon and Turner-Look. Yucca quids were also found, along with pinyon nuts, acorns, and juniper berries.

Dates of the Numic occupation of the area are mostly speculative, because no good tree-ring or carbon-14 dating for Numic sites seems to have been made. Schroeder dates the arrival of the Numics in the Gunnison area of Colorado at about 1150 A.D. (Schroeder, 1953). Schroeder says that the Utes and Paiutes replaced another group, possibly Shoshonean speaking, who had a Pueblo way of life in the area of Southern Utah and Northern Arizona (Schroeder, 1965, p. 53); but Goss, using glottochronology, arrived at the conclusion that the Utes got to Southern Colorado about 1680 A.D., too late to affect the Mesa Verde peoples (Goss, 1965, p. 81), and also that they split linguistically with the Southern Paiute at that same time.

On the other hand, Madsen offers evidence from stratified eastern Great Basin sites that the Fremont and Shoshoneans were in competition in Western Utah at 1100-1200 A.D., with the Shoshonean expansion reaching Northern Utah 1200-1300 A.D. (Madsen, 1975b). This would seem to indicate the possibility of other Shoshoneans moving due eastward and reaching the Northern Colorado Plateau area at about the same time. Annand (1967, p. 59) dates a surface collection of pottery from Collbran, Colorado, that is of Shoshonean manufacture and is associated with Pueblo wares, at a date of A.D. 1400-1500. Associations of Numic pottery with Hopi yellow wares in the Northern Colorado Plateau could indicate Numic presence as early as 1300 A.D. So it is apparent that we must await further study and, in particular, dating attempts to find out the time that the Numic speakers first entered the Northern Colorado Plateau area.

The archaeological remains that they did leave (Hunt, 1953; Berry, 1975; Buckles, 1968; Pierson, 1960b; Wormington and Lister, 1956) indicate a hunting-gathering way of life with the interesting suggestion from Luster Cave that they may have practiced agriculture at an earlier date than they have heretofore been given credit for. Among the foodstuffs they gathered to be ground on slab metates or stored in slab-lined storage pits for later use were pinyon nuts, acorns, juniper berries, yucca, and, most likely, the other seed plants available to them in a high desert plateau environment. Animals used were rabbits, antelope, deer, mountain sheep, and probably fish. Dwellings were rock shelters; pole "wickiups;" probably domed-shaped brush shelters; and, in historic times after the advent of the horse, tipis with skin covers.

The tool kit used by the prehistoric Numic peoples is similar to that used by the Archaic peoples in the same area. Most diagnostic are the small triangular points and small side-notched points, with some of the latter having a basal notch. Pottery seems to be fairly easily recognizable, but there are areal and perhaps time differences. Most of it is a brown ware, frequently with a coppery glow caused by mica on the surface. Some of the pots had a manipulated surface with either a form of fingernail corrugation or an imitation of this form made by punching small indentations in the pot's surface with a stick. Forms of whole vessels are described as pointed-bottomed jars with a flaring lip.

One child burial from Luster Cave indicates some idea of religion and disposal of the dead (Wormington and Lister, 1956). Most of the recognizable rock art post-dates the advent of the horse and is recognizable in the area. They depict long-haired men riding horses, carrying shields, and hunting various animals, including deer and mountain sheep. The rock art is both pecked and painted, with the painted appearing to be later in time.

The lifestyle picture from early historical records gives a little better idea of how these people existed, but does not change the basic picture portrayed by the archaeology. When first seen by Europeans some of the Numics in the Northern Colorado Plateau already had horses, but many of them did not and apparently were still living in the older lifestyle (Tanner, 1976, p. 54). The group in the study area were the Wimonuntci, and the descendants of these are now on the reservation at Towaoc, Colorado, the Ute Mountain Indian Reservation (Stewart, 1962).

The following Wimonuntci traits were gathered by Omer C. Stewart (1942) in 1937 and 1938. They hunted antelope, mountain sheep, rabbits, bears, eagles, buffalo, deer, elk, waterfowl, and most of the smaller animals that existed in their range, including lizards, toads, frogs, and insects. Hunting was done by use of disguises, drives, ambushes, surrounds, stalking, and buffalo jumps. For smaller game they used snares, traps, and both pitfalls and deadfalls. They also fished, using weirs, basketry traps, and the bow and arrow.

They gathered a wide variety of plants, including acorns, pinyon nuts, wild tobacco, yucca, sunflowers, grass seeds, berries, cactus, tule, roots, and tubers. Gathering was done using conical baskets, pointed digging sticks, basketry seed beaters, and mountain sheep horn sickles. Meat and fish were dried and cached in grass-lined pits. Small mammals were roasted whole, and stone boiling and parching of seeds in baskets was practiced.

Agriculture was practiced Pueblo style, with hand irrigation of small plots, the men digging with tools and the women doing the seeding. Several varieties of maize are reported. It was eaten green or ground on a metate when dry. No other agricultural plants are reported by Stewart's informant, but historical records show that in Spanish Valley the Numics (Utes) were growing melons, squash, and pumpkins in addition to corn in 1855 (Tanner, 1976, p. 54).

Domed willow houses about 15 feet in diameter and 8 feet high facing east were made for summer. Conical or tripod houses with a four-pole foundation and interlocking forked poles were made for winter. The entrance was to the east, and the house was normally covered with brush. Tipis were reported as rare, but those used had a four-pole foundation, with ten poles, ten to fifteen feet long, used in making the tipis, which averaged about twelve feet in diameter. The tipi cover was of elk or buffalo hides and was packed on a horse when moving. Sweat houses were used, and made with a tripod foundation covered with earth. They were used by both men and women. Brush windbreaks and sun shades, caves, and menstrual huts were also used.

Fire drills were used to make a fire, and consisted of a hardwood drill and yucca hearth. Skin sacks were used for containers. Bone awls, bone scrapers, and serrated scapula hide fleshers were used to work skins. Brain was used for tanning.

Both the simple bow and the sinew-backed bow were made with a sinew bowstring. Mountain sheep horn bows are also reported. A wristguard was used in shooting the arrows, which were made with either hardwood or stone points. Both compound and simple arrowshafts were used. The simple shafts were made of serviceberry, while the compound ones were made with a cane or rosebush shaft and a hardwood foreshaft. Utes are reported to have salvaged arrowpoints from prehistoric sites, and corner-notched base and stemmed-base points were used. Quivers and two-piece shaft straighteners were used, along with a circular shield made from buffalo hide, as part of the weapons complex.

Baskets were made by the women, using willow and squawbush. Coil baskets were made with two rod, three rod, or two rod and splint foundations, while twine weaves were a plain two strand. Forms of baskets were winnowing baskets, circular trays, Navajo ceremonial coiled baskets, conical carrying baskets, wide mouth berry baskets, small mouth water jugs, bowls, ladles, and fish traps. Juniper bark blankets were woven, as were mats of twined bark. No rabbit skin blankets or pottery are recorded for the Wimonuntci. Tumplines were used for carrying. Cradles for the babies were oval and made of basketry.

Humans ornamented themselves by putting ear ornaments in holes in their ears and, rarely, tattooing their faces, arms, and hands. Necklaces of snail shells, animal claws, elk and deer teeth, bone tubes, and juniper berries were worn. Paint mixed with marrow or fat was applied to the body, face, and hair for appearance and for protection against the sun. Hair brushes of grass and vegetable bundles were used to brush men's shoulder-length hair, which was then braided. Old women wore their hair neck-length, and let it hang loose. The younger women braided their hair over each shoulder.

Clothing included a bearskin headband, long deerskin dresses for the women, and deerskin shirts and leggings for the men. Men also wore a breechclout made of skin. Footgear, when worn, consisted of skin moc-casins with a hard sole for the men, and knee-high boots for the women. Deer or badger skin was used to make the footgear.

Sport games and toys included a football game, ball race, shinny, ring and pin, stick game with counters, stick dice (rarely), archery contests, arrow tossing, sliding, diving, swimming, mud fights, foot races, wrestling, stilts, tops, toy slings, bull roarers, cats-cradle, and unbaked clay dolls. Tobacco was smoked in L-shaped and cloud-blower pipes, cane cigarettes, and elderberry cigarettes. Smoking was both for pleasure and religion. Notched sticks, drums, hoof rattles, musical bows, and whistling with the lips were used in making music.

Marriage was by bride price, with polygyny, polyandry, sororate, and levirate practiced. Division of labor was such that the men did the hunting and fishing and the women did the general seed gathering. The sovereign body was the localized band, headed by a chief. Larger groups got together for special occasions such as hunting or war. In war, scalps were taken, special dress was worn to battle, and the return of the warriors was announced before they entered camp.

During pregnancy women practiced taboos against fat foods and other foods. The birth took place in a special house with a midwife present. The placenta was buried in the pit that had been used for a bed in the birth house. The father was subject to special rules until the navel cord dropped off. Twins were not particularly welcome, and deformed babies were killed. Girls had a puberty rite ceremony and were confined with taboos, as were menstruating women. Boys could not eat the first big game that they killed.

At death the body was prepared for burial by washing and dressing in best clothing. Burial was in any convenient place, in an extended position with the face to the east. Cremation was also practiced using a pyre. Personal property of the deceased was mostly destroyed, including the killing of a horse at the grave. Mourners cropped their hair.

Male and female shamans received power through dreams. They used their powers and paraphernalia to cure patients by singing, by smoking, and by sucking objects from the patients.

Dances were performed for pleasure and the general good will of the group. Circle dances, bear dances (back and forth dances), scalp dances (men only), war dances (turkey dance), and the sun dance were performed, usually in a brush corral.

Athabaskan (Navajo): The Navajo were present in the area all through the 19th century. Historic records and ruined Navajo hogans show this. Correll (1971) has gathered both kinds of evidence plus oral history to show Navajo occupation of the area around the Abajo Mountains. Mormon missionaries met with Navajos who had come into Spanish Valley on a trading expedition in 1855 (Billings, 1855).

Archaeological evidence of Navajo occupation is not great, but is important. Hunt found Navajo pottery mixed with other late pottery types (Hopi yellow wares) at a site near LaSal (42Sa182) (Hunt, 1953). There was at least one hogan with masonry walls and a collapsed cribbed roof, a late 19th century trait, still visible in Ruin Park in 1967 when the author photographed it. Other sites described as circular rock walls in that area might turn out to be Navajo, for sites of that culture have little pottery on them.

By the 19th century Navajos had been in contact with Pueblo and Spanish New Mexican cultures long enough to absorb many of their traits (Underhill, n.d.; Kluckhohn and Leighton, 1956). They were dependent on the grazing of sheep and goats, and the farming of corn, squash, melons, peaches, beans, and other Pueblo and Spanish plants. They also hunted game animals and gathered many wild plants.

Early hogans or houses were tripod wooden affairs made of logs and covered with dirt. Later hogans were masonry or logwalled with a cribbed log roof covered with dirt. A smoke hole was in the center above the fire pit, and the doorway almost invariably faced east.

Dress was a mixture of native and adopted styles. Men wore sleeved shirts of cloth and cloth pants. Women wore long early 19th century European style dresses that reached the ground, and usually had several skirts of cotton or velveteen worn at the same time, one over the other, for fulness and warmth. The woman's blouse was long sleeved and made of velveteen cloth in the late 1800's. Men wore cowboy hats or cloth bands with the hair tied in a bundle in back. Ornamentation was usually silver and turquoise jewelry and buttons. Belts, pendants, necklaces, shoe buttons, earrings, and other ornamentation were worn by both sexes. Men and women also wore brown/red dyed leather moccasins with a hard sole.

Metal tools were much in use by the 19th century. They were obtained by trade or theft from their neighbors. Metal working of silver and iron was done by Navajo smiths, having been learned from native New Mexicans and Americans.

Pottery was made in a pointed bottom, wide-mouth form for the most part, sometimes covered with pinyon pitch, and usually coiled-scraped with a corncob to give a rough finish. Rims were squarish, and sometimes decorated with a band below the rim or with the rim incised. Baskets were also used, the most famous of them, the coiled Navajo wedding basket, being bought from their Ute neighbors.

Social organization was based on the extended family. Clan descent was matrilineal and mother-in-law avoidance was practiced, although made difficult by matri-local residence at least in the early days of the marriage.

Shamans were males, and they practiced curing ceremonies using sand paintings, sucking of objects from the body, herbs, feathers, singing, and tobacco smoke. Masked dancers, similar to Pueblo Katchinas, were a part of some curing ceremonies. Other dances were social and involved both men and women.

