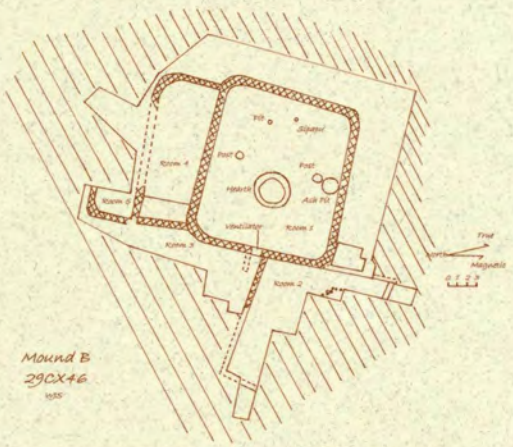
Chase Orchard:
A Poñil Phase Pueblo in the Cimarron District, Northeastern New Mexico

with a

Suggested Reconstruction of Tanoan Origins and Migrations



James A. Gunnerson

with an Appendix on Faunal Remains
by R. George Corner

Memoir 11 of the Oklahoma Anthropological Society
Robert E. Bell Monographs in Anthropology 4
of the
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Jon Denton
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Newcastle, Oklahoma

This volume formatted in InDesign and edited by
Don G. Wyckoff
Memoir Editor, Oklahoma Anthropological Society

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Preface

It is a privilege and pleasure that the Oklahoma Anthropological Society and the Sam Noble Oklahoma Museum of Natural History are able to combine resources to publish this monograph. While it may seem strange that Oklahoma institutions join hands in publishing a volume about a pueblo site in New Mexico, as Editor of the Society's Memoir series I considered it very important that we undertake this project. First, Dr. Gunnerson, the author of this study, is a scholar of Plains archaeology and ethnology who was well respected by Dr. Robert E. Bell, founder of the Oklahoma Anthropological Society. Secondly, and most importantly, when archaeologists working on the Southern Plains recover Puebloan artifacts, they typically think of Pecos Pueblo as a principal node for exchange and contact between residents of the Southern Plains and the Southwest (Baugh and Nelson 1987; Spielmann 1983). Several good reasons exist for this thinking. A.V. Kidder's (1932, 2003) well documented report on the material culture from Pecos include descriptions of distinctive chipped stone implements of raw material (i.e., Alibates flint) common to Southern Plains sources. Likewise, when obsidian or Puebloan pottery sherds are recovered from Southern Plains village sites, the archaeologists usually look to Pecos as the source for these exotic goods. The occasional recovery of pipes stylistically linked to Pecos helps reinforce the idea that this major pueblo played a notable role in Southern Plains natives' contacts with Puebloans, particularly in late prehistoric and protohistoric times.

Yet, as Tim Baugh (Baugh and Nelson 1987) discerned through a study of New Mexico obsidian sources and a group of obsidan artifacts recovered from Oklahoma sites, a series of pueblos north and southwest of Pecos most likely were also involved in varying degrees of trade with Southern Plains natives.

Little known to most Plains archaeologists, and perhaps underappreciated by some Southwesternists, is the fact that small, unstudied or unreported, pueblo sites occur in many of the canyons draining the east slopes of the Southern Rocky Mountains. The Chase Orchard Pueblo site reported herein is one such location. Tucked away near the mouth of Poñil Canyon, this site bears witness to an early (12th century) occupation of people with a material culture somewhat like that at comparable aged sites around present-day Taos. Poñil Creek drains into the Cimarron River of New Mexico, which, in turn, is a tributary to the South Canadian River, the southernmost of the four major rivers with headwaters in the Rocky Mountains and with courses that flow east across the High Plains and, eventually, to rivers draining into the Mississippi. Being in the South Canadian's basin, the little pueblo site at Poñil Canyon's mouth was far closer to Southern Plains villager sites along the North Canadian, Wolf Creek, and the South Canadian than was Pecos. Admittedly, Chase Orchard Pueblo has yielded little evidence for exchange with Southern Plains villagers in any of the above-mentioned drainages, but the site serves to alert us to the likelihood that other, as yet unstudied, small pueblos along the east slope of the Sangre de Cristo mountains may have played important roles in trade and communications between the Southwest and the Southern Plains.

So, we in the Oklahoma Anthropological Society and at the Sam Noble Oklahoma Museum of Natural History deeply appreciate Dr. Gunnerson's making this manuscript available for us to publish. Many of the illustrations are color. It seemed most appropriate to do this because of the beauty of Poñil Country and the intriguing array of pottery, bone, and chipped and ground stone tools recovered from Chase Orchard Pueblo. I thank Warren Lail for his excellent photography and Paul King (SNOMNH, Information Technology) for helping me learn the basics of InDesign.

Don G. Wyckoff
Memoir Editor, O.A.S.

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Acknowledgments

After our having been involved for nearly a half-century with the archaeology of the Cimarron area, it is hard to sort out those individuals who assisted specifically with our investigations of the Chase Orchard Pueblo. I regret any omissions that I have made and I am sure that I have inadvertently left out some individuals. The contributions of a few individuals, however, are very obvious and appreciated. First and foremost is Gretchen Sammis who owns and operates the Chase Ranch, and is the great-granddaughter of the original owner, Stanley Chase. Not only did she give us permission to excavate at the site but also gave us free access to carry out archaeological reconnaissance of the entire ranch. Ms. Sammis and her ranch foreman, Ruby Gobble, also provided invaluable operational support.

Other obvious contributors to the success of our investigations were the members of the field crews, all anthropology students at Northern Illinois University:

1966 Crew	*1973 Crew*
Gary L. Kuhman	Douglas R. Bishop
Charles A. Lieberman	Ruth M.Dye
Rocky T. Mahoney	William J. Sallee
Craig S. Willis	Jean C. Youker
Jan Zabinski	

Several residents of Cimarron were very knowledgeable of the local archaeology and were more than willing to share information with us. One especially was Frank Alpers who had majored in anthropology at the University of New Mexico. He had lived most of his life within easy walking distance of Chase Orchard Pueblo where he made surface collections and reported the results of his survey (Alpers 1963). Other helpful private collectors included William "Bill" Littrell, William "Bill" Hickman, and William "Bill" Brewster.

Les Davis of the CS Ranch, Lee Gorley of the WS Ranch, and the staff of the Philmont Boy Scout Ranch were all most cooperative in many ways, especially in facilitating our gaining permission to carry out reconnaissance and excavation of otherwise inaccessible property.

Several professional archaeologists were supportive and provided helpful advice. Included were: Bertha Dutton, Curtis Schaafsma, Eilene Johnson, Michael Glassow, Ellie Pratt, Carol Condie Stout, Thomas Mathews and Stewart Peckham.

Special recognition is made to the many contributions made by Dr. Dolores "Dee" Gunnerson who served as unsalaried Associate Director of the project from its inception through all subsequent phases, including the preparation of this monograph.

We are especially grateful for and acknowledge with sincere thanks the generous financial support provided by the National Science Foundation under grants GS445, GS877, GS1245 and GS3007 which made this research possible. We are also grateful for the timely administrative support of many individuals at Northern Illinois University.

With regard to the preparation of the manuscript, sincere thanks are due several individuals: Karl Baumgarden of the University of Nebraska-Lincoln provided much needed computer guidance. Daniel Watson, of the University of Nebraska State Museum, provided valuable help in the preparation of maps and diagrams and in overall editorial support. Angie Fox, also of the UN State Museum, produced the detailed illustration for Figure 120. Special acknowledgement is due Warren Lail, of the University of Oklahoma, who took many of the artifact photographs. And finally, most thanks are due to Dr. Don G. Wyckoff who not only took the remaining artifact photographs, but also provided for the final editing of the manuscript. An even greater contribution by Wyckoff was his arranging for its publication by University of Oklahoma Sam Noble Museum of Natural History of which he is Curator of Archaeology.

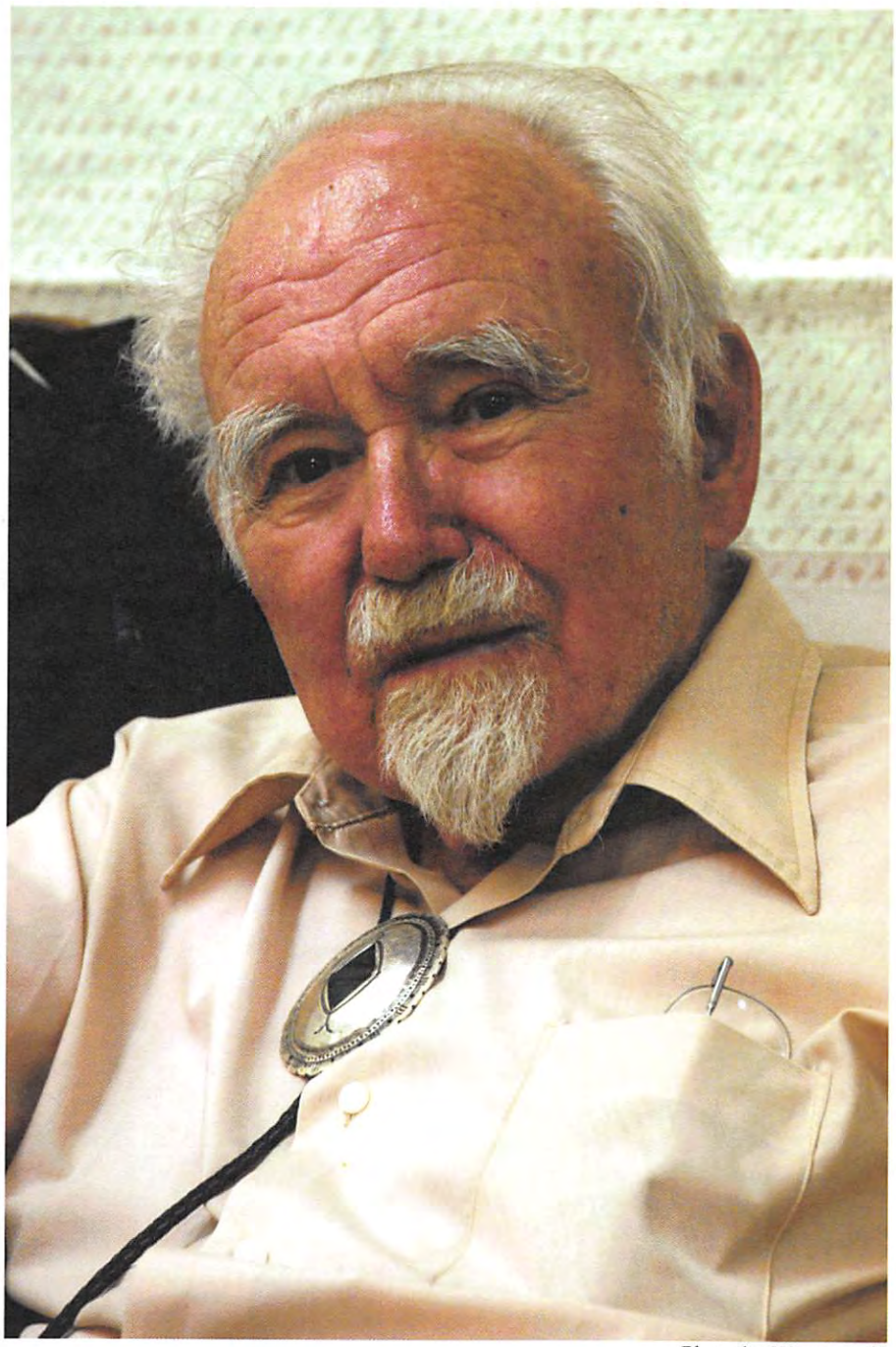


Photo by Warren Lail

Dr. James H. Gunnerson

This monograph is dedicated to the memory of Alfred V. Kidder and Waldo R. Wedel, pioneer archaeologists of the Southwest and Plains respectively, whose visions of what we could learn about people in the past went far beyond the regions in which they worked.

Chase Orchard Pueblo
Introduction

Spectacular ruins such as those of Mesa Verde and Chaco Canyon claim the most public attention, but it was a far less impressive ruin on the eastern edge of Pueblo country that yielded evidence crucial for reconstructing Anasazi culture history in the entire Southwest (Fig. 1). A.V. Kidder's excavations in Pecos Pueblo trash mounds yielded one thing among several important results. His excavations recovered evidence of Puebloan contact with Plains people beginning in the prehistoric period and reaching a climax in the mid-1500s (Kidder 1924, 1932). At that point, Spanish accounts began to add rich detail to the story of Plains-Pueblo interaction.

A further possibility seemed clear. If evidence of Plains-Pueblo contact was present at Pecos, might it not be present at other pueblo sites on the border of the Plains?

In 1957 our immediate interest was focused on the abrupt mountain-plains transition of northeastern New Mexico. Here, we hoped to find and identify historically documented villages of Jicarilla Apaches, and we sought to learn how easy access to two different environments might be reflected archaeologically.