Avoidance of the dead was practiced. The body was usually buried the day of death by the relatives who were then required to undergo a four day curing ceremony. If death occurred in a hogan, it was burned. Puberty ceremonies and menstrual avoidance were practiced for the women. Initiation rites were preformed at the Night Chant for both boys and girls.

It will be noted from this brief summary of Navajo life that there are many similarities to the lifestyle of the Numic (Ute) peoples. This is due to borrowing from one another and close and long term relationships of both groups with Pueblo peoples.

Pueblo (Hopi): There are several reports of Hopi pottery occurring in varying amounts in the area under discussion. This has been reported as yellow wares with plain, coiled, and punctate surfaces. Polychrome painted yellow wares have also been found. These wares have been in vogue since at least 1300 A.D. and are wide-spread over the Southwest. They were made not only in the Hopi villages, but also there are accounts of Hopi Genizaros or Christianized Indians living in Abiquiu and making Hopi pottery (Swadesh, 1974, p. 40). The Hopi pottery was probably the most popular tradeware in the Southwest, so that its presence is not indicative of the presence of Hopi Indians in the area. While it is possible that they did range as far from home as Castle Valley and the LaSal Mountains, it is much more likely that the wares were brought in by the Numic peoples or even the Navajos or the Spanish traders in the region.

Hunt (1953) reports Jeditto yellow wares at LaSal mixed with other late pottery types, including Navajo pottery, at 42Sa182. She also found it at sites in Fisher Valley and Castle Valley (42Gr69, 75, 76, 122, 144, 159, and 184) and in the mountains at one site (42Sa194).

Indicative of the trade usage is one yellow ware polychrome bowl with salt in it which was found near Cave Spring in Canyonlands National Park a few years ago (personal communication from Lewis T. McKinney, circa 1966).

If the Hopi did make trading trips to the area under discussion, then they had little effect on the local population that we can discern today. Their lifestyle would have been one of a trader coming into a land, where they may or may not have been welcome, to trade such things as salt, and perhaps shells, worked turquoise, corn (?), and other such portable objects as pottery. What they traded for is unknown; perhaps the coiled baskets that the Numics were so adept at making for the Navajo were traded, with the Hopi being the middleman, or deerskins which the Numics seem to have had plenty of. As far as we can determine from historic accounts, distance seemed to make little difference to aboriginal travel, or at least some individual aborigines, for they were found at great distances from their homeland and among peoples far different from their own. So it should not be completely discounted that the Hopi were in this part of Utah.

On the other hand, once the Utes received the horse they became wide-spread and thought nothing, for example, of trading expeditions from Utah Lake to the San Juan River, or from Southwestern Colorado to the plains of Eastern New Mexico.

How one would prove who visited whom is somewhat difficult, and a problem for future archaeologists and ethnohistorians.

CHAPTER 3

HISTORY

Exploration and Early Settlement to 1860

Spanish Trading Ventures to Southeastern Utah and the Wasatch Front:

After the reconquest of New Mexico by De Vargas in 1692 the New Mexican Spanish slowly expanded their frontiers from the Rio Abajo, the Rio Grande Valley between Santa Fe and Albuquerque. One of the earliest frontiers to be settled was the Chama valley in the vicinity of Abiquiu in the early 1700's. From this frontier town, traders, both legal and illegal, began to penetrate the country to the northwest, the land of the Utes. Many of the citizens of the Abiquiu area were Genizaros, Christianized Indians, of all tribes, including some Ute, Hopi, Apache, and others (Swadesh, 1974).

By the 1730's trade with the Utes and other Indians was well established. Some of the Utes that were trading at Abiquiu ranged as far north and west as the Grand Junction, Colorado, area. Specific details are difficult to come by because some of the trade was illegal, dealing in Indian slaves, in addition to deer and mountain sheep hides, dried buffalo and deer meat in trade for horses, cotton blankets, corn, wheat flour, native tobacco (punché), trade knives, and awls. The traders went by foot and by horseback, and knowledge of the country to the Utah/Colorado line was well established by 1776.

The earliest recorded trading expedition to penetrate the general area of Southeastern Utah and Southwestern Colorado was by Juan Maria de Rivera who, in 1765, went on a prospecting and trading trip around the La Plata Mountains of southwestern Colorado to the Gunnison River (Hafen and Hafen, 1954, p. 52). A recent journal find indicates that Rivera may have reached the Colorado River at present-day Moab on two trips in 1765 (Cutter, 1977).

Others, including Rivera, repeated and expanded the ventures. Auerback (1941, p. 30) reports an earlier expedition of Padre Alonzo Posados in 1763 to the Uncompahgre-Grand (probably Gunnison) River junction. Father Posados was sent by the same Spanish Governor as was Rivera, Governor Tomas Veles Cachipin of Santa Fe. In 1774 or 1775 three of the men previously with Rivera, Pedro Mora, Gregorio Sandoval, and Andres Muniz, are reported as far as the Grand (Colorado) River in central Colorado and possibly further (Goetzman, 1966). Muniz was with the Friars Dominguez and Escalante in their trek through the Great Basin in 1776, and the friars reported that he and his brother, Lucrecio, were found to be trading with the Utes on the headwaters of the Gunnison for weapons against the specific orders of the friars (Bolton, 1950, p. 49).

In 1785 a trading party of five was brought before the Abiquiu magistrate for an illegal trading trip on foot to the San Miguel River in southwestern Colorado, and in 1797 two dozen unlicensed traders were reported to have traveled alone or in pairs, mostly on foot, to the LaSal Mountains, Rio de Pinos, and the Uncompahgre River trading corn and flour for dressed deer hides, buffalo robes, and mountain sheep skins (Swadesh, 1974, pp. 167-168).

Regular travel deep into the heart of Utah must have begun about the time of the Dominguez-Escalante expedition, for in 1805 the Genizaro, Manuel Mestas, of Abiquiu at 70 years of age spent a month going to the Utah Lake area to recover stolen horses with some indication that he had much familiarity with the route for possibly 50 years (Hafen and Hafen, 1954, p. 85). The Maurico Arz -Lagos Garcia party left Abiquiu in March, 1813, for Utah Lake. Running into trouble, they first went to the Sevier River and then eastward to the Colorado River. On the Colorado they met the Chief Guasache (Wasatch) of the Utes waiting to trade with them "as was his custom" (Hill, 1930b, quoted in Hafen and Hafen, 1954, pp. 85-86). This sounds like Moab Valley, or perhaps the Green River Crossing. By 1820 the trade to the Wasatch Front area had become highly institutionalized as the Sandoval party conducted trade with the Timpanogos, Sampuchis, and Saguarichis reportedly "according to custom" (Swadesh, 1974, p. 169).

Dominguez-Escalante Expedition: In July 1776 the Franciscan friars Francisco Atanasio Dominguez and Silvestre Ve'lez de Escalante along with the cartographer Captain Bernardo Miera y Pacheco started from Santa Fe along the trail of the traders to explore a route to California through the Great Basin. They failed in their aim but did open up much of Utah to future explorers and traders. They missed southeastern Utah by a few miles, following the Dolores River Canyon instead of heading northwestward from the vicinity of present-day Dolores, Colorado. The names of the Abajo (lower) and LaSal (the salt) Mountains in Southeastern Utah were reported by the friars, however, and their guide, Andres Muniz, undoubtedly told them of the accepted names among the traders.

Armijo Trading Expedition: In November 1829 Antonio Armijo, citizen of Abiquiu, and 31 men left Abiquiu to find a better trade route to California. They traveled along the San Juan River in southern Utah, crossing the Colorado at the Crossing of the Feathers, and eventually reached California in 86 days (Hafen and Hafen, 1954, pp. 156-170). They traded their woolen goods for horses and mules, and part of the party returned over the same route in February 1830, taking only 40 days. The route proved not to be the most favored, but the Armijo party further stimulated what was to be a steady parade of New Mexican traders to California, mostly through Utah.

Traders and Trappers To and Through Utah: Beginning about 1804 traders and trappers out of the United States began to use the same territory in Utah and elsewhere that the New Mexicans had been using. As time went on some of them joined forces in joint trading or trapping ventures. Taos was added to Abiquiu as a New Mexican trading center.

Coyner (1955) gives an early account, which is questionable, of two American trappers, James Workman and Samuel Spencer (Weber, 1971, p. 42, names them as Lafargue, Vesina, Grenie, and Roi, all French) who were lost in the Rockies and were seeking a way to Santa Fe about 1810 (perhaps as late as 1813). Getting on the Colorado River system they headed downstream thinking it would eventually bring them to New Mexico. The first signs of civilization they saw, however, was a heavily used crossing of the Colorado at what some have identified as the crossing at Moab. Taking the trail eastward they ran into a party of New Mexicans which included an Englishman who translated for them. Spencer and Workman joined the New Mexican party on its trip to Los Angeles and spent the winter there, returning via the same trail the following spring to Santa Fe.

With the establishment of the Republic of Mexico in 1821 a new and more liberal attitude toward American trappers and traders began. By 1824 they were well established in Taos. That spring, William Wolfskill, Issac Slover, and Ewing Young were trapping the headwaters of the San Juan River, probably along the route of the Spanish traders. In the fall of 1824 men like William Huddart, Thomas "Pegleg" Smith, Antoine Robidoux, and Etienne Provost were visiting the southern headwaters of the Colorado River. Provost and his partner, Francois Leclerc, ranged further west and north than the others, leaving Taos for Green River via one of the Spanish trails and establishing their base camp at the junction of the White River and the Green River (Weber, 1971, pp. 73-76). Provost most likely passed through part of Grand County on this trip, for routes later used by Antoine Robidoux, who may have been with Provost on this trip, went up Westwater Creek, as evidenced by an inscription there.

William Ashley floated down the Green River through most of Desolation Canyon in 1825 getting as far south, perhaps, as the mouth of Rock Creek east of Sunnyside, certainly to the mouth of Minnie Maud Creek (Peterson, 1975, p. 10). In the fall of 1826, James Ohio Patti, in a rambling, somewhat vague narrative, reported following the Colorado River from Arizona to the Rocky Mountains, passing through the Moab area (Cleland, 1952, pp. 186-187). 1827 saw Sylvestre S. Pratte and Francois Robidoux with their trappers in the area of the upper Colorado (Weber, 1971, pp. 104-111). By 1830 much of the Utah beaver country had been looked at, and many routes had been established through the wilderness, setting the stage for the establishment of the great trading route, the Old Spanish Trail.

The Old Spanish Trail: In reality, there was not one main route but several branches to the trail. The principal one followed the route chosen by the padres Dominguez and Escalante from Abiquiu up the Chama and crossing the Headwaters of the northern branches of the San Juan until the Dolores River in western Colorado was reached. Near the big bend of the Dolores River, near the present town of Dolores, Colorado, the old Spanish Trail left the padres' route and headed for Utah. The trail was directed toward the crossings of the Colorado at Moab and the Green at Green River before heading westerly and southwesterly for California. This avoided the canyon system of the Colorado and the Green below Moab, a most difficult bit of country to cross. Another route, most likely developed by the American trappers at Taos, led north to the San Luis Valley, west over Cochetopa Pass into the headwaters of the Gunnison, down the Gunnison to the Colorado, and west to Utah. The Colorado was left at the Utah border and a route along the face of the Book Cliffs to the juncture with the southern branch of the trail just east of the Green River crossing was followed. A third route followed the padres down the Dolores and continued to the junction of the Dolores with the Colorado, crossing the Colorado and heading northwesterly to a junction with the northern branch of the trail along the face of the Book Cliffs.

There were minor variations along the trail as short cuts and water holes were found. The 1848 trail log given to Orville C. Pratt by B. Choteau for Pratt's trip to California (Hafen and Hafen, 1954, Appendix) indicates they must have come across the Sage Plain to Three Step Hill below Summit Point and dropped into either Lisbon Valley or Dry Wash (see Pettit, 1855) heading for Kane Spring, which they called Corisite. From Kane Spring the route followed the present highway to the springs along the north side of the valley at what is now called the "Old City Park." Old-timers tell of shod horse marks on Blue Hill at the south-east end of Spanish Valley (Tanner, 1976, p. 40).

The crossing of the Colorado River was at an island some 600 yards above the Portal, according to Pratt's diary (Hafen and Hafen, 1954, p. 348). Later informants indicate a ford about where the small creek flowing through Moab Canyon enters the Colorado from the west. Undoubtedly the vagaries of nature and river flow determined where the river was floated or forded. The trail then went up Moab Canyon with the next stop at either Upper Courthouse Spring or, more likely, Brink Spring. From there it was a waterless, and sometimes muddy, trek to the crossing of the Green River just above the present town of Green River.

A possible alternative route is one from the north end of Lisbon Valley, along the flank of the LaSal Mountains, into the head of Pack Creek, and down Pack Creek to Spanish Valley. Except for Macomb's map (Newberry, 1876, map), however, there is no documentation for this route.

The Old Spanish Trail received most of its fame as a principal route of trade and immigration between Santa Fe and Los Angeles during the period 1830-1860. Credit for the first well-documented complete crossing from Santa Fe to Los Angeles using the Old Spanish Trail is given to William Wolfskill and George C. Yount who trapped their way to California the winter of 1830-31 and then remained there as settlers, becoming the first immigrant party to use the trail also (Hafen and Hafen, 1954, pp. 139-154).

The decline in the trapping business and the opening of the Old Spanish Trail and more southern routes through Arizona from Santa Fe to Los Angeles stimulated many trappers and traders to begin trading New Mexican blankets for California mules and horses in a lucrative business. Many of the trading expeditions were undocumented for they sometimes were simply mule rustling schemes. The routes and routines were quickly established and became a yearly affair with as many as 200 men on horseback accompanied by strings of mules making the trek.

Others migrated over the trail to settle in California. William Pope and Isaac Slover with their families did so in 1837, using the northern route of the Old Spanish Trail. The John Rowland-William Workman party migrated to California in the fall of 1841 with a mixed group of families and scientists of different nationalities. Native New Mexicans were immigrating over the trail, as the California census of 1850 shows some 173 living there, most of them having migrated between 1840 and 1845 (Hafen and Hafen, 1954, p. 223).

The famed mountain man, Kit Carson, made the trip from California to Taos in 1848 with dispatches and a companion, George D. Brewerton, who gave a vivid description of their crossing of what most probably was the Green River at Green River, Utah (Brewerton, 1930).

Forts Uintah and Uncompahgre: An inscription on the face of a cliff at the mouth of Westwater Creek where it leaves the Book Cliffs tells the world that on the 13th of November, 1837, Antoine Robidoux had passed there on the way to establish a trading post on the Green or Uintah (Winty) River. This was Fort Uintah, which lasted until the Indians burned it in 1844. Earlier he had established Fort Uncompahgre near the junction of the Gunnison and Uncompahgre Rivers. Robidoux's routes to Fort Uintah from Taos followed the northern route of the Old Spanish Trail until he reached the Book Cliff area where he apparently used several trails through the Books to get to Fort Uintah, probably depending on weather and what he was doing. These routes are the one up Westwater Creek; another up West Salt Creek; and two further east entirely in Colorado, Roan Creek, and East Salt Creek. The first two seem to have been used most, for Rufus B. Sage's narrative indicates he used one of them (Sage, 1858), as did Joseph Williams in 1842 (Williams, 1843), and Antoine Leroux, who left his name in Willow Creek on the other side of the Books from Westwater Creek (John Hoffman, personal communication).

Trappers from Robidoux's forts covered the Uintah Basin and the Green and Colorado River drainages. One of them may have been Denis Julien, who left his name as evidence of how widely they ranged. His name appears at the mouth of Hell Roaring Canyon on the Green River with a date of 1836 and at two other places in the Colorado canyons (Crampton, 1964d, p. 53), and the latest and newest find near the Dark Angel in Arches National Park, dated 1844 (John Hoffman, personal communication).

Beale, Gunnison, and Fremont, 1853: During the summer and winter of 1853 three expeditions involved in railroad route exploration crossed the northern end of Grand County on the northern route of the Old Spanish Trail. Edward F. Beale was earliest in the summer, with Antoine Leroux as guide. They came through Cochetopa Pass and stopped one night near present-day Grand Junction, and two nights between there and the crossing of the Green River (Heap, 1854). Next came John W. Gunnison, following the same route as Beale, probably because he used the same guide, Leroux (Beckwith, 1885). The route was described as parallel to the Book Cliffs but some two to three miles from them. They encountered the Old Spanish Trail's main branch some 20 miles from Green River Crossing and both described it as a well-beaten trail easy to follow day or night. John C. Fremont was the last, and had the most difficult passage because of the cold and lack of food (Carvalho, 1951). There are no specific sites identified along this stretch of trail and the only definite camp is one mentioned on Salt Creek near Mack, Colorado, which was located some four miles upstream from the juncture with the Colorado River (Heap, 1854).

Huntington Party, 1854: William Huntington and Jackson Stewart were sent by the Mormon Church over the Old Spanish Trail in the summer of 1854 to explore southeastern Utah for possible settlement (Hunter, 1940). When they reached the "Jump" near the present Arches National Park Visitor Center they were forced to lower their wagons over the 25 foot ledge of Hermosa limestone which ran from one side of the narrow canyon to the other, and proved to be an effective barrier to wagon travel. Once over the jump and across the river the party explored Spanish Valley and cached their wagons at the south end of the valley because of the bad road to the south. The party continued south to explore the country and among other things found the spectacular ruins at Hovenweep (Peterson, 1975, p. 12). On their return trip they left part of the wagon cache and equipment in Pack Creek and returned to report their findings.

Elk Mountain Mission, 1855: As a result of the previous year's exploration a mission was called by the Mormon Church to go to Elk Mountain (LaSal Mountains) for the purpose of educating and converting a tribe

of Ute Indians who occupied the vicinity (Hunter, 1940, Chapter 30), to settle the valley, and probably to protect an important approach to Utah. Alfred N. Billings led the party of men down the Old Spanish Trail, building a dugway, a road cut into the side of the hill, at the "Jump." They crossed the Colorado, evidently just above the Portal, and camped on the south side of the valley. A portion of the dugway which they built, probably somewhat improved, is still visible, although the major portion was destroyed in State Highway road building during 1957. Later, the party moved to the springs near the old ranch house on the highway between Moab and the river (Tanner, 1937, p. 20). They also built a stone-walled fort near there, which has disappeared under the present Texaco bulk plant.

Many Indians showed up at the Mormon fort and the act of Christianizing them was diligently carried out. One trip was made by a portion of the group south to the San Juan River to trade and proselytize the Navajos in that area (Pettit, 1855). The Elk Mountain Mission finally collapsed that fall when some of the Indians in the vicinity, mostly Ute but with others there to trade, became belligerent and killed several of the Mission party, forcing them to leave.

Macomb Expedition, 1859: Captain John M. Macomb left Santa Fe in July 1859, to seek the confluence of the Green and Colorado Rivers (the Colorado was then the Grand), and to find out about the geology and biology of the region (Newberry, 1876). Macomb followed the Old Spanish Trail to Dry Valley, north of present-day Monticello, and apparently camped at what is now known as Hart Spring. He mentions features in Dry Valley, and his map shows the Old Spanish Trail further east than his route, although the place names that are used on the map along Macomb's route are the same ones in Pratt's 1848 itinerary (Hafen and Hafen, 1954, pp. 341-359). Macomb left most of his party in camp and proceeded down Harts Draw and/or Indian Creek almost to the confluence of the Green and Colorado, noting the Indian ruins in Indian Creek below the junction of Harts Draw and Indian Creek as they went. The group returned to base camp and left Dry Valley by going up Peters Canyon past the site of Monticello and on to the San Juan River on their way back to Santa Fe.

Exploration and Early Settlement, 1860-1880

Powell's River Exploration, 1869 and 1871: John Wesley Powell's two pioneer explorations of the Green and the Colorado River below its junction with the Green gave the world the first real indication of

the ruggedness of the canyon country along these two great rivers. Starting at Green River, Wyoming, the expeditions named many of the features along the rivers and in particular the canyons themselves (Powell, 1875 and 1895; Dellenbaugh, 1962).

Hayden Expeditions of 1875 and 1876: Two of Ferdinand V. Hayden's parties, one under James L. Gardner and the other under Henry Gannet, joined forces to survey the LaSal Mountains for the United States Geological Survey in 1875. Coming from Colorado by way of Unaweep Canyon and Gateway, they climbed the east flank of the mountains, naming many of the peaks, including Peale and Tukuñnikivatz (Hayden, 1876). After two weeks on the LaSals they headed for the Abajos, but the Utes forced them to abandon their equipment in Peters Canyon and flee up and over the canyon wall. The site of their traumatic problems has recently been located (Hurlbut, 1975), and some of the abandoned material is now in the BLM Monticello District Office and in the Western History Research Center of the University of Wyoming, Laramie, Wyoming.

The next year a party under W. H. Holmes did get to the Abajos to study them briefly (Hayden, 1878). Henry Gannet braved the country once more that same year to make a reconnaissance that enabled him to discuss the Colorado and San Juan River drainages.

Settlement: By 1875 the world had begun to close in on Southeastern Utah, one of the last large areas to be settled. Neighboring Colorado was filling up its southwestern corner with miners and was about to become a state. The Navajos to the south were back from the long walk to Fort Sumner, and starting to enlarge their domain because of population pressures. More and more Latter Day Saints were filling the Central valleys of Utah. In spite of Indian problems the rich grazing land in the "Little Grand," or Spanish Valley, was a temptation and cowboys began to drift herds into the area.

About 1874 either Crispen Taylor or George and Silas Green brought cattle into the valley (Tanner, 1976, pp. 64-65). The Utes who used the valley for farming, trading, and winter quarters ran off Crispen and killed the Greens. Others followed, despite the Utes, with their cattle; some came to farm. In 1877 the mulatto, William Granstaff (Nigger Bill), and his partner, a French Canadian trapper, settled in the old Mormon fort to farm. Later that year the Ray, Maxwell, and McCarty families stopped at the fort awhile on their way to settle at LaSal the next year.

In 1878 and 1879 many more settlers came to Spanish Valley. Two irrigation ditches were built and Washington was petitioned for a post office. The first regional post office, however, had been in LaSal in 1878, the



Figure 17. View of Moab in the early 1880's.

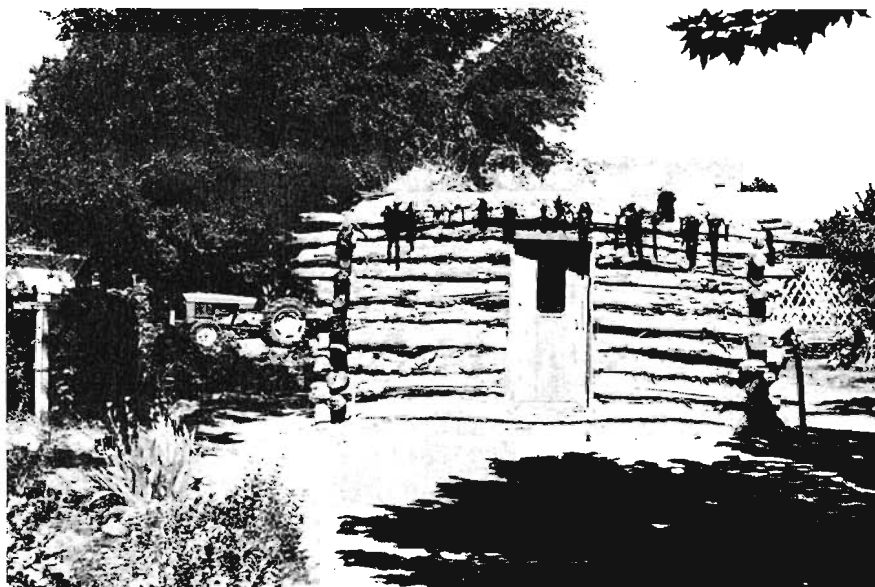


Figure 18. Typical log house of early day Moab.



Figure 19. Richardson Postoffice, 1896.

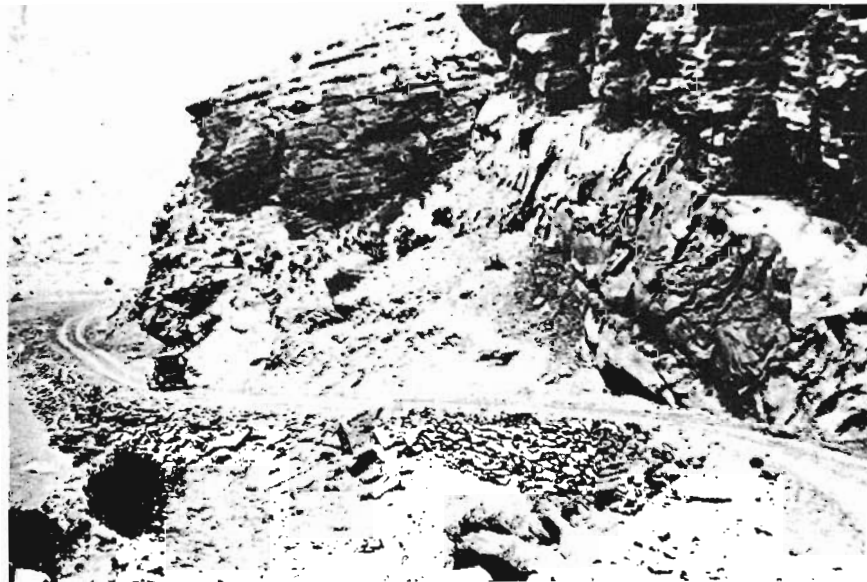


Figure 20. Road at "The Jump" about 1915.

old settlement on the east side of the mountains on LaSal Creek where there still is a settlement and sawmill today. About 1901 the post office and town name was moved to the settlement at Coyote on the south slope of the LaSal Mountains.