In the course of a brief survey we became aware that there were also prehistoric pueblo sites, mainly of the developmental period, on headwaters of the Canadian River. Of the pueblo sites we visited, then and in later years, only one, consisting of several mounds in the Chase Ranch orchard, had not been leveled by the plow. We tested the site in 1966 and excavated further in 1973. The results of all our archaeological work are reported here. In contemplating those results it has occurred to us that these obscure mounds, probably unique survivors in the Cimarron District, may represent more than a pueblo on the Plains frontier. They may contribute important clues to the assimilation of Tanoan speakers into the Anasazi world.

Figure 1. Selected areas, archaeological sites, modern pueblos, and towns in northern New Mexico. Most have relevance to Tanoan speaking natives. The scale is approximately one inch equals 40 miles. Adapted from U.S. Geological Survey, State of New Mexico, 1:500,000 relief map, 1968.

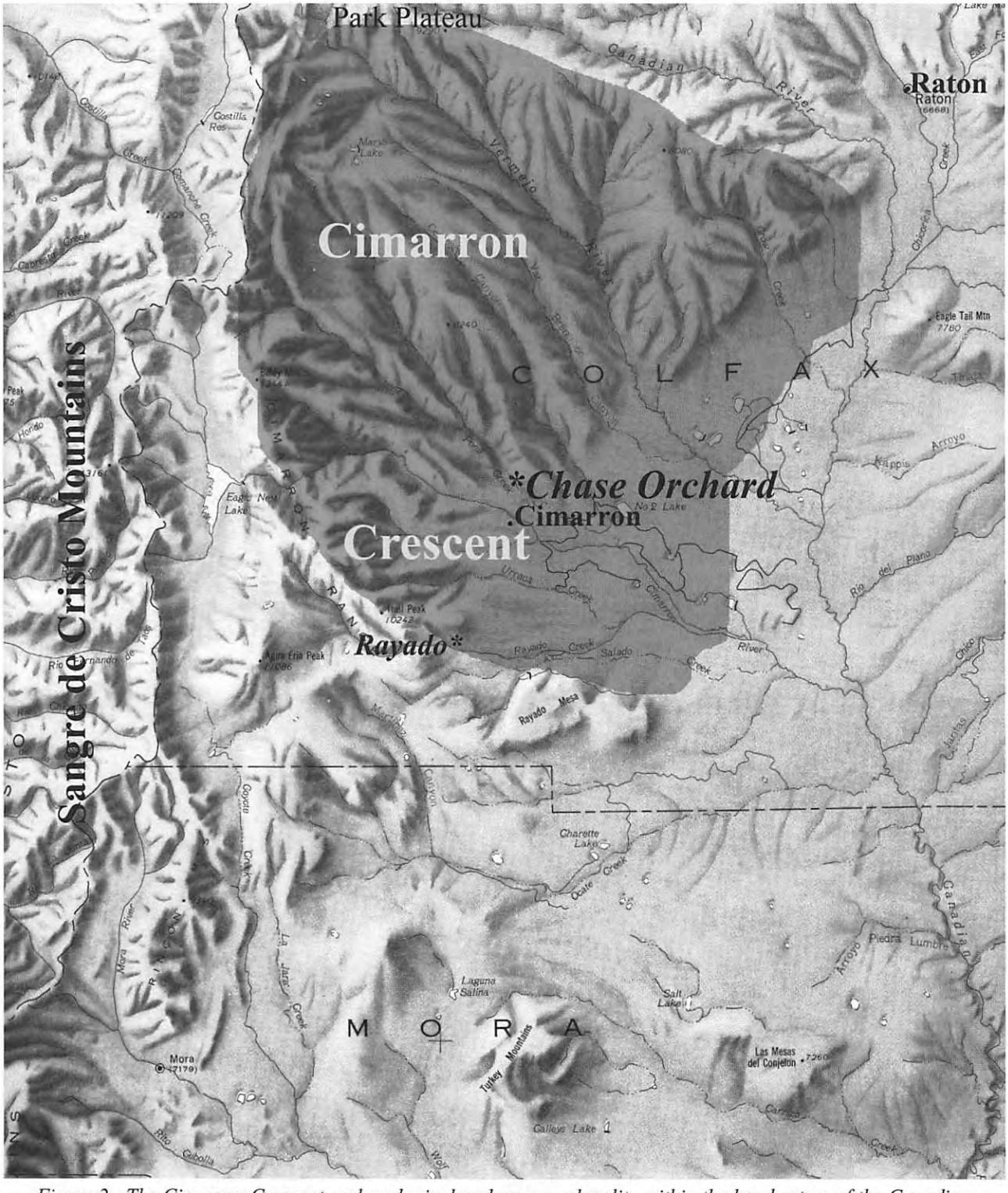


Figure 2. The Cimarron Crescent archaeological and resource locality within the headwaters of the Canadian River of northeastern New Mexico. Adapted from U.S. Geological Survey, State of New Mexico 1:500,000 relief map, 1968. *Scale: one inch equals approximately 10 miles.*

Chase Orchard Pueblo: Environs of the Cimarron Crescent Locality

Landscape

The Chase Orchard Pueblo (29CX46[1]) is located two miles north of the town of Cimarron in northeastern New Mexico (Figs. 1, 2, and 3). Here, the plains abruptly meet the foothills in a dramatic bay in the mountains (Fig. 3) We are calling this locality the Cimarron Crescent (Fig. 2). The Crescent is bounded on the west by the Sangre de Cristos from the mouth of Cimarron Canyon to the mouth of Rayado Canyon (Fig. 4), on the north by the Park Plateau from the mouth of Poñil Canyon to the mouth of the upper canyon of the Canadian River, on the south by a line of prominent mesas (that divide the drainages of the Cimarron River and Ocate Creek) from the mouth of Rayado Canyon to the Canadian River, and on the east by the Canadian River. Although part of the long recognized (Fenneman 1931:37-39) Raton phyiographic section, the Cimarron Crescent as we view it is the dramatic landscape where southeast-trending canyons draining the Sangre de Cristo Mountains meet the High Plains as manifest west of the Canadian River. Tributaries of the Canadian head on the Park Plateau and in the Sangre de Cristos at elevations up to 11,000 ft. These streams cut through the escarpments and onto the nearly level plain, where they form something of a basin (Fig. 5). At their mouths the floors of the canyons are level, a few miles long and a half mile or so wide. Chase Orchard Pueblo is situated near the mouth of such a canyon, that of Poñil Creek, where the escarpments of the Sangre de Cristos and the Park Plateau meet at an obtuse angle. Immediately southwest of the mouth of Poñil Canyon is the mouth of Cimarron Canyon (Fig. 6), separated from it by a low ridge. From the mouths of these two canyons, the streams flow over level land until Poñil Creek joins the Cimarron River some 12 miles to the east. After being joined by several other creeks, the Cimarron flows into the Canadian (Fig. 7) about 20 miles below Poñil Creek's mouth. The land is sufficiently level that in places the streams spread out to form boggy shallow basins (Fig. 5).

From the mouth of Poñil Canyon, one has a broad view of the plains beyond, of the Sangre de Cristo foothills to the right, of minor mesas to the east and of the line of major mesas which form the southern edge of the Cimarron Crescent (Fig. 8). Of the various features relating to the Cimarron Crescent, the most distinctive is the escarpment of the Park Plateau, an eastward projection from the Sangre de Cristos. The escarpment extends in a straight line from Cimarron northeast to Raton. Farther to the east the plateau is replaced by a line of mesas, diminishing in size, along the New Mexico-Colorado state line, to essentially the western end of the Oklahoma panhandle. This line of mesas follows the divide between the drainages of the Canadian and Arkansas Rivers.

Between the Poñil and the Canadian, the escarpment is breached by five canyons. Except for the Poñil and the Vermejo, these streams have no permanent water. However, at elevations of about 6,000 ft., there is evidence of Pueblo occupation along all of the streams on the plains and, especially, in the lower parts of the canyons. Earlier sites are found in the surrounding uplands to elevations of about 8,000 ft. or more. Within five miles of the mouths of the canyons, elevations of 7,000 to 8,000 ft. are common. In the mouths of the canyons one finds a mix of piñon and juniper trees, whereas out on the plains the piñons give way to ocassional junipers, various scrub, and short grasses. At higher elevations are large pines, historically cut for lumber, and higher yet aspens dominate. With this range of elevations and environmental zones, including the wetlands in the middle of the Crescent, a wide variety of resources are available (Figs. 9-16). Animals are relatively abundant now. Small herds of recently introduced pronghorns are common on the plains. Seldom can you drive along Poñil Canyon at night without seeing deer. Coyotes can be heard every night, and bears frequently check out trash cans. Occasionally a mountain lion or elk can be spotted. Small flocks of turkeys are often scared up in the brush along the streams. In late summer ducks nest and hatch their young in man-made lakes where muskrats are common. Rabbits and other small rodents are abundant as are various small birds. Now, especially in moist years, cattle grazing within the Crescent is rewarding. The growing of crops is restricted to the mouths of major canyons and other areas which can be irrigated from streams.

Climate

Weather records for the town of Cimarron, starting in 1906 and spanning 35 years (Hardy 1941), are applicable to Chase Orchard Pueblo which is only two miles away. The annual precipitation is 15.74 inches with August the wettest month (2.4 inches) and January the driest (0.28 inches). The average growing season is 158 days; the last killing frost in the spring is on May 6 and the first of the fall on October 11. Because the Poñil and neighboring canyons open to the southeast and are protected from the north by the Park Plateau, they receive an abundance of warming sunshine. With special care, including irrigation, limited cultivation, especially of hay, is successful most years. Commercial apple orchards have been profitable in the recent past (Armstrong 1981).

History

Because of its environment and strategic location, the Cimarron Crescent has played an important role throughout historic and prehistoric time (Biella and Dorshow 1997a, 1997b; Campbell 1984; Glassow 1980). However, for about three centuries after residents abandoned Chase

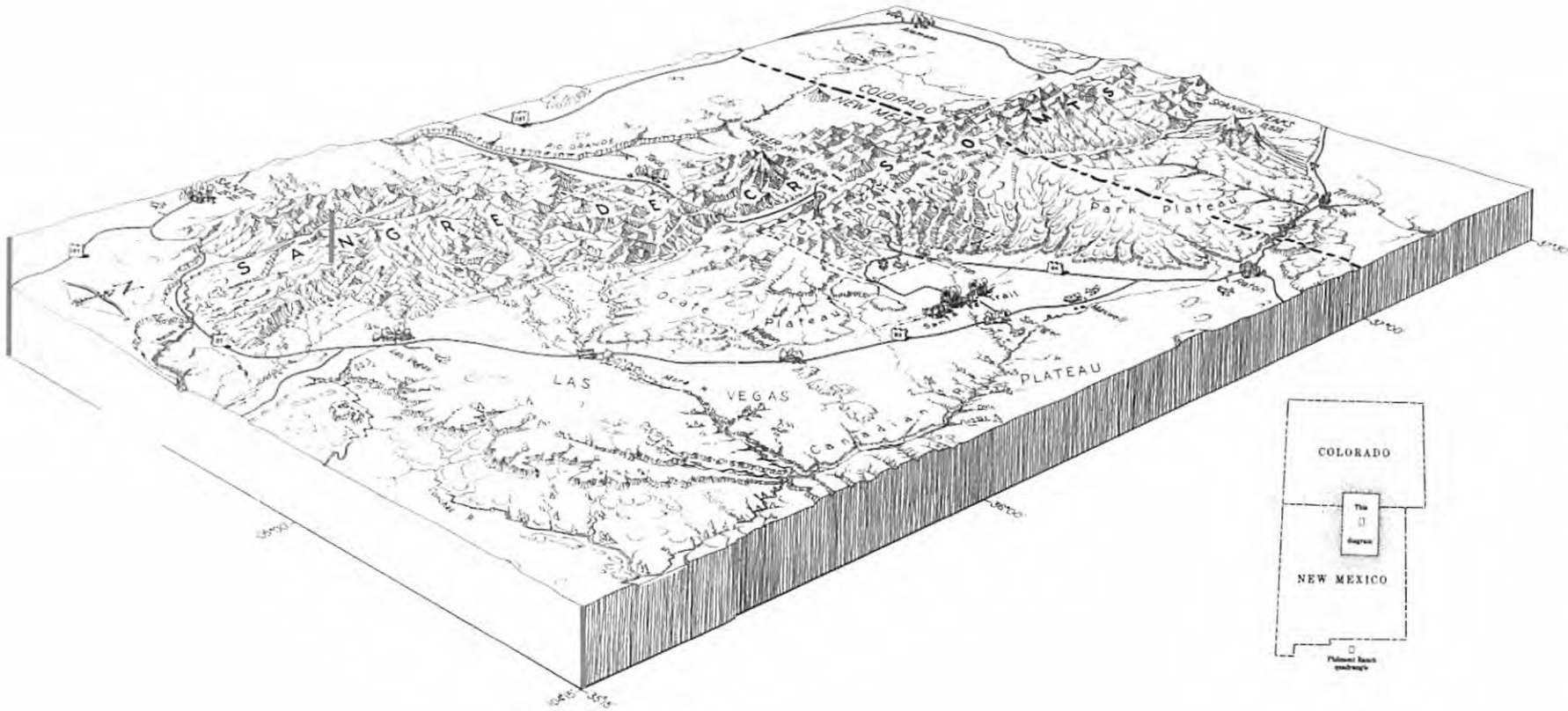


Figure 3. Relief rendition of what is herein referred to as the Cimarron Crescent. Adapted from Robinson et al. *1964:Figure 1.*

Figure 4. Once the Poñil leaves its lower canyon, it enters the level plain enclosed by mountains, a string of large mesas, and the Canadian River. This locality is being called herein the Cimarron Crescent. This view looks northwest from where the Poñil joins the Cimarron River. The Chase Orchard Pueblo is 7 miles in the background. The skyline is the Sangre de Cristo Mountains which extend south from the Cimarron area. The CS Ranch, an old and major outfit in the area, has its headquarters in the grove of trees in the background.

Figure 5. Where the Poñil joins the Cimarron River are boggy areas which represent a ecological niche with distinct plant and animal resources. The Sangre de Cristo Mountains form the skyline to the west.

Figure 6. The open plains, which extend east from the mouth of Poñil Canyon, are seen here where Van Bremmer Creek enters the Vermejo River some 15 miles east of Chase Orchard Pueblo. The skyline to the east becomes broken by occasional small mesas and volcano cones.

Figure 7. The plains continue east and obviously much beyond the Canadian River. Here, the Vermejo River joins the Canadian. Ten miles farther south the Canadian is joined by the Cimarron River downstream from where the Poñil joins the Cimarron.

Figure 8. The south edge of the Cimarron Crescent is marked by a series of east-west mesa, some of which are seen here on the skyline. This perspective was photographed from part way up the left wall of the lower Poñil Canyon. Chase Orchard Pueblo is just off the right edge of this scene. A few roof-tops of houses in Cimarron are visible just over the slightly sloping ridge between the Cimarron River and Poñil Creek.

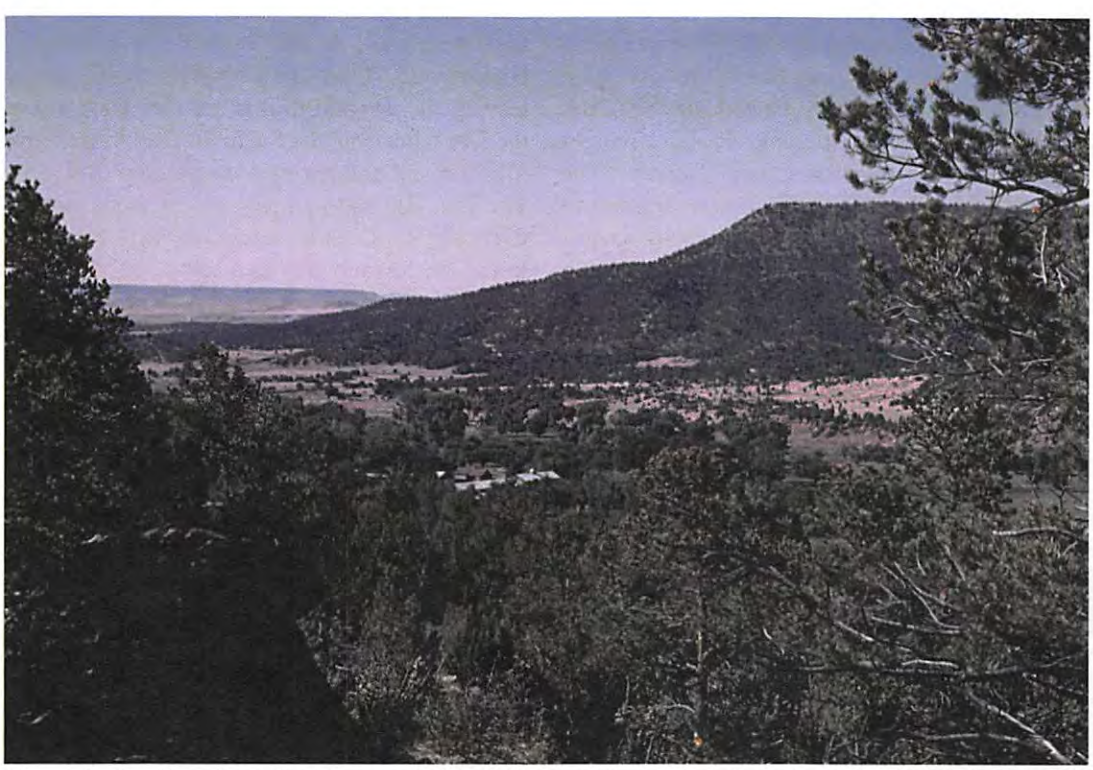


Figure 9. Looking down the lower end of Poñil Canyon from a bench on the right side of the mouth of Chase Canyon. Buildings of the Chase Ranch are in the middle of the scene. Chase Orchard Pueblo is hidden by trees beyond the buildings. The stepped slope on the right is the divide between Poñil Creek and the Cimarron River. In the far background is one of the mesas comprising the southwest limits of the Cimarron Crescent.

Orchard Pueblo, the population in the locality was apparently minimal. Then the Southern Athabaskans arrived on the Southern Plains around A.D. 1525, and by 1550 some of those, now called Jicarillas, had begun frequenting the headwaters of the Canadiana, including the Poñil (Gunnerson 1974). It is likely that these formerly Canadian Apacheans had followed what McClintock (1968) later called the "Old North Trail", which followed the foothills of the Rocky Mountains from Canada to Mexico. It had been long known to various tribes and would have at least come close to the Cimarron Crescent.

What were probably early Indian routes were followed by Spanish expeditions to the Plains through or adjacent to the Cimarron Crescent locality (Gunnerson 1984, Thomas 1935). In 1541 Coronado went out and returned by way of Pecos, so he would not have come close to the Cimarron Crescent. But by 1600 the Spanish had learned from the Indians that a more direct route to what is now western Kansas went by way of Taos. In 1706 Ulibarri, on his way to El Cuartelejo, emerged from the eastern foothills on Uracca Creek, near the middle of the western side of the Crescent (Fig. 2; Gunnerson 1974:170-176; Thomas 1935:59-64). Because his route crossed very boggy country, he stayed very close to the foothills on his return. In so doing, he experienced the full length of the escarpment of the Park Plateau. Along this higher land, in the mouths of the canyons, he reported visiting various Jicarilla settlements (Gunnerson 1974).

Valverde, chasing Comanches in 1720 to the area north of the Arkansas and east of the Rocky Mountains, also went out by way of Taos but essentially followed Rayado Creek down the slope to the plains, emerging at about present Rayado. This, the famous Taos-Rayado trail, soon became the standard route from the Rayado-Cimarron localities to Taos. (It was not replaced until well into the 1900s when a road suitable for automobiles was opened from Cimarron, across the Moreno Valley, and on to Taos.) In the late 1700s and early 1800s the Spanish were becoming more fearful of encroachment by Americans and sent out patrols to watch for them. The Taos-Rayado trail was part of their circuit, and there was some sort of an installation at Rayado called the "Casa del Rayado".

With the establishment of the so-called Maxwell (actually the Beaubien and Miranda) grant in 1841, the Cimarron and Rayado area took on major importance (Keleher 1964). The grant, covering some 2700 square miles, included a large part of northeastern New Mexico and extended well into southern Colorado. Charles Bent of Bent's Fort and his associates saw the potential of the area and established settlements, first at Rayado and later at Cimarron (Murphy 1980). With an awareness of the increasing number of wagon trains from the east coming over what was to become the much-used Santa Fe Trail, they established a fort at Rayado, a satellite to their business in Taos. Rayado was an obvious supply and transfer point connecting the Santa Fe Trail with the upper Rio Grande valley.

The original route of the Santa Fe Trail, known as the mountain route, had followed the Arkansas River to Bent's Fort near La Junta, Colorado, then cut across country to Raton Pass. After crossing this very difficult pass, the trail came south and west following the plains-uplands juncture of the Cimarron Crescent to Rayado, the first source of supplies and wagon repairs after leaving Bent's Fort some 150 miles and several weeks earlier (Fig. 3). The trail continued south along the foothills until it reached the next pass, at Pecos Pueblo, where it crossed the mountains to Santa Fe. Thus, from Raton pass to Santa Fe the trail followed the future route of the Santa Fe railroad and Interstate Highway 25. Once the Cimarron cutoff was established, leaving the original trail in western Kansas and crossing the Dry Cimarron, the Santa Fe Trail bypassed the Cimarron Crescent and rejoined the original trail at Fort Union. The Taos-Rayado trail still served as an important link to the upper Rio Grande valley and the U. S. Army continued to use the Rayado area as a source of hay and pasture for Fort Union near Las Vegas. Also, the Jicarilla and Utes drew rations at the mill in Cimarron which had been built by Maxwell. Later, Maxwell moved his headquarters to

Figure 10. Lower Poñil Canyon begins where Chase Canyon enters it on the left (the constricted area on the right side of this view). Modern cultivated fields can be seen on the canyon floor from the foreground to the mouth of Chase Canyon. Just to the right of this picture is Templeton Canyon, the largest canyon to enter the lower Poñil Canyon.

Figure 11. The floor of the upper end of Lower Poñil Canyon slopes gently up to its edge. Here, Poñil Creek has a shallow, meandering course, probably much as it had when Chase Orchard Pueblo was occupied. On the skyline is a large, distant mesa which is one of those on the southern edge of the Cimarron Crescent. The long slope to the right of this picture is the ridge which separates Cimarron and Poñil canyons.

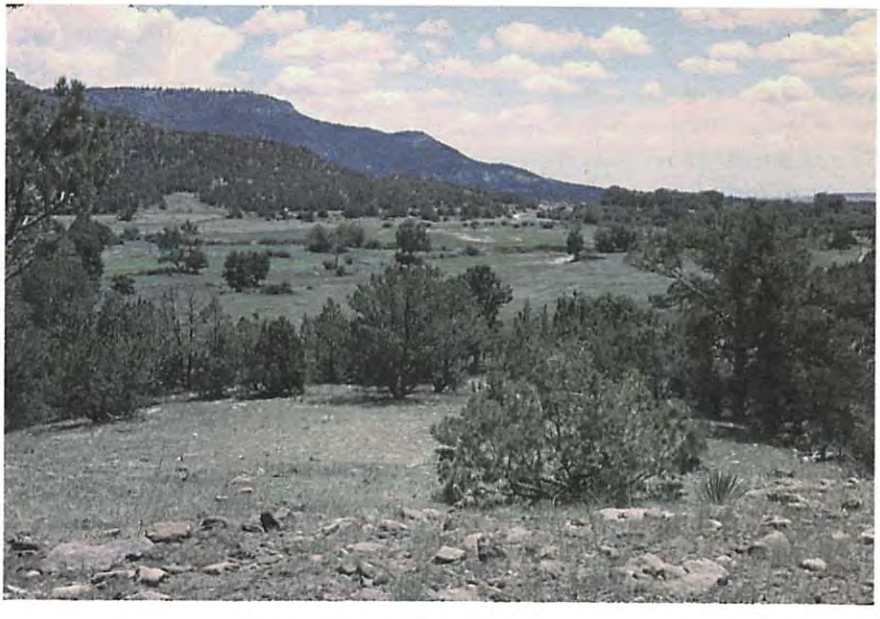


Figure 12. View across Lower Poñil Canyon from just above its midpoint. The slope is quite steep from the canyon floor to the nearly flat bench from where the photograph was taken. The bench is 50 to 200 meters wide and extends along the right hand side of Poñil Creek for about 640 meters.