The first post office and presumably the first settlement in Spanish Valley was at Plainfield, now in San Juan County and just south of the Grand/San Juan County line. A few ranches and farms still exist where this settlement, variously called Plainfield, Bueno, and Poverty Flat, was located. Indications are that the old buildings were log and have been torn down (Ray Holyoak, personal communication, 1979), but further on-the-ground study needs to be made.

The settlement near the old Mormon fort became the main settlement in the valley and about 1881 was named Moab after the Biblical land of Moab. The only competitor to Moab in the region for population numbers was the settlement at Bluff on the San Juan River some 100 miles to the south. Bluff had been settled in 1879-80 by the famous Hole-in-the-Rock Mormon Mission group who crossed the Colorado east of Escalante, Utah, trekked across the canyon country south of the Abajos, and settled on the benches along the San Juan River (Miller, 1959) where some of their original sandstone masonry houses can still be seen.

Two other settlements started about this same time, 1879, as ranches grew into small communities (Cortes, ed., 1972). One of these was called Castleton, and its location at the head of Castle Valley at the foot of the LaSals is marked today by several homes and ranches. The other was Richardson, started by a Professor Richardson in what is known as Professor Valley today. The settlement may have had two parts, one on the Colorado River where boats coming downstream from Dewey could land, and the other where Richardson had his store, ranch, and orchard. Richardson has completely disappeared except for a few rock foundations and a dug well on the western end of the Bates Wilson ranch on Professor Creek. The settlement at Dewey, where the bridge crosses the Colorado River, may have started about this same time, but nothing definite is known about it.

Of all the early settlements only Moab has maintained any vigor. Bluff waxes and wanes, and LaSal has mostly maintained its ranching orientation. The others have died as their need diminished with road building and collapse of associated ventures.

As a post script, the town of Monticello was settled by Mormon colonists out of the San Juan colony (Bluff) in 1888 and somewhat afterward Grayson, later called Blanding, was settled in the same manner after one false start, about 1903 (Perkins, Neilson, and Jones, 1957, p. 138).

Indian History to the 1920's

The Utes: Except for a small group of Southern Paiutes living along the San Juan River and indications of some use of the Elk Ridge country by the Navajos starting some 200 years ago (Correll, 1971) Southeastern Utah has been Ute land for the last 600 years. The group or band most commonly associated with the area is the Weminuch, now mostly located on the Ute Mountain reservation at Towaoc, Colorado. It should be noted, however, that Ute society was mobile and at different times and in different places various groups were called different names and individuals may have belonged to several bands during their life.

Ute history is difficult to assess because of their nomadism. Schroeder (1953, p. 10) believes the Utes were already in Western Colorado by 1150 A.D. as part of a broad-based movement of Shoshonean speaking peoples eastward through the Great Basin replacing earlier cultures. Ute sites are recognizable through the small side-notched projectile points, brown micaceous pottery, and slab metates with one-handed manos (Buckles, 1968; see also Archaeology Section of this paper).

Ute culture was based on a nomadism that followed the bounties of nature. As roots, nuts, grasses, and berries became ripe in the various ecological zones, the Utes moved to these areas to harvest them. They also hunted and fished. This meant going to the higher elevations as spring and summer progressed and returning to the valleys and desert in the fall and winter. Homes were mostly brush shelters, skin tipis after acquiring the horse, and rock shelters. Much of the material culture was perishable, such as basketry, leather work, and other vegetable material. Clothing was of skins with occasional rabbit fur blankets. Some of the Utes were farming in the middle 1800's, for Mormon pioneers in the Spanish Valley area report dibble stick farming of corn, melons, and squash in the valley in 1855 (Tanner, 1937, p. 19). The Utes had contact with Indians further south and undoubtedly learned from them, as this is Pueblo style farming.

The Utes received the horse from New Mexico in the 18th century, for Dominguez and Escalante report the Utes as mounted for the most part when they encountered them. The Utes had fewer and fewer horses the further one got from New Mexico.

Only a few specific sites are identified as having been used by the Utes. Billings (1855) mentions a place at the head of Spanish Valley called "Quit-sub-soc-its" or "Saint Johns," which was the name of a local chief, and apparently where his camp was when the missionaries went south to visit the Navajo. Another encampment is mentioned by explorers as being located on the west side of the Green River at Green River Crossing.

By the middle of the 19th century, by all reports, the Utes were quite mobile and thought nothing of going from Utah to California or from Utah to New Mexico. While the missionaries were in Spanish Valley, Arropeen, brother of Wakara, passed through on his way from the Utah Lake country on a trading expedition to the Navajos below the San Juan River, and on his return brought some of the Navajos with him, for they, too, were accustomed to coming to the LaSal Mountain area to trade (Billings, 1855). Most of the trails used by the Spanish and others through Southeastern Utah were undoubtedly old Indian trails, for it was common to obtain an Indian guide to enter new or unknown country. The Elk Mountain missionaries obtained a guide when they went south to visit the Navajo, and Pettit says his name was Shinobby (Pettit, 1855, p. 4). A principal Indian trail from the Abajos to the southeast is mentioned in the Elk Mountain Mission reports, with another main trail running from the Abajos to the LaSals (Billings, 1855, p. 14).

As the 19th century wore on, the Utes were pressured more and more onto reservations. Some continued to leave the reservations periodically to cause troubles for the whites. By the last quarter of the 19th century, as a result of mixing of various bands on the reservation, it was difficult for the settlers to identify the groups causing the problems, so most of them were referred to as "renegade Indians."

Two local Moab boys were shot by some of these itinerant types along the old Indian (later mail) trail that runs along the west flank of the LaSals between the head of Pack Creek and present-day LaSal. The year was 1880, the boys Ervin and Joe Wilson, and the Indians were apparently angered because they had had some horses taken from them by whites two days before. The Wilsons both survived after a harrowing experience, but Joe lost an eye. The ambush took place at the head of Pack Creek (Tanner, 1976, pp. 107-110).

Pinhook Battle, 1881: A year later, in 1881, a group of Indians killed a rancher or two near Dolores, Colorado. A posse was formed, perhaps two for the record is rife with rumors, in Colorado and after following the Indians around the south end of the Agajos, over Elk Ridge, and up Indian Creek the posse finally caught up with them at the head of Castle Valley in a little branch of the valley called Pinhook, at the foot of Harpole Mesa in the LaSals. The Indians managed to ambush several of the posse and kill them. The spot in the bottom of a shallow stream bed is marked by a monument to the posse's dead (Tanner, 1976, Chapter 9 gives all the versions).

Soldier's Crossing, 1884: Another skirmish with the Indians took place in 1884 and again the Indians came off best. The incident started near Verdure when a rancher tried to take a horse from an Indian. The rancher killed the Indian; the rest of the Indians took to the mountains,

destroying property on the way. A week later, after the troops from Fort Lewis, Colorado, had gotten there to help the cowboys, the chase was resumed. It finally led to Soldier's Crossing on the White Canyon where two brash cowboys tried to take the Indians, who were well-entrenched at the top of a rough trail. They paid with their lives, and the ardor for more Indian blood cooled (Walker, 1966).

Reservation Rumor, 1894: Many of the Indians who had formerly lived in Southwestern Utah always had hoped to return. In 1894 a bill was part way through Congress to make southeast Utah an Indian reservation. The rumor apparently got out - some blame the Ignacio Indian agent - among the Indians and hundreds of them with their livestock took off for Utah. Dry Valley was especially overrun. In a meeting early in 1895 the Indians were finally convinced to go back to the reservation and later that year the reservation bill was defeated (Perkins, Nielson, and Jones, 1957, pp. 214-218).

Reservations: Although there continued to be some Indian/White conflicts in 1915 and in 1922-23, called the Posey Wars, most of the problems were solved by the beginning of the 20th century (Perkins, Nielson, and Jones, 1968, p. 227). Two small settlements of Indians on reservations now exist in Allen Canyon west of Blanding and at White Mesa south of Blanding. Today, Indians of various tribes live in most of the small towns in southeastern Utah, working at various tasks in mining and industry, some involved in education, welfare, and other government employment.

Economic, Social, Commercial, and Development History, 1840's to 1920's.

Livestock Industry: Settlement in Southeastern Utah was preceded by small stockmen bringing cattle into and through the area in search of grazing that would sustain their herds. Many of them had been all over the West seeking their fortune in one manner or another. Most of them came out of central Utah or western Colorado. A drought in the Great Basin and high prices in Colorado due to the mining boom brought about the movement into Grand and San Juan Counties in 1879 and 1880. Men like the Taylors, Preston Nutter, "Spud" Hudson, and the McCartys date from this period (Price and Darby, 1964; Tanner, 1976).

About the same time many large cattle companies began to dominate the scene, replacing the small ranchers by purchase and pressure. The Carlisles, an English financed outfit (Walker, 1964), were first headquartered at Paiute Spring on the Old Spanish Trail. They later moved to the ranch headquarters which still remain in fair condition, some six



Figure 21. Supply pack train crossing Colorado River in winter.

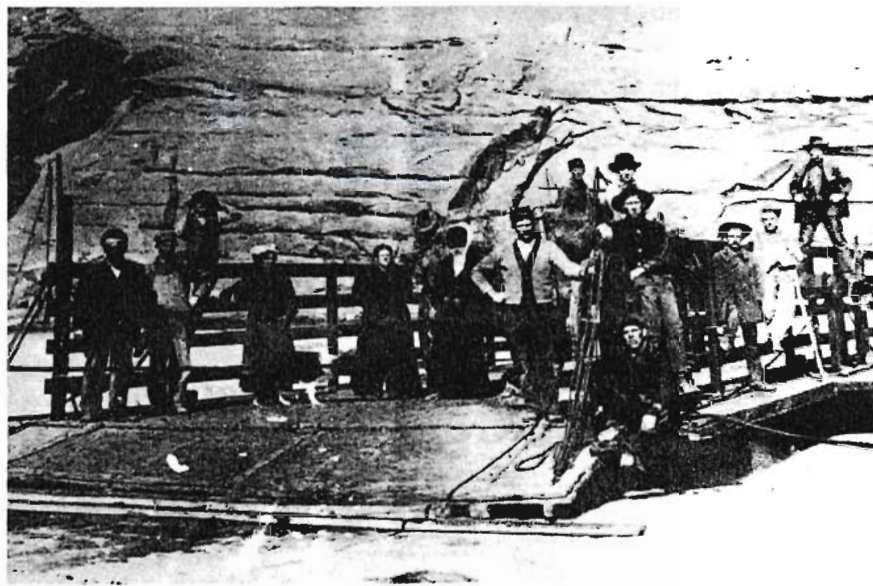


Figure 22. Moab ferry on Colorado River with passengers.

miles north of Monticello, just north of the present airport (Walker, 1964, p. 272). The Carlisles' range was Dry Valley and the north and east drainages of the Abajos. The L C (Lacy) Cattle Company ranged south down Montezuma Creek. Preston Nutter dominated the range north of the Colorado River into the Book Cliffs. The Pittsburg Cattle Company claimed the area around LaSal. To give an idea of the size of some of these organizations, Peterson (1975, p. 87) reports that the Carlisles in 1885 branded 5,300 calves and from Dry Valley alone rounded up a herd of 10,000 head. Control of the range was maintained by appropriating the water sources.

Later in the century, however, the great cattle companies were slowly replaced by Mormon cattlemen. The Bluff Cattle Pool was organized by F. A. Hammond to keep the Bluff settlers' range on the south slopes of the Abajos and in the Elk Ridge-White Canyon country from further entry by others, and to rid Southeastern Utah of the large cattle companies (Peterson, 1975, pp. 92-100). The Bluff Pool was a success in that it did stimulate many of the Mormon cattlemen to buy out the large "foreign" cattle companies. By the early 1900's the dominant ranchers, some of them with holdings as large or larger than the ones the Bluff Pool was worried about, were the Taylor Brothers, Redds, Somervilles, Scorup Brothers, and others. The Bluff Pool itself did not last until the turn of the century.