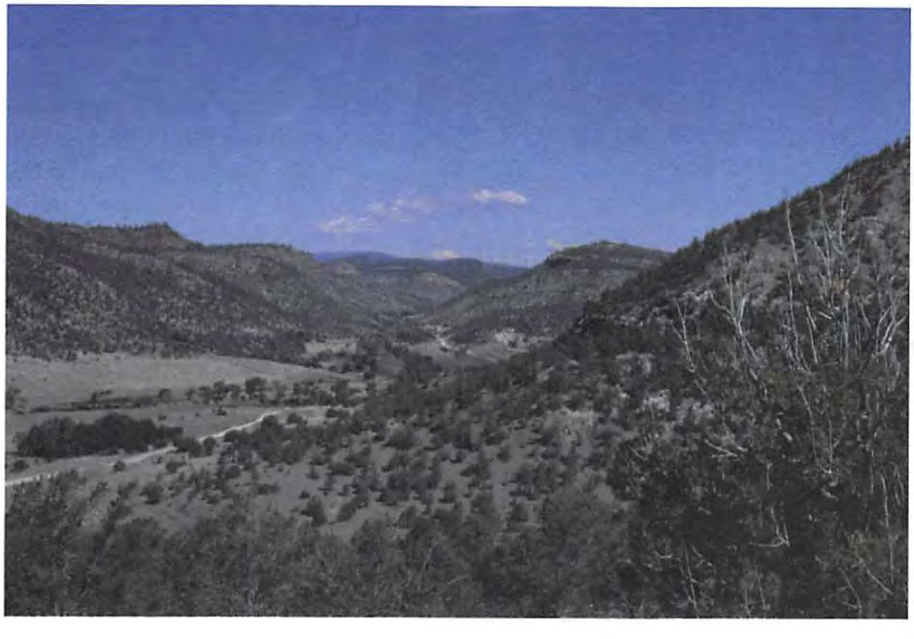


Figure 13. Poñil Canyon looking upstream from the mouth of Chase Canyon. This would be the upper end of what is being considered Lower Poñil Canyon in this study.

Figure 14. View west-northwest at the mouth of Chase Canyon. Cretaceous and Tertiary limestones and sandstones are exposed here.

Figure 15. View south-southwest of Poñil Canyon some 8 km upstream from mouth of Chase Canyon. Here, at an elevation of some 7,000 ft. above sea level, the canyon floor widens. Archaeological finds here bear witness to occupations preceding that of Chase Orchard Pueblo.

Figure 16. View northeast across the mouth of Lower Poñil Canyon showing the left hand canyon wall. On the extreme right of the canyon wall is the landmark known as Indian Head. This photo was taken from the end of the ridge, essentially at the northeast end of the town of Cimarron, which lies between the Cimarron River and Poñil Creek. Cultivated fields can be seen on the canyon floor, at its widest here.

Cimarron, which grew at the expense of Rayado (Murphy 1980).

With the breakup of the Maxwell grant, several resulting major ranches established their headquarters in or very close to Cimarron taking advantage of the farmland, pasture and transportation. Some of these ranches, such as the Chase Ranch (Figs 17-21), are still in the ownership of the original families. There was a brief period of high activity when gold was discovered 20 miles northwest of Cimarron (Fig. 3). The high country around Cimarron has been a paradise for hunters and outdoorsmen. Waite Phillips, who owned a large ranch with headquarters near Cimarron, gave it to the Boy Scouts. The Philmont Scout Ranch, consisting of some 200 square miles, mainly of rugged and beautiful high country, is explored annually by some 20,000 scouts and is now the main reason people know about the Cimarron country.

End Note

1. Chase Orchard Pueblo has been given at least three different site numbers. The one used here, 29CX46, follows the system introduced by the Smithsonian Institution with 29 designating New Mexico; CX, Colfax County; and 46, the forty-sixth site assigned a number in Colfax County. Philmont Scout Ranch archaeologists designated the site as NP19; the nineteenth site recorded along the Lower Poñil. The Laboratory of Anthropology, Museum of New Mexico, assigned LA32319 to the site as part of their worldwide system which contains no coded geographical information.

Figure 17. Looking southwest towards Chase Ranch headquarters. Dominating the background is Dean Canyon. Chase Orchard Pueblo lies nearly three-quarters of a mile to the left of the headquarters.

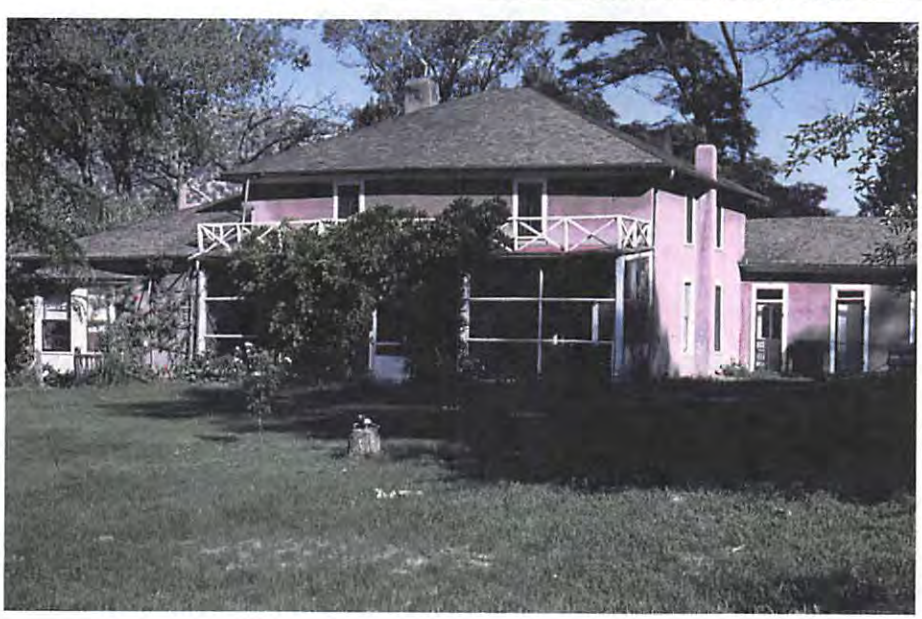


Figure 18. The gracious Chase Ranch house, which still functions as home and office, includes part of the original house. A good spring made this location especially attractive.

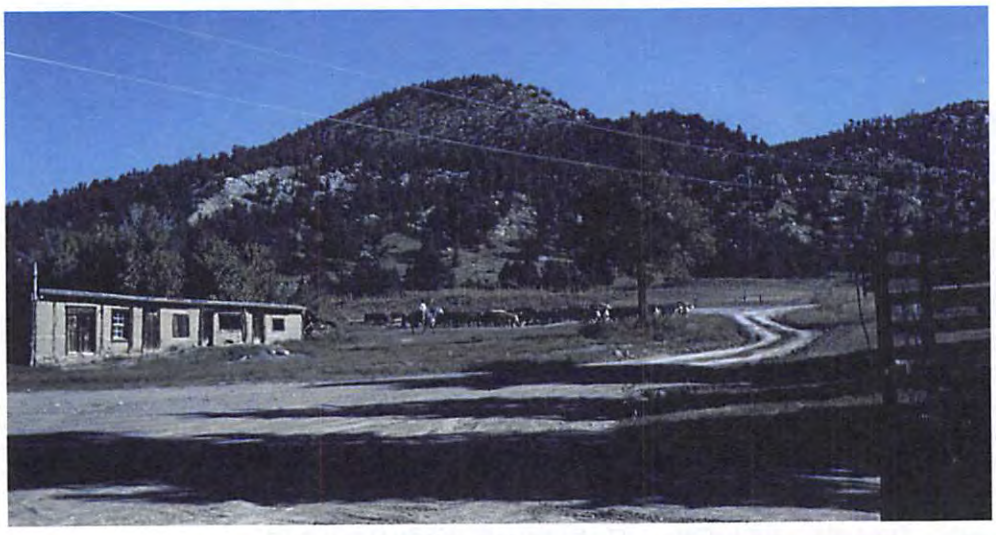


Figure 19. Other early structures, such as this adobe bunkhouse, now serve other functions at Chase Ranch. In the background, a bench part way up the canyon wall provides a good panorama of the lower part of the canyon (see Figs. 9 and 17). The canyon floor widens above and below the ranch buildings.

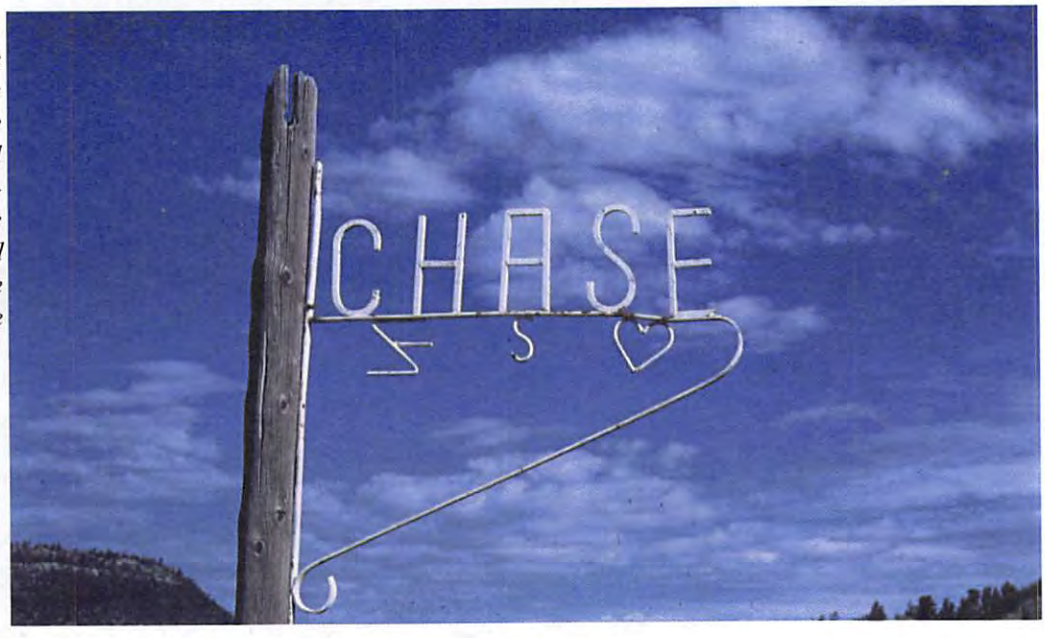


Figure 20. Chase Ranch headquarters sign with brands. The heart is the principal brand and is especially coveted because it is distinctive, simple, and a single element. The ranch has had it since its founding in 1873.

Figure 21. Gretchen Sammis, Chase Ranch owner, on the left and Ruby Gobble, ranch foreman, on the right at the Chase Canyon base about three miles up that canyon and at an elevation of 7000 ft. Cattle are pastured here in the summer. From here horses are used where pickups can go no farther.

Chase Orchard Pueblo: Setting and Description of the Excavations

Site Setting

Chase Orchard Pueblo is located near the middle of the lower Poñil Canyon (Fig. 22). Some five miles in length, this lower section extends from the canyon's mouth to where Chase Canyon enters from the north (Fig. 22). Within the five mile span of this lower section the canyon floor drops nearly 200 feet in elevation, although one senses little elevation change driving along the canyon. Near the mouth of Chase Canyon the Poñil's valley floor is almost non-existent, but at Poñil Canyon's mouth the valley is nearly a mile wide (Fig. 22). This width is a little deceptive because it is enhanced by its merging with the bottomlands along the Cimarron River. Throughout its length, the left (or north) wall of the Poñil Canyon is striking, rising over a thousand feet above the canyon floor (Figs. 12 and 16). A bluff forming the prominent landmark known as Indian Head lies at the east end of Poñil Canyon's mouth and juts almost 1200 feet above the plains to the east (Fig. 22). Although the right (south) wall is of comparable height, erosion has receded it farther away and dissected it with several lesser canyons (Figs. 9, 10, 13, and 17).

The bedrock exposed along the lower Poñil Canyon is composed primarily of Tertiary sandstones (Poison Canyon and Raton formations) and Cretaceous sandstones (Vermejo and Trinidad formations; Robinson et al. 1964:Plate 3). The lower slopes of the canyon are Pierre Shale, the weathering of which has contributed to the fine textures of soils and sediments common along Poñil Creek. Capping the uplands adjacent Poñil Creek and its three forks are Tertiary sandstones and conglomerates (ibid.). Erosion of these uplands adds some sand and gravel to sediments washed down the Poñil drainage.

For most of its course in this lower section, Poñil Creek has running water (Fig. 23) and is incised with banks ranging from 8 to nearly 20 feet in height. One of these latter exposures contains multiple buried soils and evidence of a cut-and-fill (Fig. 24). The lowest buried soil here has yielded a radiocarbon date of 5830 +/- 40 years ago (Beta-144086; Wyckoff and Lail 2003). Clearly, this lower part of the Poñil drainage has undergone notable aggrading since middle Holocene times. This probably explains the general lack of observable terraces near the creek, although the ranch headquarters, the orchard, and the pueblo site are atop raised settings 10 to 15 feet above the creek. Remnants of a prominent terrace some 50 feet above the present stream do parallel the canyon wall, especially the left side. A buried soil not quite 6 feet below the surface in this terrace has been radiocarbon dated at >40,700 years ago (Beta-144085), indicating a mid-Wisconsinan period

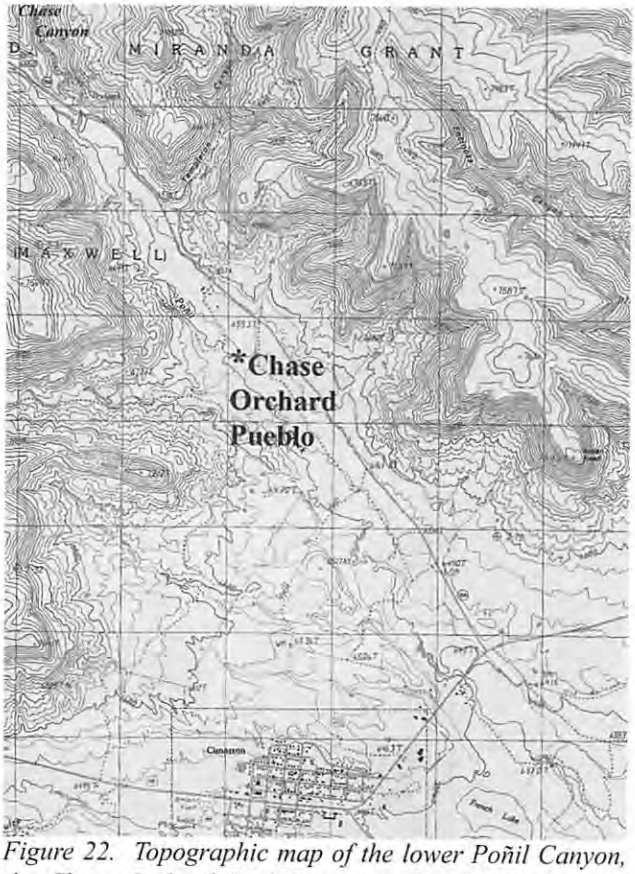


Figure 22. Topographic map of the lower Poñil Canyon, the Chase Orchard Pueblo, and surroundings. Adapted from U.S.G.S. Cimarron Quadrangle, 7.5 minute series, provisional edition, 1987.

of landscape stability here in the lower section of Poñil Canyon (Wyckoff and Lail 2003).

Today, two kinds of soils are recognized in this lower canyon segment of the Poñil's drainage. The Riverside-Manzano complex is shown as a narrow band paralleling Poñil Creek and reportedly (Anderson et al. 1982:52) consists of stratified loamy sand, sand, and varying amounts of gravel. A little farther away from the creek the prevailing soil mapped in this lower canyon area is the Deacon-La Brier-Manzano association. The Chase Orchard Pueblo site appears to occur on expressions (high positions) of the Deacon soil series within this association (Anderson et al. 1982:Soil Map Sheet 108). The Deacon series is characterized by deep, fine textured (loam to clay loam) soils that are slowly permeable to water penetration (Anderson et al. 1982:28-29). While perhaps not the most productive arable soil for prehistoric farmers, given its fine texture and slow water penetration, the Deacon series does have an available water capacity of 9 to 11 inches and an effective

Figure 23. Crew bathing in Poñil Creek opposite Chase Orchard Pueblo. The creek has been deepened by a temporary dam (left). Note the active erosion.

Figure 24. Extensive erosion of left hand bank of Poñil Creek some 350 meters downstream from Chase Orchard Pueblo. A standard stepladder provides scale. Much of a ca. A.D. 1700 Apache village, including a well preserved baking pit, was lost to this erosion.

rooting depth of 60 inches (ibid.).

The Chase Orchard Pueblo Site

Chase Orchard Pueblo consisted of a community of about a dozen multi-room structures situated on rolling land and low ridges just east of Poñil Creek. The irregular settings on which they occur probably saved this site's structures from destruction during historic land use. Immediately east of the site, where the land is less broken, are the remains of an apple orchard. This less rolling terrain was leveled to enhance irrigating the orchard, and whatever parts of the pueblo that existed there have been destroyed.

Our definition of the site is somewhat arbitrary. We include in it eleven mounds that occur over an area about 50 by 100 meters (Fig. 25). Farther away, three outlying mounds may well be part of the same community. Based on our excavations these mounds or rises cover the remains of habitation structures and represent the result of sediment accumulation where buildings collapsed after abandonment. Because surface evidence exists for many other structures in the lower Poñil Canyon, perhaps the entire locality could

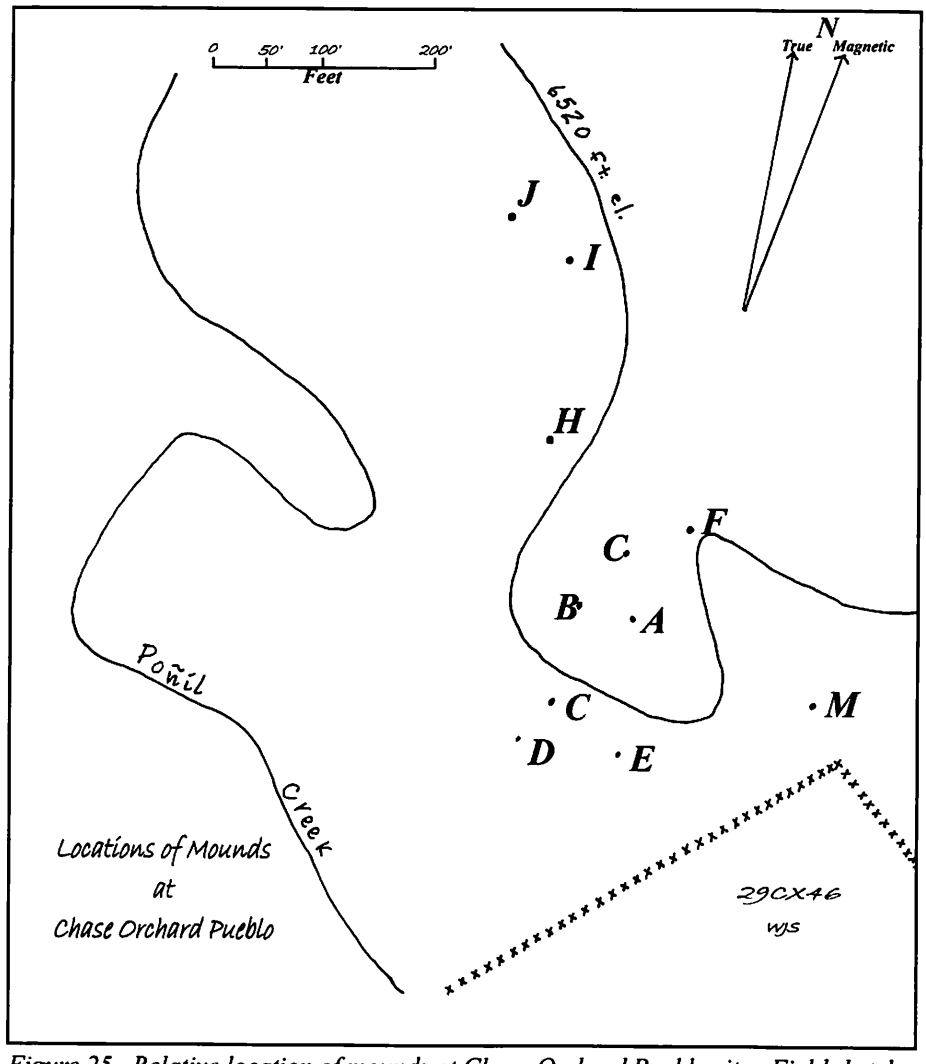


Figure 25. Relative location of mounds at Chase Orchard Pueblo site. Field sketch map made with compass and pacings. Mounds A, B, and F are those reported herein.

be treated as one puebloan community.

Mounds and Structures

Mound A and Structure A

Mound A, which contained Structure A (Figs. 26-45), was approximately 40 ft. across and 1.5 ft. high. It contained wall bases of three contiguous rooms oriented on the semi-cardinal directions, plus limited evidence of surrounding rooms. The construction of the rooms was essentially the same. Coursed adobe walls about 0.7 ft. thick had been built on undisturbed earth that had been only slightly leveled. The rooms had been floored, and refloored, at least twice, with puddled adobe. The original structure had burned and the remains had been leveled, leaving a layer about 1.0 ft. thick of melted down adobe mixed with detritus, mainly chunks of burned adobe. The structure had been rebuilt on approximately the old wall bases and the thick detritus layer sealed off with another puddled adobe floor. There was the suggestion of still another rebuilding phase, but cultivation and erosion had destroyed most of the evidence.

Rooms 1, 2, and 3. The central room (Room 1), the first built and the largest in Structure A, was 12.5 ft. by 11.5 ft. Room 2 was only 4.5 ft. wide and extended the full length (12.5 ft.) of the northwest wall of Room 1, which it shared. Room 3 was also 4.5 ft. wide and shared the southwest walls of both Rooms 1 and 2. Thus the three rooms formed a block, approximately 17 ft. square, with evidence of perhaps four additional rooms. The observable configuration (Fig. 28) suggested a deliberate plan in which a large central room had been surrounded by smaller attached rooms.

Ceramic Vessels Set in Floor. Internal features were not common in Structure A. The most noteworthy were three utility pottery vessels (Figs. 36-45, described in the section on ceramics) set in the floors during the second building phase. In Room 1, the central room, there was a pot against the northeast wall near the east corner and a second was against the same wall about 3 ft. from the first. The third vessel was against the middle of this same wall, but on the opposite side in Room 3. Two of the vessels had

Figure 26. View west across Chase Orchard Pueblo site with crew at Mound A before excavation in 1966. Mound F is at the right edge of picture opposite the truck.

Figure 27. View north of 1966 test trench, oriented on magnetic north, across Mound A.

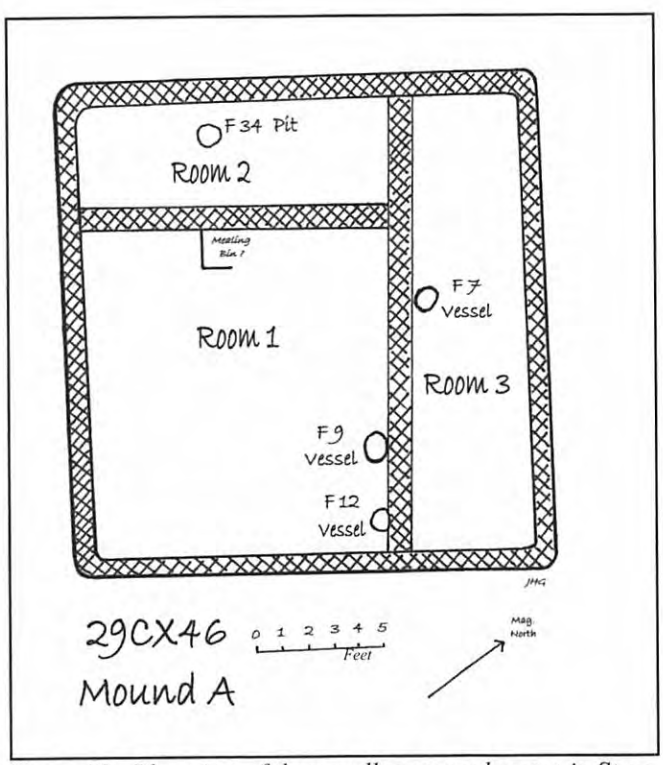


Figure 28. Plan view of three well preserved rooms in Structure A as uncovered in Mound A at the Chase Orchard Pueblo.

thin irregular stone slab covers (Figs. 39-42) still in place. On the underside of one slab was a dark circle corresponding to the rim of the vessel.

Sub-floor Pit. In Room 3 was a sub-floor pit about 2 ft. from the northeast wall and 5 ft. from the southwest wall. Its maximum diameter of 1.5 ft. was at the midpoint of its depth. At floor level the diameter was 1.2 ft.

Slab Cist. Against the middle of the northwest wall in Room 1 was a cist, or possibly a mealing bin (Figs. 34 and 35), about 1.5 ft. square, made of thin stone slabs set verti-

Figure 29. Structure A: east corner of Room #1 (remainder not excavated) with pots removed. A small part of Room #3 is to the left on the other side of the wall. Note rock pile extending from under unexcavated area in lower right.

Figure 30. Structure A: wall between Room #1 (foreground) and Room #3. Note cluster of rocks on Room #1 floor.

Figure 31. East wall of Structure A, Room #1, with cluster of rocks more exposed than in Figure 30. Near the middle of Room 31, these rocks suggest a circle, but their function is not obvious. Perhaps they were gathered for building a hearth, one never finished. Stone slabs in upper right may be flooring, a feature noted elsewhere.

cally . Near the cist and scattered on the room floor were fragments of trough metates and manos. In the middle of Room #1 was an irregular cluster of rocks in an area about 1.5 ft. by 3.5 ft. These rocks had no obvious function.

Figure 32. Structure A: a small part of Room #3 (at left) and northeast corner of Room #1. Note "benches" at base of wall and horizontal color change in far wall marking boundary between Phases One and Two.