The Scorup Brothers story is an interesting one because it involves a difficult stretch of range land and a typical method of building a herd. Moving into the area between the San Juan and the Colorado Rivers with a long rope, a running iron, and a tenacity and stamina hardly equalled anywhere, Al Scorup and his brother Jim slowly staked out their claim to the region and built a ranching enterprise that was one of the largest in the nation (Lavender, 1944). At his death, Al Scorup controlled an empire half as large as the state of Rhode Island, stretching from Indian Creek to the Colorado River to the San Juan River.

Cattle dominated the livestock industry in the early days, but by the 1890's sheep had entered the picture and had become big business. The problems usually associated with sheep versus cattle in the West did not occur in southeastern Utah. First of all, the Navajos to the south of Bluff already had sheep, and wool was part of the economy. Secondly, stronger prices for sheep in the 1890's convinced the Mormon stockmen that there was nothing wrong with sheep.

Mining and Milling: About 1892 gold potential began to attract prospectors to the Abajo Mountains (Perkins, Nielson, and Jones, 1957, p. 269) and probably about the same time to the LaSals. The editor of the newly created newspaper in Moab, partly to stir up outside interest, wrote about placer gold in the LaSals in 1896 (Tanner, 1976, p. 204). Miners had settlements in the LaSals at Miners Basin, Batchelor Basin, Beaver Basin, Gold Basin, and several other locations where shafts and drifts

were made in attempts to reach the mother lode. At the same time, placer gold was sought along Placer Creek, Bald Mesa, and Wilson Mesa; however, the lack of water precluded success (Hunt, 1958, p. 355). In the Abajos the claims were filed at the head of Dixon Gulch and the head of Johnson Creek. A mill was erected in Gold Queen Gulch and a stamp mill at Camp Jackson, but there was not enough gold to keep them going (Perkins, Nielson, and Jones, 1957, pp. 269-270).

Placer gold was discovered all along the Colorado and San Juan Rivers about the same time, with much activity on the San Juan and in Glen Canyon. The gold was too fine to remove from the gravels, and the boom was short-lived.

Copper was found in Lisbon Valley at the Big Indian location. A carload of high-grade copper ore was shipped from Lisbon Valley to a Salt Lake City smelter as early as 1894. A 300-ton mill was erected in the Big Indian district in 1916, but later closed because the machinery and process was not compatible with the Big Indian ore (Perkins, Nielson, and Jones, 1957, p. 270).

Uranium was found early in the mining history of the area, but until the atomic bomb was developed there was not much to do with it except to use it as a coloring matter for ceramics or to extract the radium associated with it. Vanadium also went hand-in-hand with uranium in the ores of the Colorado Plateau. When first found in 1879 uranium apparently was not even recognized. Active exploitation of carnotite began in the spring of 1898 when Gordon Kimball, Ouray, Colorado, obtained a lease on the Copper Prince claims in Western Colorado (Shumway, 1970, p. 5). The Rajah mine in Sinbad Valley just east of the Utah line in Colorado was located in 1898 and high-grade ore was packed from this mine on mule back to the railhead (Balsley, personal communication, 1970). About this same time ore from the Cashin Mine on LaSal Creek was given to two French chemists associated with the Curies, and they established a mill on the Dolores River to process uranium ores from the LaSal Creek mining district (Tanner, 1976, p. 212). World War I produced a demand for vanadium and stimulated activities in the LaSal mining district. A similar demand boosted production in the mines just prior to World War II (Carter and Gualtieri, 1965, pp. 38-39).

Another mine that contributed to the pre-World War I interest in uranium ore for its radium content was the Blue Goose, at the foot of Brumley Ridge on Pack Creek. The famed Yellow Circle mine in Kane Springs Canyon was located at about the same time (Balsley, personal communication, 1970). A deposit at Richardson was discovered in 1898 and found to contain high-grade vanadium and uranium ores. Small shipments were made for experimental purposes. In 1902 some 500 pounds of ore were shipped by a Mr. Lofftus from the Jesse D. No. 1 and the Jesse D. No. 2 (Sorenson, 1963, pp. 282-283).

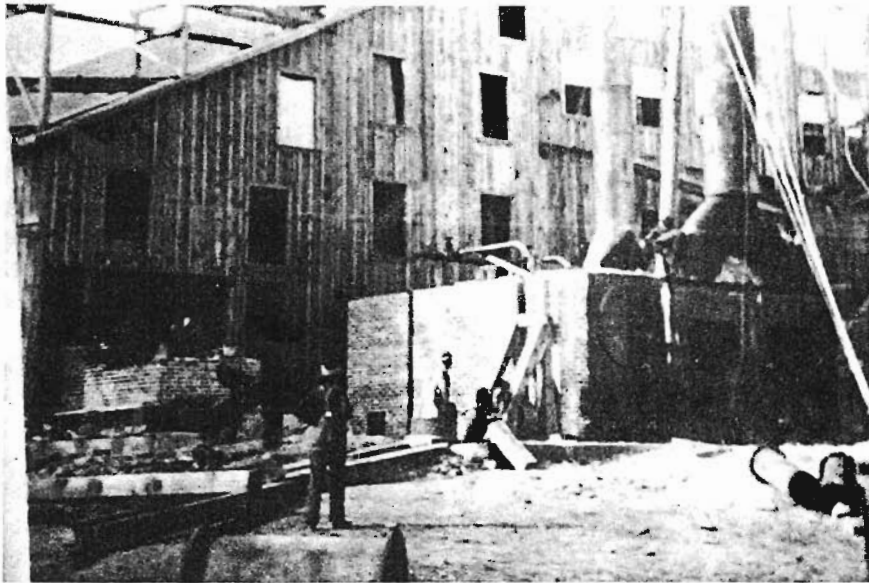


Figure 23. Big Indian Mill.



Figure 24. Moab snow storm.

Other early finds are reported from south of the Richardson locality, at Mill Creek, around the Grand (Colorado) River north of Moab, at Court House (stage stop), Big Canyon in Lisbon Valley, and 17 miles southeast of Moab Near Park (Pack?) Creek (Sorenson, 1963, pp. 283-284).

In 1918 almost a million dollars worth of uranium and vanadium ores were produced in the LaSal mining district and vicinity and the Green River mining district. By 1920 it was 2.5 million, with 32 grams of radium being produced from it. United States Metal Reduction Company constructed a plant inside Utah near Gateway, Colorado, in 1918. The depression in 1921-22 and finds of high-grade foreign ores sounded the death knell of the industry in 1923, until World War II's need for vanadium once more opened the mines to production (Sorenson, 1963, pp. 286-289). However, the International Vanadium Company was operating a mill in Dry Valley as late as 1930, according to the local paper (Times Independent, October 16, 1930).

Oil and gas have long been known in the area. The first Utah oil well was drilled by Bamberger and Millis in 1891 near the town of Elgin, Grand County (Lupton, 1914). But it was in 1948 when the first commercial well was finally brought in (Harline, 1963, p. 292). Three other wells were drilled near Elgin and in the period 1910-1914 there was a revival of interest in the "Green River Desert" and several wells were drilled to 1800 feet with no results (Harline, 1963, p. 293). The Mexican Hat-San Juan oil field was drilled in 1908-1912, starting out with a gusher and ending up with little but memories as it never developed any quantity of oil (Harline, 1963, pp. 295-296).

Drilling began in the vicinity of Crescent Junction in 1920. Traces of oil and gas were encountered in the wells of the Crescent-Eagle Oil Company and the Crescent Syndicate (Tanner, 1976, p. 224). A well was sunk in Moab Valley by the Western Allies-Big Six Company in 1920 to a depth of 2450 feet and yielded oil and gas evidence. Later that year the Big Six Company located another well on the west side of the Colorado River in the Moab Valley (Tanner, 1976, p. 224).

The Frank Shafer No. 1 well, located on the west side of the Colorado River on the Cane Creek anticline just below the present Potash Mill, gave the oil patchers a real thrill in 1925 as it blew in with oil and gas at 2000 feet and caught fire, burning the wooden rig (Harline, 1963, p. 297). Later attempts on several occasions were made to redrill with no success until the development of the potash mine in the vicinity in 1961 effectively locked out any more drilling for oil and gas there.

In October 1924, two months before the Frank Shafer No. 1 fire, a similar occurrence took place ten miles northwest of Cisco. At 1960 feet an immense flow of gas was encountered in the Utah Oil Refining Company's

well which was ignited by lightning and provided spectators with a tremendous blaze (Tanner, 1976, p. 224). The gas field at Cisco was used to run a carbon black plant by the Crystal Carbon Company in 1927 (Cortes, 1972, p. 151).

Coal is probably one of the more plentiful materials in the region. Only one major exploitation, that at Sego prior to World War I, has taken place (Clark, 1914). Sego, just north of Thompson, Utah, provided coal for the railroad (D&RGW), and died with the advent of diesel-fired railroad engines.

Potash is another plentiful mineral, known first in the region from oil well cores from the area south of Thompson. It received little attention until after World War II.

Farming: The first group to enter and settle Moab Valley, the Elk Mountain Mission, established fields with an irrigation system. The Utes, who were already living in the valley, had some small fields of corn, melons, and squash. When the settlers of the late 1800's came into the valley, they too found people farming. The two men living in the old fort had a garden.

The valley was probably most famous for its fruit. Over the years the orchards produced fine apples, peaches, pears, and grapes. Prizes were won at fairs from Boise to Chicago (Tanner, 1976, pp. 191-192). Irrigation farming also produced good crops of corn, watermelons, and feed for milk cows. Unfortunately, water supplies, the transportation system, and the remoteness from a ready market kept the industry from full development. Much of the farming in the area was for local and home consumption.

Water was a necessity in developing the farming potential of the Moab and Spanish Valleys. Most of the irrigation systems remained small in spite of plans and dreams to make the valley an agricultural area. In reality, the dream has yet to materialize.

Most of the ranches in the region developed local water to raise hay for the winter use of their stock. The Colorado River could provide other water for the Moab area, but it is little used, and the prime industries of the region today are mining, ranching, and tourism, the last a recent development.

Monticello was founded as a Mormon colony, and in the fashion typical throughout the Mormon West, the settlers lived in town and farmed the surrounding irrigated lands. An irrigation company, the Blue Mountain Irrigation and Manufacturing Company, managed to acquire rights to water from the north and south forks of Montezuma Creek formerly used by local

ranchers. Because of the elevation and climate, grain crops were mostly grown, and dairy herds established. Some attempt at growing fruit was made, but mostly as part of the individual subsistence garden complex (Perkins, Nielson, and Jones, 1957, p. 114).

East of Monticello dry farming was the way of life. As a result of the establishment of an experimental farm in 1903 by the State Legislature, dry farming received a boost in the area (Perkins, Nielson, and Jones, 1957, p. 194). A small land rush was triggered, and people came from all over to homestead the dry farms, especially in the 1910 to 1920 era. At first mostly wheat and oats were grown, but in later years the pinto bean became one of the staples.

The farms were somewhat isolated and social life centered on the cross-road stores and schools, so that on the map there are several small "towns" located which were simply crossroad post offices.

Lumbering: Local lumbering in the Abajos and LaSals had begun well before 1900. The early timbering operations were limited and primitive. The first mill using timber from the LaSals, the Mont Hill sawmill, was set up northwest of Paradox Valley in 1881 by T. W. Branson. The first in the Abajos was at Bulldog Canyon in 1887, set up by C. R. Christensen and Willard Butt. Four other mills were operated in the LaSals before 1900 (Peterson, 1975, p. 119). Only small mills were used on the LaSal forest with no more than a half-dozen men. Normal yearly sales for pre-World War I were about a half-million board feet.

As with farming, the distance from market, poor transportation, etc., precluded any great impact on the forest resources or the local economy. Local population was the major user and its smallness did not cause serious problems in timber usage (Peterson, 1975, pp. 119 and 208-216).

✓ Transportation (Railroads, Roads) and Communications: Early roads in the area tended to follow previously established trails until improvements in road building equipment and tax money allowed rerouting. Undoubtedly the basis for the road system was set by the Indians of the region in their nomadic wanderings from place to place. The Old Spanish Trail route was, as were many of the routes, determined by the landforms of the region. The easiest routes were picked, avoiding narrow canyons and sandy areas. the Old Spanish Trail was the principal route used by all through Southeastern Utah and to some extent is still followed today. Supplementing the Old Spanish Trail was the route that led down Dry Valley past present-day Monticello and down Recapture Creek to the San Juan River, first pioneered by the Elk Mountain Mission people on their way to visit the Navajos. This route, later also used by Macomb, was most likely an old Indian trail.