Figure 33. Working on Structure A. The man with whiskbroom is at the end of Room #2. Immediately beyond is the end of Room #3. Extending to the right of him is the wall that separates Room #3 and Room 31. On it are a few small hand tools. Room #1 is on the right with part of the 1966 backfill having been removed. The far person is checking out another possible room.

Figure 34. Reclearing 1966 excavation and extending excavation of Structure A. Room #2 is lower left; Room #1 is lower right; and Room #3 is just beyond Room #1. Crew members in background are checking another probable room. Slab-lined cist remains are to left of girl in straw hat. Note the broad expanse of the canyon floor.

Figure 35. Jean Youker pointing at some of the smaller slabs that had been part of a cist or bin. She is sitting on the wall base that divides Room #1 (foreground) from Room #3.

Figure 36. Vessel F7 in situ in Structure A. "Lid" of several pieces of stone in place.

Figure 37. Vessel F7 in situ with lid stones removed.

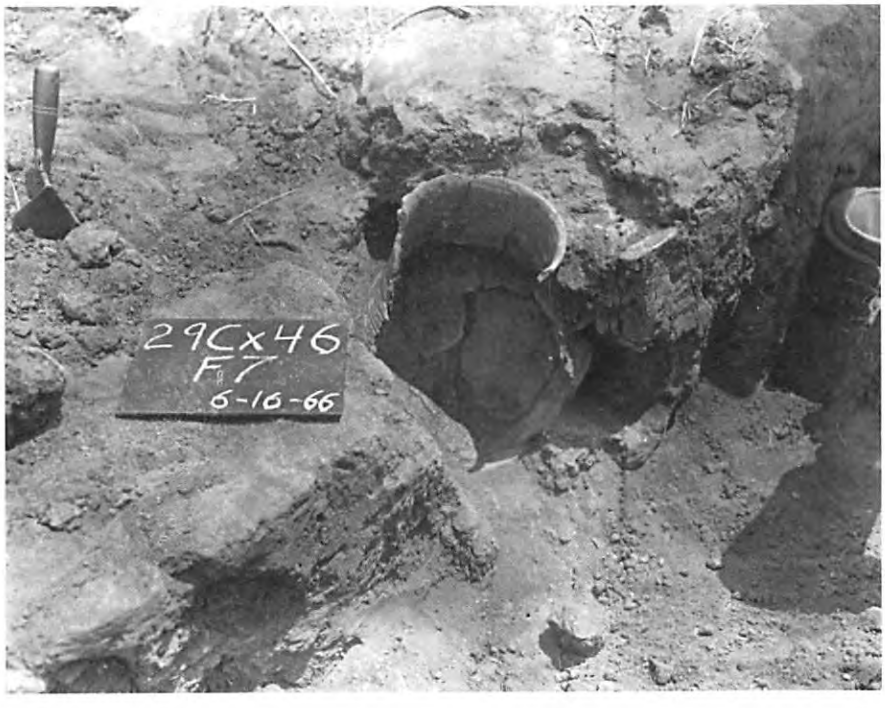


Figure 38. Vessel F7 in situ in Structure A with fill removed.

Figure 39. Vessel F9 in situ in Structure A of Mound A. Note carefully shaped stone lid on top.

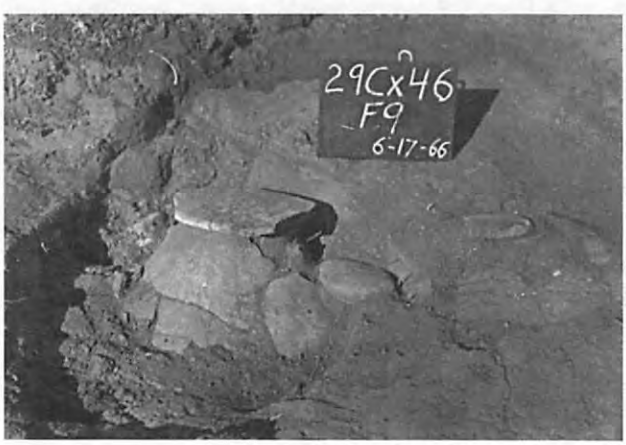


Figure 40. View southwest of stone lid atop Vessel F9 as uncovered in Structure A of Mound A.

Figure 41. Vessel F9 in situ with stone lid removed (to right). Note dark circle on the underside of the lid where it had been in contact with the lip of the vessel. View west.

Figure 42. Vessel F9 in Structure A with stone lid to left side. View north-northwest.

Figure 43. Base of Vessel F9 in situ with upper portion removed. View north-northwest in Structure A of Mound A.

Figure 44. Vessel F12 in situ in Structure A of Mound A. It is mostly uncovered and complete, but cracked.

Figure 45. Vessel F12 (left) and Vessel F9 (right) in situ on the floor of Structure A in Mound A. The rim of Vessel 12 is just below the floor level, thus sitting on the earliest floor level of this structure.

Mound B and Structure B

Mound B (Figs. 46-69) was centrally located in the main part of the site (Fig. 25) and was some 45 ft. across and 2.5 ft. high. It consisted of the melted down remains of Structure B, which represented only one building phase, but with some additions and renovations (Fig. 47).

Room #1. The best preserved and most informative room uncovered at Chase Orchard Pueblo was the first room constructed in Structure B of Mound B. Room #1 (Figs. 51-66) was essentially square, 13 by 14 ft., and had definitely rounded corners. Walls of coursed adobe, about 0.7 ft. thick, were laid on undisturbed earth and then plastered on the inside with adobe. The initial floor was of puddled adobe. A second floor 0.2 ft. above the first was separated from it by relatively clean fill. This room has been interpreted as a square above-ground kiva.

Room Axes. On the east-west axis of Room #1 was a floor-level ventilator through the middle of the east wall and an elaborate hearth 5.0 ft. from the east wall. A possible sipapu was 1.5 ft. from the west wall. On the north-south axis of this room were molds of two substantial posts, each about 2.5 ft. from its respective wall. There was an ash pit along this axis between the north post mold and the north wall, rather than adjacent the hearth on the east-west axis as is usual in kivas.

Hearth. The hearth (Figs. 55, 59-62) had originally been a simple, heavily burned pit 2.5 ft. in diameter and 1.0 ft. deep, surrounded by an adobe rim 0.3 ft. thick and 0.7 ft. wide. A second adobe rim had been added on top of the first when the room was renovated, a process apparently not yet completed when the room was abandoned. At the time of the renovation the original, heavily burned, fire pit was partially filled in and a smaller pit, about 1.5 ft. in diameter and 1.0 ft. deep, was dug through the new fill in the first pit and down into the undisturbed fill beneath the original pit. The wall of the second (later) pit was lined with two separate layers of stones set on end. The inner layer consisted of seven irregular small stone slabs. Behind this lining of slabs (between them and the wall of the pit) was a second ring, this time of six manos (Figs. 164-168), also set on end. The upper ends of these 13 pieces of stone and the top of the new fill that had been put into the first (original) pit formed a ledge about 0.4 ft. wide and 0.4 ft. below the upper floor. The earth with which the original heavily burned pit had been partially filled, along with the stone and mano lining of the second, inner, pit showed no evidence of having been burned. There was, however, a layer of ash about 1.5 ft. thick in the bottom of the inner pit as though the remodeled hearth was serving as an elaborate kiva ash pit. Its location would have been appropriate for such a function. If it was intended to serve as a new ash pit, then there was no evidence of a new, contemporary hearth in the room. Perhaps the ash was from the original ash pit or from another kiva and was deposited in the refurbished hearth to sanctify it. If the renovated hearth was to serve

Figure 46. Ruth Day standing near the center of Mound B prior to its excavation.

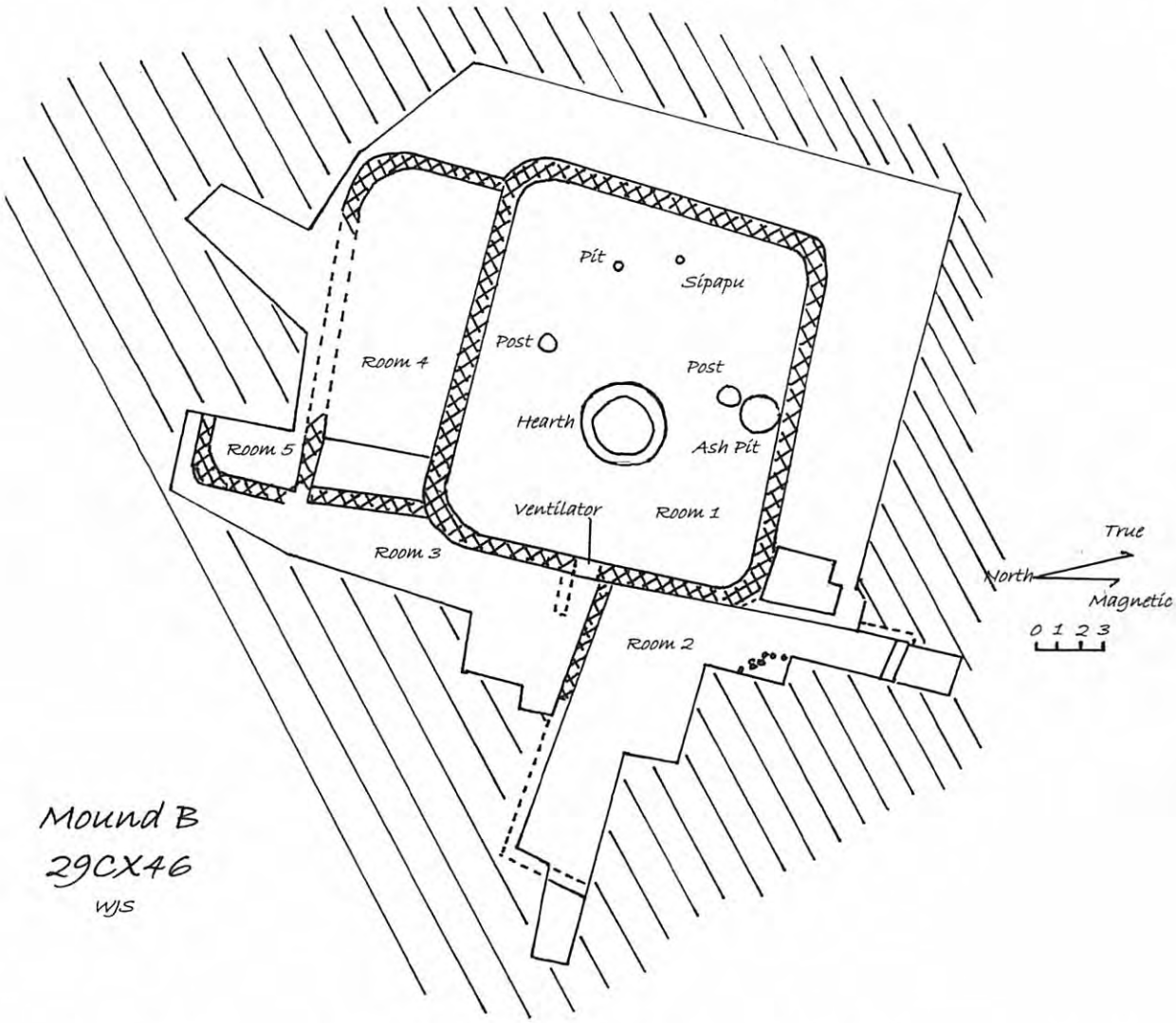


Figure 47. Plan view of excavated portions of Structure B in Mound B. What is being interpreted as a kiva, the room with rounded corners was completely exposed and is central to the plan.

Figure 48. Exposed walls of Structure B. Chaining pins mark the walls. View is to the west.

Figure 49. Looking at east wall of Structure B. Chaining pins mark interior and exterior wall edges..

as an ash pit, then a new hearth was yet to be prepared. If the refurbished hearth was to continue as a hearth, then it had not yet been reused at the time of abandonment. A new ash pit near the hearth might have been intended as part of the renovation but not yet prepared, or the old pit, near the north wall, was to have continued in use.

Deflector. Resting with one corner on the northeast part of the rim of the hearth was an unusually large, very thin, nearly square, trough metate (Fig. 53, described elsewhere) that might have been a hatch cover or, more likely, a deflector. If the latter, it was not obvious how it would have been supported. If, as suggested above, the kiva was in the process of being remodeled at the time of abandonment, the stone slab might have been retained from a previous kiva phase, or it may have been brought in new and intended for use as a deflector, but not yet set in place. Evidence of how such a deflector might have been supported in the first phase of the kiva would have been obliterated during the reflooring of the room.

Ventilator. The ventilator tunnel (Figs. 55-64), opening through the middle of the east wall at floor level, extended into the corner of the adjoining room (Room #3). The opening was 1.2 ft. wide and about 1.3 ft. high from the upper floor. When the kiva was refloored the bottom of the tunnel had been filled in to the same level, in part with a thin stone slab (Fig. 163). that had been carefully squared

Figure 50. View north of exposed west wall of Structure B.