✓ The Elk Mountain Mission people did some of the first road building in the region in 1855 when they made the dugway around the "Jump" in Moab Canyon for their wagons (Huntington, 1855). They followed the route of the Old Spanish Trail from the Green River crossing, coming past Brink Spring, Upper Courthouse Spring, down a sandy hill at the mouth of Corral Canyon, crossing Seven Mile Wash, and following the bed of the stream in Moab Canyon to the river crossing. (Plats of this same stretch of country dated 1917 (Grand County Courthouse) show an old road following this route which is presumably the old wagon road from Green River to Moab. With the advent of the railroad another branch of the road was established, splitting off just north of Upper Courthouse Spring and heading across Klondyke Flats to get around the north end of Salt Valley and head for the railroad station at Thompson.

South out of Spanish Valley some of the first road building seems to have been accomplished by the exploring party for the Hole-in-the-Rock colonizing group that settled Bluff. After looking over the potential of the Bluff Bench the exploring party headed north with their wagons for the Moab crossing of the Colorado, "preceded by a few scouts and road builders" (Miller, 1959, p. 29). Just north of Kane Springs Turn-out there are presently three roads in the canyon; one of them, on the east side, is very primitive and may well represent a road started by the Hole-in-the-Rock exploring group. At one time the road south from Moab went on the east side of Looking Glass Rock. As early as 1855 Billings reports passing that way on a trip to visit the Navajos (Billings, 1855, p. 14), and as late as about 1914 it was the half-way point on the road from Moab to Monticello, a two day trip (Allred, 1972, p. 11). Allred also reports that after 1914 the route went "through Upper Cane Springs, LaSal, and Big Inidan, and merged with the old road opposite Church Rock near Peters Hill" (Allred, 1972, p. 11). The fare at that time was \$5.00 for the one-way trip to Monticello from Moab, or \$7.00 to \$8.00 for the round trip in a Studebaker buggy.

Another early road was built from LaSal (New LaSal) through Lisbon Valley and up Three Step Hill via a remnant of the Old Spanish Trail and across the Great Sage Plain to Mancos, Colorado. This was built or improved for wagons by Niels Olson about 1879, shortly after LaSal was settled (Perkins, Nielson, and Jones, 1957, p. 180).

The Colorado River Canyon was an effective barrier to travel through much of the country. The LaSal Mountain miners and the settlers in Castle and Professor Valleys got there, at first, by floating down the Colorado from about where the Dewey bridge is now located. A road of some difficulty eventually connected Castle Valley with Moab. This was apparently the Sand Flat road which brought the traveler to the head of Castle Valley. This also provided access to the ranches and mines on the west side of the LaSal Mountains (Cortes, 1972, p. 127). In 1907

a toll road was under construction up the Colorado River from the Castle Valley area under the supervision of Samuel King. A rock along the side of the road at the north end of Richardson Amphitheater with the words "King Toll Road" attests to that endeavor. The record is not clear, but apparently the road from Moab to Castle Valley up the Colorado River Canyon was also part of the King Toll Road (Cortes, 1972, pp. 127-128).

✓ Ferries were established at the Moab crossing of the Colorado River by Norman Taylor about 1884 (Tanner, 1976, p. 103) and at Dewey by Samuel King about 1896 (Peterson, 1975, p. 222). Later they were replaced by bridges, the Moab bridge in 1911/12, and the Dewey bridge a one-lane, cable suspension type still in use, in 1916 (Cortes, 1972, p. 144). The Moab bridge was replaced in the 1950's.

Some sporadic use was also made of the Colorado River itself as a transportation route. Mostly this centered on drilling activities down the Colorado from Moab (Ekker, 1964) with unsuccessful attempts at intercity transportation between Green River and Moab (Tanner, 1976, pp. 230-231).

Mail service came early, with the establishment of small post offices in all of the settlements of any size, and many of them were short-lived. One of the longest mail routes in the country was established about 1878 from Salina, Utah to Ouray, Colorado (Perkins, Nielson, and Jones, 1957, p. 175). The carrier had two horses, one for himself and one for his supplies. The trip was 350 miles one way, and sometimes took up to a month to make the round trip. The route included Plainfield and LaSal, and later towns in the region were tied into this basic route. The trail between Plainfield, later Moab, and LaSal took the rider the short way up to the head of Pack Creek and along the flank of the mountain to LaSal.

The Denver and Rio Grande, later to be the Denver and Rio Grande Western, pioneered a narrow guage railroad across Gunnison's route along the Book Cliffs in 1883 (Athearn, 1962). The narrow guage was replaced in 1890 by a standard guage, and later the old narrow guage road bed served as one of the first designated automobile roads across this part of Utah (National Midland Trail Association, 1916). The railroad, even though it never got closer than thirty miles from Moab until the 1960's, was probably the most important factor in the development of southeastern Utah until the era of paved roads.

Telephone service began about 1900. The first line in Grand County was from the railroad at Thompson to Moab. In 1903 the LaSal Mountain Telephone and Electric Company was organized, and a line was built from Miners Basin to Castleton to Moab, where an exchange tied the line into the one to Thompson. A line was constructed to Monticello in 1908, using native juniper for poles and taking two years to complete. The Midland Telephone Company was organized in 1915 by J. N. Corbin to

build a line from Mack, Colorado, to Green River, Utah. When the line got to Cisco the owners of the LaSal Mountain Telephone Company sold out to Corbin (Tanner, 1976, p. 245).

The Grand Valley Times was the pioneer newspaper in Moab, founded by J. N. Corbin in 1896. In 1917-1918 a second newspaper appeared, the Moab Independent. It was short-lived, as it was bought out and incorporated with the Grand valley Times, to be known till now as the Times-Independent (Tanner, 1976, pp. 241-242). In San Juan County the San Juan Record was founded as the weekly paper. It began publishing in Moab in 1915 and moved to Monticello in 1918 (Perkins, Nielson, and Jones, 1957, p. 124).

Commercial and Industrial Settlement and Development: Most of the commercial activities in the region took place in the two towns of Moab and Monticello. They were geared to serving the rancher and miner, and the fortunes and types of commercial activities fluctuated with the needs and fortunes of these people (Riis, 1937). While the need and extent of the ranching development quickly stabilized to meet the available range, the mining industries' requirements varied greatly through time, type, and distance from civilization. In addition to the exploration phase of mining there was a low key but steady flow of "expeditions" to this wild and colorful country to assess the scientific values, particularly the geological values (Cross, 1894; Gould, 1925; Woodruff, 1912), because of the "picture book" geology present, but also archaeological and biological values (Cummings, 1910; Stanford, 1931; Tanner and Hayward, 1934). Added to this was a fledgling tourist business, some of it associated with the desire to "conquer" the Colorado River (Belknap and Belknap, 1974, pp. 6-9).

Both Monticello and Moab provided the cowboy and the miner with his basic needs; and banks, mercantile stores, blacksmiths, saloons, churches, freight lines, schools, barber, doctor and dentist (sometimes the same person), post office, lawyers (both towns are county seats), and related services of varying degrees of usefulness were available (Riis, 1932). All of these were provided by some 1250 people in Moab and a fewer number in Monticello in the early 1940's. The smaller communities, LaSal, Castleton, and others, only provided the barest necessities like mercantile stores, saloons, and post offices (Cortes, 1972, pp. 116-159).

Federal and State Government in the West

The presence of the Federal Government has always been felt in southeastern Utah. General Land Office surveyors were surveying township lines concurrent with settlement in the late 1800's. Ferdinand Dickert and R.J. Reeves were both surveying the public lands in 1878, and by

1800 at least four land surveyors were necessary to locate and document where land ownership was. The General Land Office was established in the early 1800's to get the public lands into the hands of the people.

Another Federal agency to enter the scene early and somewhat unobtrusively was the United States Geological Survey. As early as 1894 (Cross, 1894) survey scientists were reporting on the geologic and mineral potential of Southeastern Utah. By the end of the second decade of the twentieth century they had studied most of the major minerals, including gas and oil, of the area and published their findings. Antecedents of the United States Geological Survey had been in the region even earlier, as reports of the United States Geological and Geographical Surveys show (Hayden, 1876 and 1878).

The Forest Service, under the Department of Agriculture, was established in 1905. It had its roots in the earlier Forest Reserve System established in 1891 under the General Land Office. The LaSal Mountains were set aside from the public lands as a Forest Reserve in January 1906, and a year later the Abajos received like treatment (Peterson, 1975, p. 124). In 1908 administration of the LaSal and Monticello (Abajo) forests were combined under acting supervisor John Riis. Headquarters for the LaSal Forest had been established at Castleton in 1906, but a short time later it was moved to Moab, where it was located over the Dr. J. W. Williams Drug Store on Main Street. Peterson (1975, pp. 125-147) details the problems the Forest Rangers had in Southeastern Utah, selling the forest conservation concept and dealing with the local populace. In 1949 the LaSal Forest was added to the Manti and called Manti National Forest until the next year when public sentiment forced the title change to Manti-LaSal National Forest with headquarters in Price (Peterson, 1975, p. 242).

The Taylor Grazing Act of 1934 established the Grazing Service and two grazing districts on the public lands of southeastern Utah. The Act was brought about by the need to stabilize the livestock industry and to limit in some way the over-use and non-local use of the open range. Local advisory boards were established and grazing permits issued. District 6 was established in Monticello in 1935 and later split to form District 9 in 1939 (Perkins, Nielson, and Jones, 1968, pp. 283-289). In 1946 the Grazing Service and the General Land Office were combined to make the Bureau of Land Management.

After the Antiquities Act of 1906 was passed many national monuments were established. Until the National Park Service was established in 1916 most of these were run by the General Land Office. This was the case upon the setting aside of Natural Bridges National Monument just south of the Bears Ears in 1908. The bridges were surveyed out of the public domain in 1908 and 1909 by W. B. Douglas (Cummings Publication Council, 1959). Little happened in the way of development at Natural Bridges because of the isolation and lack of roads to the Monument until the 1960's when roads and buildings were constructed.

Arches National Monument, just across the Colorado River from Moab, was established in 1929 and is today a full-fledged National Park. Although Arches had much support from the community, major developments did not come for thirty years (Pierson, 1960d). Unlike Natural Bridges, which was manned only in the summer months until the 1960's, Arches had a series of resident rangers and superintendents (custodians).

One interesting facet of National Park Service history in the region is the Escalante National Monument controversy (1935-40). In brief, what is now Glen Canyon National Recreation Area and the Canyonlands National Park were proposed by the Department of the Interior as a large national monument. State and local opposition and the war put the skids to the idea (Richardson, 1965).

During the 1930's a series of Federally operated Civilian Conservation Corps camps filled with young men, mostly from outside the area, were established in the region. The camps were run by the Army, but the various Federal agencies who had work projects supervised the actual projects. Local men acted as the unit leaders or straw bosses. Camps were located in Dry Valley at Hook and Ladder Draw, Dalton Well (Baldrige, 1971), at the site of the present Atlas Minerals tailings pond, and Indian Creek. Fly camps, temporary affairs, were also established near the work at various times. The work that these young people of the Great Depression did is still pointed out in places like Spanish Valley, where sheet erosion controls continue doing their job.

Early in the 20th century the Bureau of Reclamation had already drilled and studied most of the possible sites for dams on the Colorado River and had withdrawn four sites from the public domain. Some of the dam sites were at the confluence of the Green and Colorado, near Negro Bill Canyon, and at Westwater Canyon.

The State of Utah was mostly represented locally prior to 1940 by the State Highway Department and the State Fish and Game Department, now called the Department of Transportation and the Utah Division of Wildlife Resources. Effective law enforcement of game violators by the State and Federal agents did not come about until after World War I (Peterson, 1975, pp. 193-205).

Recent History Since 1940

Two things have contributed greatly to the history of the region since 1940. One is the availability of four-wheel drive vehicles, the other is the uranium boom of the 1950's. The uranium boom was triggered in 1952 by the discovery of the Mi Vida mine in Big Indian Canyon by Charlie Steen. This brought hordes of prospectors to Moab and Monticello, and other discoveries resulted in the building of a mill at Moab in 1956.

Coupled with the uranium boom was a constant search for oil and gas. Both the uranium prospector and the oil patcher developed crude roads that could be traversed with four-wheel drive vehicles. This, in turn, developed a recreation exploration of previously inaccessible areas. Eventually Canyonlands National Park was established from some of this land in 1964, and Arches National Monument was enlarged and made a National Park in 1971. Nearby Glen Canyon National Recreation Area was created when the Glen Canyon was dammed in 1963. Dead Horse Point State Park was established in December, 1959 (State Park Folder, dated May, 1978).

The economy of the area received another boost when a potash mine and mill were developed in 1961 on the Cane Creek anticline south of Moab on the Colorado River. A branch of the Denver and Rio Grande Western Railroad was built from Crescent Junction to the site. An additional uranium mill was built by Rio Algom Corporation in Lisbon Valley in 1972.

Farming activities in the Moab area began to decline as much of the good farm land near town was converted to houses when the population jumped from 1250 to 6000 in the 1950's.

Tourism began to add a healthy input into the economy of the region as roads were improved and knowledge of the area spread nationwide. Tourism associated enterprises such as motels and restaurants multiplied and Government employees moved in to handle the parks. People and businesses involved in four-wheel drive river trips moved into Moab and Monticello.

The Grand County Airport, first located in Spanish Valley, was moved to Klondyke Flats in the late 1950's. The Monticello airport was located some five miles north of town near the old Carlisle ranch.

To minerals, ranching, and tourism must be added another economic factor, particularly in the Moab area, and that is retirees. Many of the newcomers to Spanish Valley and Moab have decided that the area suits them for a retirement locale and they have added to the present building boom.

Lastly, there has been a sporadic use of the area by the movie industry. Locals serve as extras, and much money pours into the communities for a short period of time. The number of movies made is fairly respectable, and they cover the gamut of outdoor types and stars.

Significant Historic Chronology to 1930

- 1763 Pedro Alonzo Posados to Montrose vicinity from Abiquiu.
- 1765 Juan de Rivera to Dolores River and Gunnison River.
- 1775 Pedro Mora, Gregorio Sandoval, and Andres Muniz to Montrose Area.
- 1776 Dominguez and Escalante down Dolores River, across Colorado River to Uintah Basin and Utah Lake.
- 1805 Manuel Mesta, Abiquiu to Utah Lake.
- 1813 Arzé-Garcia party to Utah Lake. Lost trappers, Workman and Spencer, at Moab.
- 1820 Sandoval party to Wasatch Front.
- 1824 Wolfskill, Robidoux, Huddart, Provost on San Juan and Colorado Rivers, trapping.
- 1825 Ashley floats Desolation Canyon. Provost and Leclerc to Grand River basin.
- 1829 Armijo party to California via San Juan River. Yount on Colorado, trapping.
- 1830 Wolfskill opens Old Spanish Trail, New Mexico to California.
- 1837 Pope and Slover emigrants over Spanish Trail, from New Mexico. Robidoux to White River to establish Fort Uintah.
- 1841 Francisco Estevan Vigil caravan over Spanish Trail. Rowland and Workman emigrant party to California over Spanish Trail.
- 1844 Fort Uintah burned and abandoned.
- 1848 Orville C. Pratt over Spanish trail to California. Kit Carson and Lt. Brewerton from California to New Mexico over Spanish Trail.
- 1852 R. S. Dick Wooton to California from Taos on northern branch of Spanish Trail.
- 1853 Expeditions of Beale, Gunnison, and Fremont over northern route of Spanish Trail. Burwell and Ross emigrant party follows Gunnison.

- 1854 W. B. Huntington mission party from central Utah to Elk Mountains (LaSals) and south to San Juan.
- 1855 Billings' Elk Mountain Mission to Moab vicinity and south to San Juan River.
- 1858 Col. W. W. Loring, Camp Floyd, Utah, to Santa Fe.
- 1859 Macomb Expedition, New Mexico to confluence of Green and Grand Rivers.
- 1869 First J. W. Powell expedition down Green and Colorado Rivers.
- 1871 Second J. W. Powell expedition down Green and Colorado Rivers.
- 1874 Crispen Taylor and/or George and Silas Green bring cows to Spanish Valley.
- 1875 Gardner and Gannet party of Hayden Expedition explore LaSals and get ambushed at Peters Hill.
- 1876 W. H. Holmes party of Hayden expedition explores Abajos.
- 1878-1880 Settlement of LaSal and Spanish Valley.
- 1879-1880 Hole-in-the-rock mission to Bluff City.
- 1880 San Juan County formed. Wilson brothers shot on Pack Creek.
- 1881 Pinhook Battle. Moab named. First sawmill in LaSals.
- 1883 Denver and Rio Grande Railroad through Grand County.
- 1884 Soldier's Crossing Indian fight. Ferry established at Moab crossing.
- 1888 Monticello missionized and settled (Blue Mountain Mission).
- 1890 Grand County formed.
- 1891 First oil well drilled at Elgin.
- 1892 Gold rush in LaSals.
- 1896 Dewey ferry established. First paper in southeastern Utah - Grand Valley Times, established by J. N. Corbin.

- 1898 Uranium/vanadium first mined in region.
- 1900 First telephone line, Moab to Thompson.
- 1903 Grayson (Blanding) settled.
- 1906 LaSal Forest Preserve established.
- 1907 Abajo (Monticello) Forest Preserve established.
- 1908 Natural Bridges National Monument established.
- 1912 Moab river crossing bridge built.
- 1916 Dewey Bridge built.
- 1924 Cisco gas field found.
- 1925 Shafer oil well on Colorado River blows in.
- 1929 Arches National Monument established.

CHAPTER 4

Cultural Resource Synthesis

From the onset two things should be kept in mind: 1. There is no evidence that the area under discussion was occupied continuously throughout time; all evidence is to periods of occupancy of varying lengths interspersed by similar periods of no occupancy. 2. The population has always been sparse even during days of heaviest occupation and while we have no good studies of population densities, it probably never was more than that of today, which is a peak population period.

People were located in different situations in the past, however, because of different needs. The controlling population density factors, then as now, were the availability of natural resources such as land, plants and animals, water, and the weather. Mobility through the land was less important in prehistoric times than now because of the mode of travel and the amount of material transported. Stimuli to occupy the land in historic times came from the desire for material wealth and a better, easier life; overcrowded conditions elsewhere; protection of the lifestyle from outsiders; and religious convictions. There is nothing to tell us of prehistoric man's thoughts, but then, man has, in some respects, changed little since prehistoric times so these reasons deserve consideration for prehistoric man also.

Isolation of the area is another constant factor through time. Such terms as "frontier" and "periphery" aptly fit the area until the 1950's when uranium, roads, and tourists permitted the final exploration of the area. The Northern Colorado Plateau area north of the Abajos seems to have been out of the main stream of most of the prehistoric and historic cultures in the West. This is indicated by the anomalous situations that exist at each culture stage where mixtures of cultures appear or a version of the culture appears that does not meet the type description of what is generally recognized as typical of that culture at that time. Although the old term "Northern Periphery" has fallen into disrepute, because of some of purported connotations of a decadent culture or a second-class area, it still has a great deal of validity in describing the area.

A cultural "feathering-out" seems to have taken over in these peripheral areas, for the pressure to conform to cultural norms seems not as strong as it is in the so-called centers of culture. This tends to be true from the prehistoric right on through historic times to the present. Independent conservatism plays a big part in this effect; but it is not totally conservatism that directs what happens to the culture, for innovations are at times present, such as the enigmatic pictographs in the Needles area of Canyonlands National Park, which are local cultural traits found nowhere else and are quite artistically progressive.

The earliest peoples known to have used the area are the Paleo-Indians. Remains of late Pleistocene big-game have been found, animals such as mammoth, bison, sloth, horse, and others. They were hunted afoot by the Paleo-Indians who used spears or darts and stones and sticks to kill them. The various sub-cultures in the Paleo-Indian stage used different diagnostic stone points. In the area are found Clovis points, Folsom points, and a "Yuma" type, each designating use of the area by peoples with similar cultures and now bearing the name of the point type which they used. Technologically the points became smaller and more finely made down through time. Points also reflected a change in the game hunted, as the larger Pleistocene animals died out and smaller ones either evolved or that already existed became the target of Paleo-Indian hunting skills.

Hunting was practiced by using water holes or arroyos as traps or locales in which to surprise and surround the animals. Some of the animals may have been trapped in the water holes by becoming stuck in the mud surrounding them. When bison were hunted toward the end of the Paleo-Indian period, advantage was taken of the bison's predilection to stampede easily, and they were run into arroyos, or off cliffs or embankments to kill them. At times there were many more killed than could be butchered effectively, which may have contributed to the demise and disappearance of some species.

The scene that most researchers depict of the Paleo-Indian lifestyle is of small groups of hunters, constantly following the game animals as well as they could afoot, and periodically camping in the open alongside their kills. As time went on they began to specialize in their campsite needs, developing special campsites for base camps, weapon making, and game processing. As the game disappeared in certain areas they moved on to other areas; and when most of the large animals upon which they depended and which they apparently could kill easiest finally disappeared, they were forced to change their lifestyle. At first they adapted by changing to different and smaller species of big game, but in the end they were forced to change to a different way of life, the way of the Archaic forager, the user of plants and small animals.

One can only wonder at the selection process of testing new and strange plants and small animals for the palate, and at the encyclopedic memory some of the group members must have had to keep it all straight. The difference in remembering one simple thing like the language equivalent of "elephant" from remembering a compendium of natural history must have stimulated the gray matter and contributed to the advancement of the culture and mankind.

The Paleo-Indians, if we can judge by the projectile point evolution through time, were lineal descendants of one another. Whether the foraging peoples were evolved from the last of the Paleo-Indians or came about otherwise is not known, but they are found at the same time in

the area. The foraging stage has been termed Archaic, and it represents a period in man's history when he followed a migratory gathering and hunting pattern in which the gathering began to take on much importance. At the end of the Archaic, experimentation with seed growth became common. It may or may not have been true agriculture, even though corn does appear in some complexes.

The Archaic pattern was one of following the bounties of nature in a pattern that brought the people to the various plants as they became usable to them. New tools in addition to those already known were necessary, and they had to be portable or left at favorite gathering spots. Small manos and slab metates became important, along with digging sticks, sickles, seed beaters, and baskets. The need for storage facilities arose when nature was bountiful enough to provide a surplus. Slab-lined cists located in caves or rock shelters provided that storage until foodstuffs could be moved to the base camp. The crude masonry necessary to keep seeds safe from rodents was most likely the beginning of the idea of masonry construction in the area, which reached its florescence in the later Anasazi periods.

Many of the Archaic habitations were simple campsites located in areas where there were foodstuffs to be gathered. A favorite was dune sand areas where edible grasses such as Indian rice grass grow in profusion if the weather is right. Other favorite campsites were in caves and rock shelters and near water sources out in the desert areas.

The hunting pattern of the Archaic peoples most likely followed that of the earlier Paleo-Indians except that the game they hunted was much smaller and apparently harder to hunt. Hunting tool technology reached its zenith with the Folsom period in late Paleo-Indian times and quickly fell to an adequate but unsophisticated small, and not too well made, point type with which the Archaic peoples hunted their game. Small animals like rabbits became important because of the need for meat and the ease of catching some of them. A system of snaring and trapping was developed by the Archaic peoples to use this resource.

The end of the Archaic stage and the beginning of the Formative stage tend to overlap as new traits reached different groups of Archaic peoples at different times. The new ideas that reached these peoples and eventually changed their lifestyle radically were the development of the bow and arrow to replace the atlatl and darts, pottery for storage and cooking, and the advent of true agriculture. The bow and arrow probably had the least effect on the change to the Formative level, for it fit easily into an ongoing system. Pottery, too, fit into a system of cooking and storage, but it allowed a much wider range of activities and better use of some foods than had previously been possible. It was agriculture that really turned things into a different way of life once the people realized the potential and the number of kinds of agricultural plants available to them.

The changes the Archaic peoples made were not too traumatic for them for they seem to have been headed in that direction naturally. Other Archaic peoples south of the Canyonlands region reached the agricultural stage first because of more optimum conditions and closeness to the source of corn and ideas, and the concept spread northward seemingly without too much difficulty. At first corn was simply added to the list of seed plants utilized and treated much like the rest of them. The late Archaic peoples must have been experimenting with the growing of wild seeds or attempting to domesticate them, probably by spreading excess seeds around in favorite gathering areas to stimulate plant growth. Corn was treated in the same way until better strains, less adapted to that kind of treatment, came along forcing or allowing full-scale agriculture.