Figure 51. View east with a third of Structure B floor exposed. Note well preserved south wall.

Figure 52. View east of Room #1 of Structure B. Note adobe rim around hearth by large metate.

Figure 53. View east of Room 31 of Structure B. The floor is exposed with large metate (left center) and rock slab.

to a size that would fit the ventilator opening. Perhaps it had served as a damper during the first phase of kiva use. Three manos (Fig. 158) had been placed in the mouth of the ventilator. In the corner of Room 33 we could follow, for about 2.0 ft., the remains of the tunnel, one side of which was the wall dividing Rooms #2 and #3. Extending from this wall were stubs of poles that had apparently supported pieces of adobe and stone that had served as the top of the now collapsed tunnel. We found no evidence of a vertical flue, but the remaining wall was only about 2.0 ft. high.

Figure 54. Excavation progress on Mound B, Structure B, Room 1. The large metate has been removed and a little bit of the fill in the hearth. View is to the east.

Figure 55. Structure B, Room 3, in Mound B with floor of ventilator tunnel through the east was of the kiva and into the northwest corner of Room 3. The wall between Rooms 2 and 3 forms the north wall of the tunnel. Note paved floor of the tunnel. View is west.

Figure 56. Structure B, Room 3, of Mound B. Details of ventilator tunnel in northwest corner of Room 3. Note charred stubs of poles in Rooms 2-3 wall which had probably supported the roof of the tunnel. View is northwest.

Figure 57. Metate in the southwest corner of Room 2 of Structure B under Mound B. Room 3 is across the wall to the left, whereas Room 1 (the kiva) is across the wall in the background.

Figure 58. Looking west during exposure of habitation features in Rooms 3 and 1 of Structure B. Ventilator in Room 3 is in foreground. Mr. Sallee is uncovering the hearth while in the background Mr. Bishop is investigating the possible sipapu.

Sipapu. The possible sipapu (Figs. 58 and 65) was on the east-west axis and some 2.0 ft. from the west wall. It was 0.34 ft. in diameter, 0.75 ft. deep, and filled with brown earth. However, there was a similar pit 2.5 ft. to the southeast, so that the former was not unique and therefore might not have been a sipapu.

Post Molds. The post molds (Fig. 69) on the north-south axis, 2.5 ft. from their respective walls, were 0.7 and 1.0 ft. in diameter and 2.0 and 2.3 ft. deep. Each had a piece of rock in the bottom and specks of charcoal in the fill. Presumably the posts had supported a viga that supported the roof.

Ash Pit. A pit (Fig. 63) between the north post mold and the adjacent wall was oval with diameters of 1.6 and 2.3 ft. and a depth of 1.5 ft. measured from the upper floor of the room; the walls were vertical. The fill, badly disturbed by rodents, contained a few miscellaneous artifacts and, especially in the upper part, considerable gray ash. Included were sherds from a black-on-white bowl, most of which was found between the floors in the northwest part of the room. Lying partially in the mouth of the pit was a mano. Apparently the pit was dug from the lower floor, and when the room was refloored the pit was sealed off. That portion of the upper floor over the pit later settled into the loose,

Figure 59. View west while removing fill from hearth in Room 1 of Structure B. At this point, the stones lining the hearth had not yet been reached. The dark color is from moisture. The somewhat raised rim of the hearth is apparent..

Figure 60. View south of hearth in Room 1 of Structure B after cleaning it out. Note stone slab floor in the inner hearth.

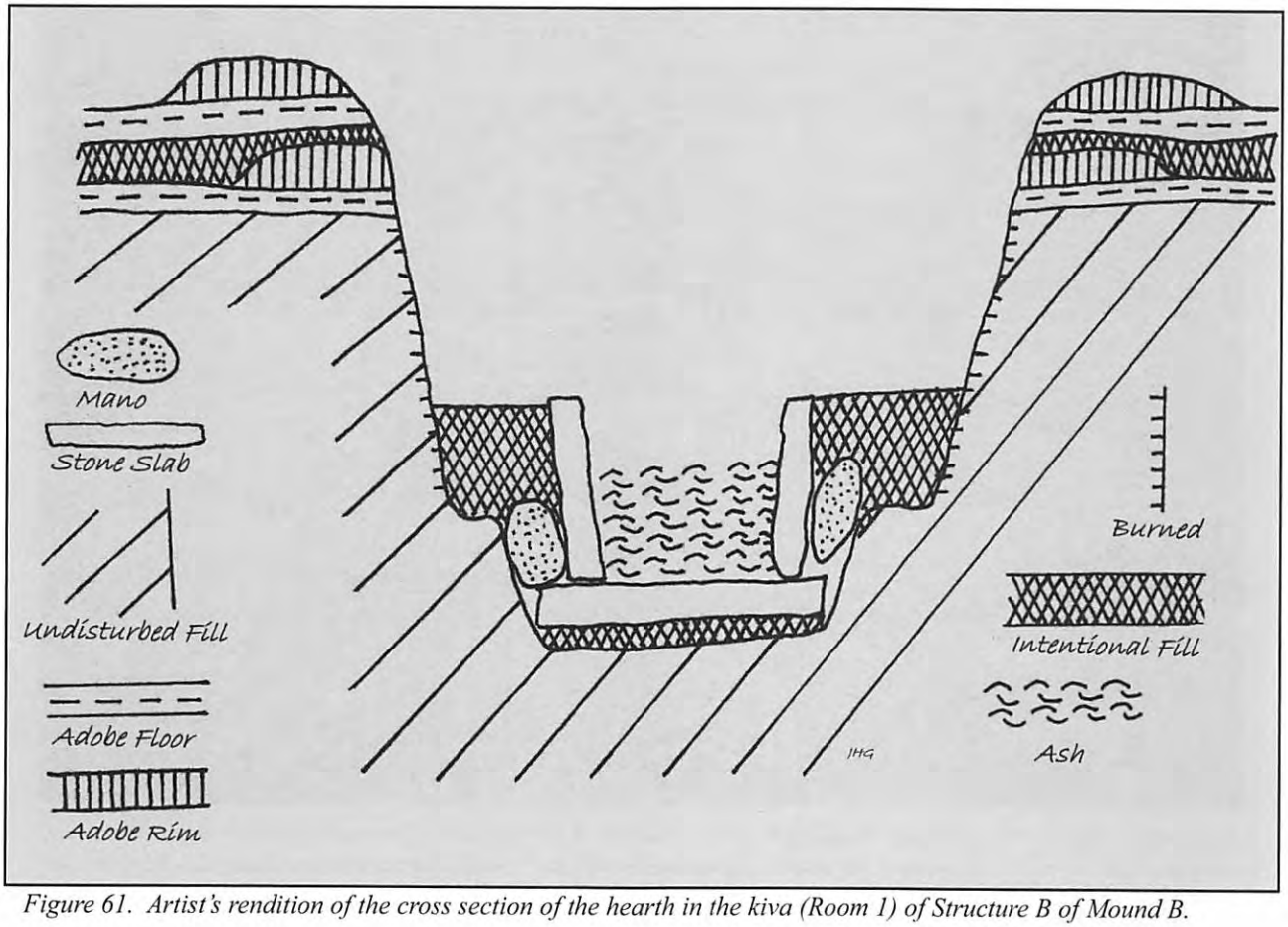


Figure 61. Artist's rendition of the cross section of the hearth in the kiva (Room 1) of Structure B of Mound B.

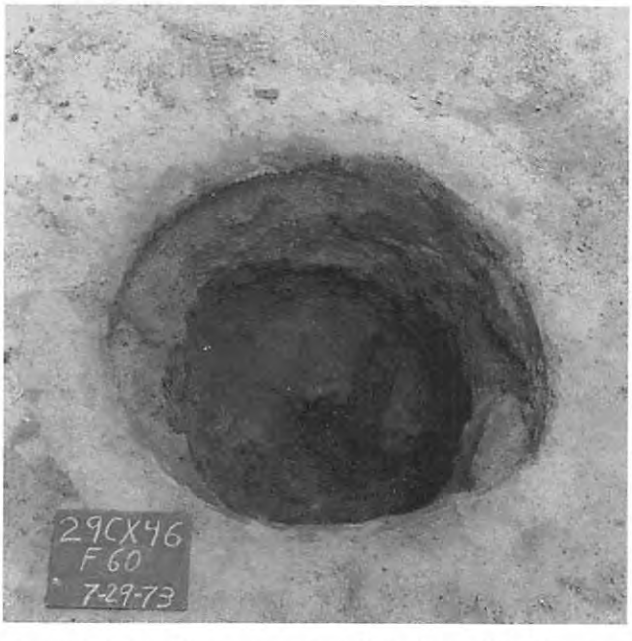


Figure 62. Looking east at hearth in Room 1 of Structure B. The stone slabs and manos have been removed. Note ledge about half way down which is at the level of the top of the inner hearth pit.

Figure 63. View north of Structure B, Room 1, where a pit found adjacent north wall contained much ash, apparently the ash pit for the kiva. Note layering in the adobe wall.

Figure 64. Eastern two-thirds of kiva (Room 1) in Structure B at Mound B. The central hearth has been cored, ventilators in the east wall opened, the ash pit against the north wall cored, but the interior post holes have not yet been cored. Note the double thickness of the adobe rim around the hearth. Portions of Rooms 2 and 3 are beyond the far wall. View is to the east.

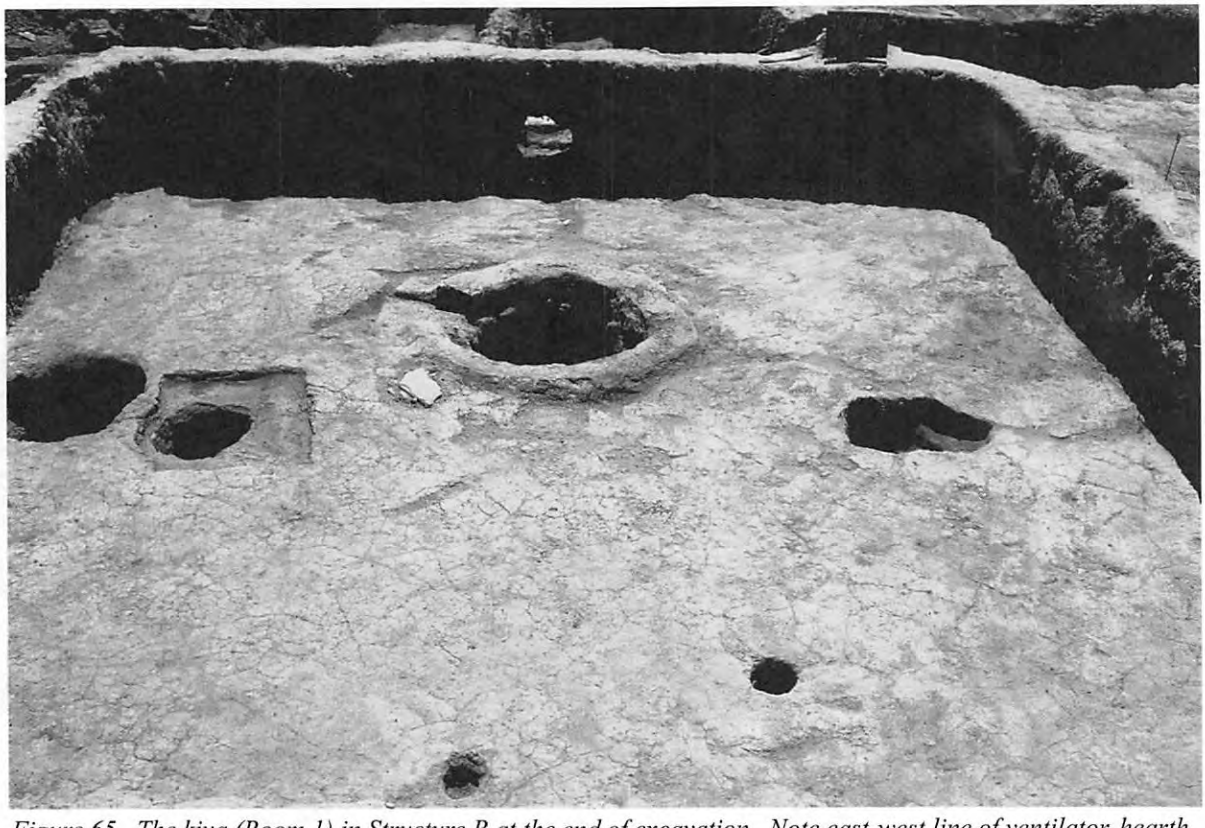


Figure 65. The kiva (Room 1) in Structure B at the end of excavation. Note east-west line of ventilator, hearth, and north-south alignment of ash pit, north posthole, hearth, and south posthole. View is to the east.

rodent disturbed fill.