Although agriculture does not totally require a sedentary existence, the advantages of settling down in one spot were eventually recognized. The Formative stage in the area is represented by the Anasazi peoples or Pueblos. The very term "pueblo" is Spanish for town or village and describes the way of life, for it was a small town or village existence in a European pattern which the farmer lived in a village and went out to the fields to work them, as opposed to the American homestead system where one received 160 acres of land and was forced by law to live on the farmland.

As the population grew, or land, for one reason or another, went out of production, the farming Anasazis were forced to develop a system of outlying fields and storage facilities on the plateaus and in the canyons. The villages were located in favored spots where there was room enough and water enough, but small farming plots of garden size could be placed in any flat area in a drainage or in a canyon so long as there was sufficient water, either surface or underground, to grow a crop.

At the same time many of the old foraging ways were not forgotten. Campsites scattered over the desert areas attest to use of these resources. For some reason the Anasazi apparently did not utilize the higher mountain areas. It has been suggested that other peoples were already occupying these areas and that the Anasazi were already adapted to a desert foraging system which suited their needs. Or it may be that their use of the mountains is not separately recognizable from the Archaic use of the resources there.

The central villages of the Anasazi in the area never reached the size or complexity of those further south in the high centers of the San Juan and the Chaco drainages. The villages around the Abajo Mountains were more typical of the total pattern than those further north in the valleys of the LaSal Mountain area. In the LaSal Mountain area pit-houses rather than square masonry above-ground dwellings seem to be

the permanent settlements, even into Pueblo II and Pueblo III times. The population in the LaSal Mountain area was much more sparse than in the Abajo Mountain area, although neither area had the concentration of population that one finds further south.

Trade with Fremont agricultural neighbors to the north, on the present evidence, seems to have been a one-way thing, for few Fremont artifacts are found around the Anasazi sites but Anasazi pottery is commonly found in Fremont villages. The one Fremont trait that is apparent among the Anasazi are certain pictograph forms. Many of these are shield-bearing figures while others are large triangular anthropomorphs. The possibility that these pictographs represent Fremont visits to Anasazi is good, and they may have brought with them some of the magic-religious beliefs apparent in the specialized masked cult of the Salt and Horse Canyon area.

The period of the Anasazi in the area was an opportune time but eventually the rainfall pattern changed and agriculture, always a delicately balanced pursuit in the arid climate, became impossible because of the loss of farmland and ground water through an arroyo cutting cycle. It apparently happened to those in the Canyonlands area before it happened to their cultural counterparts to the south. The out-migration of the Anasazis from the area to the south caused problems for their neighbors, and watch towers near water sources and fields in the Hovenweep area and the cliff dwellings of the Mesa Verde could well have been the response to the influx of the displaced northern relatives.

With the exodus of the agricultural peoples, the area was once again most exploitable on an Archaic foraging stage of culture. The exploiters who filled this vacuum were Shoshonean speakers of the greater Numic language family. Specifically, in historic times they were called the Southern Ute, and the group called the Wimonuntci occupied the territory under discussion. It is not known if they came before or after the Anasazi farmers left, but the remains of their campsites among the sand dunes and in caves and rockshelters of the region are common but not numerous.

Reports of archaeological sites used by the Numic peoples in the mountains are few, although we know from historic records that they used the mountains as a hunting area and they are frequently referred to as a mountain people. It may be that only in the historic period after they received the horse were they able to thoroughly use the mountain ecosystems. Alternatively, the brown micaceous pottery, which is diagnostic for identification of most Numic sites in the area, may have only been used in the base camps in the valleys below the mountains. Pottery is also suspected to be a late trait among the area Numics.

The prehistoric Numic way of life was much the same as that of the Archaic peoples who preceded the Anasazi peoples and who may have been ancestral in part to the Numics. The Numic people developed somewhere

in the lower Colorado River region and began to expand from that area sometime before 1100 A.D., moving eastward into the Great Basin and eventually into the Northern Colorado Plateau region and the Rocky Mountains. Just when this movement all took place is conjectural, but arrival may date as early as 1150 A.D.

The horse became part of the Numic culture sometime in the early 18th century, the date varying with the distance from New Mexico, the source of the animals. Not all Numics were fortunate enough to possess the animals. Those that did gained some of their knowledge of horsemanship from the Plains Indians, for a Plains system of horse usage was employed, including such other culture traits as tipis, travois, skin dress, hair styles, and an increased importance placed on hunting and warfare.

In the early 19th century some of the Numic groups, including some of those living in Spanish Valley at the foot of the LaSals, began to practice a Pueblo style agriculture. The new way of life and increased mobility plus pressures from whites on all sides and a shrinking amount of available land led to larger groups being formed. This made for bigger villages and gave them the opportunity for more aggressive behavior. The rivalry between European and non-identifiable Ute peoples was in part based on a direct competition for food and water. The cattle and horses brought in by the Europeans consumed the same foodstuffs that both the Utes and their horses used, i.e., the native grasses which were an important part of Ute economy even in historic times. Further, it was common practice for Europeans to claim and settle upon all the good sources of water to hold the land from entry by other settlers. This sorely disrupted the annual rounds made by the Utes and eventually led to direct conflict.

The final episodes of Ute cultural development are being played out on the reservations of Utah and Colorado where the Indians were placed at the request of the Europeans before the beginning of the 20th century.

European settlement was not accomplished until 1880 in the final throes of the Western Frontier experience. The area was among the last in the region to be settled by Europeans. The aridity, the nearness of several Indian reservations and the use of the area by the Indians, the distance from major European settlements, and the difficulty of movement through most of the rugged canyon country led to the neglect of this area until late in the history of the settlement of the West.

The trigger that stimulated settlement was mining activities in the mountains of southwestern Colorado. Need for beef by the miners, unused range land, and higher beef prices brought cattlemen into the area from both Colorado and Central Utah. The range filled within a short period of a year or two, and most of the ranch settlements of today date from that period. The settlement pattern was to locate a ranch headquarters

at a spring in a good central location on the range desired. Lone camps at other springs were established, and as many cattle as could be brought in or handled were placed on the range before others got there. This established the range rights and there were surprisingly few outright conflicts between ranchers in the area.

In a few years the original ranchers, many of whom were large Eastern or English financed outfits, gave way to local Utah ranchers who had been encouraged by the Mormon Church to get into the cattle business. However, the end result was not small ranches but some even larger than the first ranches in the area, as shrewd business men consolidated various holdings into some of the largest public domain ranches in the country. The ranchers also threw tradition to the winds and many of them brought sheep into the area, with little of the traditional conflict. Sheep were an economic necessity as the condition of the range and other economic factors deteriorated.

Developments under the Taylor Grazing Act in the 1930's, range improvements by the Civilian Conservation Corps, and other factors have kept a fairly healthy ranching economy going in the area. Several of the ranches have remained in the hands of the original owners for over fifty years.

Concurrent with the ranching activities of the area, and partially dependent upon it, was the establishment of a farming community in connection with small villages. Monticello was established as a Mormon colony, and in traditional Mormon fashion the farmers lived in town and did their farming outside the village. Moab had a pattern partially in this vein, but most of the small farms and orchards established in the valley had homesteads on them. A land boom of sorts also took place east of Monticello in the period around World War I when weather conditions and prices led to a homesteading effort. The settlement pattern there was that dictated by the Homestead Act, i.e., 160 acre farms, and the homestead had to be on the farm.

Spanish Valley farms produced a great amount of fruit in the early days as the climatic conditions, irrigation water supply, labor supply, and the market were favorable. A goodly quantity of the the produce of all the farming activities, including ranch and village gardens, was for local consumption or use. Monticello, being at a higher elevation, depended more on dry farming and grain crops in the early days. Pinto beans were added as the local people rediscovered what the Anasazi Indians had known years before, that these high mesas were good bean country when winter moisture was sufficient.

The villages developed into shopping centers where the services which the ranchers, farmers, and miners needed could be obtained. It was a rare individual, however, who did not dabble in more than one economic

pursuit. Most were highly individualistic and able to cope with any technical problem of the times in true and western-rugged-individualistic tradition. This tradition still exists today and is part of the reason many of the people live here.

Mining began early in the area. The Indians had exploited some of the mineral resources, principally the quartziferous rock materials from which they made their tools and the colorful minerals which they used for rock art and body decorations. They did little to diminish the supply, however. The LaSals and the Abajo Mountains both saw mineral activities shortly after the area was settled, and by the beginning of the 20th century most of the minerals in the area, with the exception of potash, had been exploited to a degree. Although over the years there were sporadic, usually short-lived, boom periods, the minerals industry contributed little to the economy until the establishment of uranium mining and milling in the 1950's, and potash mining and milling in the 1960's.

The establishment of uranium and potash mining also marked the first significant increase in population in the area since pioneer days. The population of Moab, the largest town, went from 1,250 to 6,000 in a few years. About half of the recent population growth in the Moab area has been in Spanish Valley. It is estimated today that "metropolitan" Moab has some 8,000 people.

The major transportation routes through and about the area still follow routes established by Spanish traders and the mountain men as they followed their Indian guides over trails long familiar to them. The land form of the area leaves very few alternatives and, even with modern earthmoving machinery, in some places like the Kane Springs area one can see all of the roads that have ever been built in the area. They all lie within a few hundred yards of each other, paralleling, crossing, and intertwining with each other as over the years some improvements in grade and width were made, requiring some minor relocation of new roads.

The Spanish traders and the mountain men were interested in the furs and skins that they could trap or trade for in the area. The trade was short-lived, but many beaver or deer gave their lives for the economy of New Mexico, where most of the traders and trappers had their headquarters.

The Ute Indians provided most of the deer hides, while the mountain men did their own trapping. The area was used in this manner in the late 1700's and early 1800's.

One sad facet of the trade from New Mexico to Utah and beyond was the Indian slave trade. It was important and constant enough for the Mormon settlers to declare it illegal and make attempts to stop it. Spanish

Valley had some part in this trade and the fur trade because the Utes used the area constantly in the early 19th century. Moab was a principal crossing of the Colorado River, if not the only easy one for some distance.

In recent years it has been much easier to travel in the area due to the development of four-wheel drive vehicles during World War II. Ranchers, miners, and recreationists alike have used the sturdy "jeep" for various purposes and to see the country. The result has been a maze of jeep roads and the development of a tourist industry based on two National Parks and some of the most magnificent natural scenery in the world. The development of good rubber rafts during the same war led to greatly increased floating activities on the Colorado River and its rapids in recent years as river running has become an important part of the local tourist business.

Each of these economic groups has its dependents and lifestyle in the area. Crosscutting the economic groups are the religious groups. The original situation of mostly Mormons in the region, with a 50/50 division between Baptists and Mormons in Moab, has been somewhat diluted over the years as new non-Utah people have moved into the area. Although the Mormons still probably represent the largest single group, there is a healthy mixture of many sects and "a few heathens" to form a vital growing population with much interest in their own welfare and way of life.

ARCHAIC SITE COMPILATION

(Emery and Wayne Counties)

Carbon-14 Dates	Site	Contents	Culture
6050 B.C.	Joes Valley Alcove	Bottom of Archaic	
6350-4350 B.C.	Cowboy Cave	Elko Series Points Atlatl Northern Side-Notched Points	PINTO TIMES MOAB COMPLEX TIMES
5250-4550 B.C.	Sudden Shelter	Elko Series Points Pinto Points	TIMES
4250 B.C.	Joes Valley Alcove	Pinto Points	
<hr/>			
2650-1050 B.C.	Sudden Shelter	Gypsum Points	UNCOMPAHGRE?
2570-1440 B.C.	Pint Size Shelter	Elko Corner-notched Points Gypsum Points	PINTO- GYPSIM TIMES
1120 B.C.	Clydes Cavern	?	
150 B.C.	Cowboy Cave	Corn Gypsum Points Atlatl Elko Series Points	LASAL COMPLEX TIMES
<hr/>			
370-450 A.D.	Cowboy Cave	Corn Rose Springs Side- notched Points Arrows	
460 A.D.	Clydes Cavern	Corn Fremont Basketry Anasazi Basketry	UNCOMPAHGRE COMPLEX TIMES?

(After: Jennings, 1975; Winter, 1973 and 1976; Winter and Wylie, 1974; Lindsay and Lund, 1976; Schroedl, 1977a; Berry, 1975)

Table 7

AUTHOR'S NOTE

Bibliography

Important or significant references have been annotated. Many other references were read and these add to the report as they directed the thinking about the project. A comprehensive bibliography accompanies the original manuscript. Copies of this are available through the BLM's Moab District Office for loan.

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