Rooms #2 and #3. We determined through test pits that other rooms had surrounded Mound B's Room #1 on the north, east, and south sides (Fig. 47). There may also have been rooms on the west side, but we did not explore in that direction and did only enough testing to the north to determine that there had been a room or rooms there. We did expose the entire outside of the east and south walls of Room #1.

Extending about 12 ft. east from the center of the east wall of Room #1 (the kiva) was a slightly curved wall that separated Rooms #2 and #3 (Figs. 55-58). Room #3, of undetermined width, was 12 ft. long and shared the south half of the east wall with the kiva and the east wall of Room #4. In the northwest corner of Room #3 were the remains of a section of the kiva's ventilator tunnel. Immediately north of Room 33 was Room #2, also 12 ft. long and of undetermined width. Room #2 shared the north half of the east wall of the kiva and the east wall of Room #6. On the floor in the southwest corner of Room #2 was a trough metate.

Rooms #4 and #5. Immediately south of the kiva (Figs. 66-69) and sharing most of its south wall was Room #4, 12 ft. long and 4.5 to 5.5 ft. wide. The end walls of Room #4 abutted the wall of the kiva where the straight section gave way to the curved corners. When Room #3 was built, the space left by the curved corner was filled in with adobe, forming a straight west wall for Room #3. The two south corners of Room #4 were also curved. Immediately south of Room #4 was Room #5 of approximately the same size. In the southwest corner of Room #5 was a trough metate that had been turned upside down (Figs. 67 and 69).

Figure 66. Excavating in the east end of Room #5 of Structure B of Mound B. Part of a metate is being uncovered in front of the excavator.

Figure 67. The trough metate uncovered at the east end of Room #5 of Structure B of Mound B. It was found inverted, but it is shown right side up here.

Figure 68. Looking west at Room #4 of Structure B, and the outside east wall of that room. Note how wall abuts the southeast curved corner of Room 1. The south wall of Room #4 is on the left, whereas the kiva (Room #1) is beyond the wall to the right.

Figure 69. View north along east walls of Rooms 5, 4 and 1 of Structure B (Mound B).

Mound F and Structure F

Structure F, which formed the core of Mound F (Figs. 70-91), the largest mound at the site, was about 50 ft. across with wall remnants 3 ft. high. Because the archaeological evidence was complex and confusing, only the central portion could be interpreted satisfactorily. In fact, midway through the excavation we considered the possibility that the structure had been more than one story high, an idea that in the end we abandoned.

Our sweeping of the surface of Mound F before excavation revealed the outline of a nearly square room, centered in the mound. We ultimately determined that there had been at least two building phases prior to construction of this, a Phase Three room, and that there may have been use of the mound after the Phase Three rooms had been abandoned.

Phase Three of the structure was oriented on semi-cardinal directions. The walls, all of coursed adobe, were 0.7 to 1.0 ft. thick and the floors were of puddled adobe. In addition to major rebuildings of the structure, rooms had been refloored several times. The repeated reflooring had been necessitated by the settling of floors into unconsolidated detritus fill, extensively disturbed by rodent activity. In places the fill had settled as much as 1.0 ft., distorting the floors and making them difficult, and in some places impossible, to follow.

Fortunately, one wall provided vertical continuity. With each phase of rebuilding, the northwest wall of the central room was constructed directly on top of the remains of an

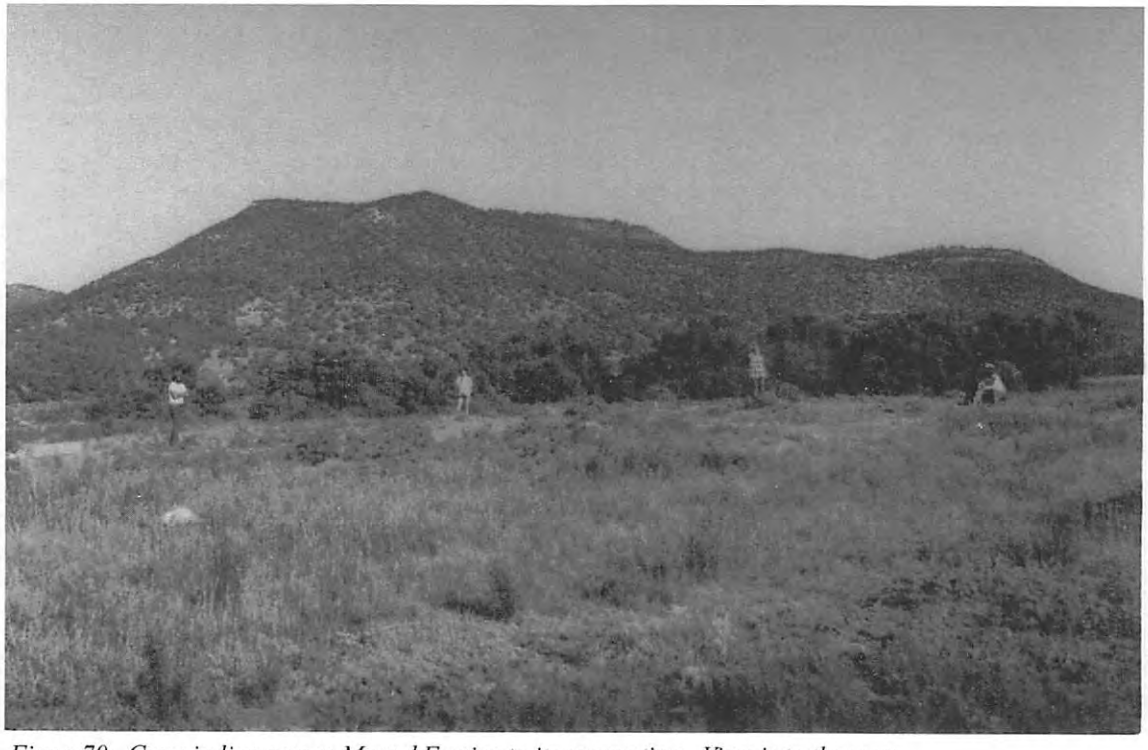


Figure70. Crew in line across Mound F prior to its excavation. View is to the west.

Figure 71. Crew sweeping Mound F surface to expose and trace outline of walls of associated structure.

Figure 72. The crew skimming off the surface of Mound F before its excavation. View is to the west.

Figure 73. Bill Sallee (at transit) and Doug Bishop mapping the site from the edge of Mound F.

Figure 74. View northwest of alidade mapping of Structure F at Mound F. Note the scattering of apple trees in the background. These trees are the remnants of a once commercial orchard, and they are the basis for the name given the archaeological site.

underlying wall.

Phase One. In the first building phase (Figs. 77-78) the structure had consisted of at least five rooms built on the original ground surface. Room sizes, however, could not be determined because our limited excavation exposed only a small portion of the structure at this phase. In the middle of the area covered by the mound, two parallel walls 6 ft. apart, but of undetermined length, abutted the midsection of the wall that continued vertically through the mound. One of these two walls continued on the opposite side of the abutted wall for an undetermined distance. No internal features were found at the lowest level.

Phase Two. The central room of the second building phase (Figs. 79-82) had been about 14 ft. by 16 ft. Its floor had been laid over the truncated bases of the two parallel walls of the first phase and extended about 4 ft. to either side of them. Between, and on either side of the parallel wall bases, still 0.5 to 1.0 ft. high, the puddled adobe floor of the second phase of the structure had settled markedly into unconsolidated fill. The only remaining wall of this second phase room was the one that continued vertically through the mound. The other three walls had apparently settled into the underlying unconsolidated fill and/or had been removed by later construction. The size of the room was determined by the extent of the puddled adobe floor, where it could be followed.

Sub-floor Pit. Hard in the west corner of this central second phase room was a pit (Figs. 80 and 81), presumably for storage, with a depth of 1.4 ft. and a diameter of 2.7 ft. at floor level. Its maximum diameter, 3.3 ft., was at the bottom. The pit wall showed no evidence of burning, but the upper half of the pit was filled with chunks of burned adobe. Apparently the pit was half full of unburned material when the structure burned and the burned adobe fell into the pit. After burning the room was refloored with puddled adobe, sealing off the pit. No other features were found in this room and not enough digging was done to define surrounding rooms at this level.

Phase Three. The best preserved room (Figs. 82-88) in Mound F was the one revealed by our sweeping the surface of the mound. The wall bases, 0.7 to 1.5 ft. high, were easy to follow except where a pot hunter's pit, about four ft. across, had taken out a section of the northwest wall (Fig. 82). The room, slightly off square, was about 13 ft. wide and 14 to 16 ft. long. It had been refloored at least two times. The northwest wall had been built on top of the earlier "continuity" wall bases. The other three walls were approximately in line with and directly above where the walls of the second phase room would have been. That is, at the edge of the adobe floor of the Phase Two room.

Hearths. Slightly off center in the floor of this Phase Three room was a hearth (Figs. 82, 84, and 88) with an

Figure 75. Metate sections recovered during excavations of Mound F.

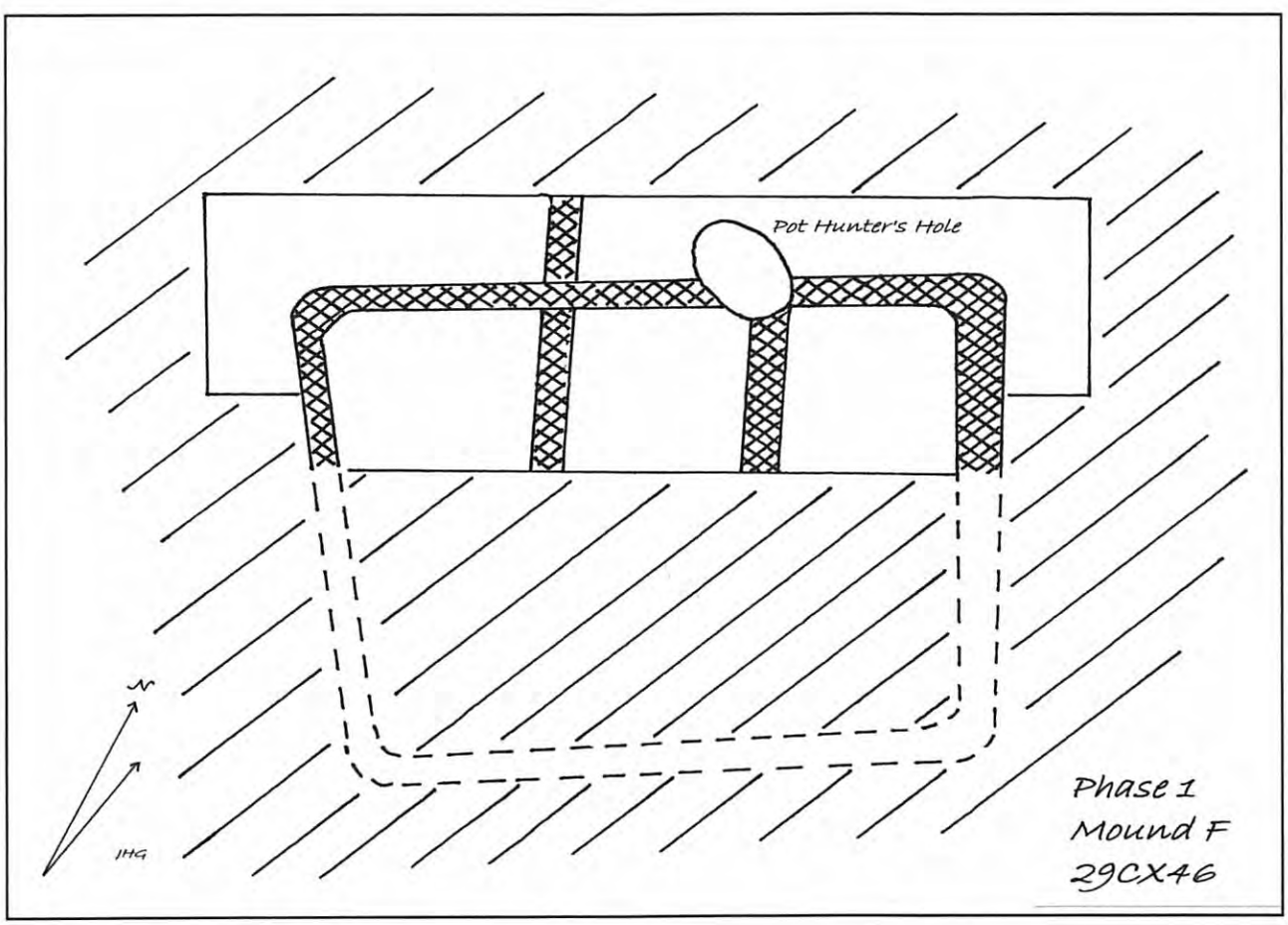


Figure 76. Plan view of excavated portion of what is believed to be the Phase One of Structure F in Mound F.

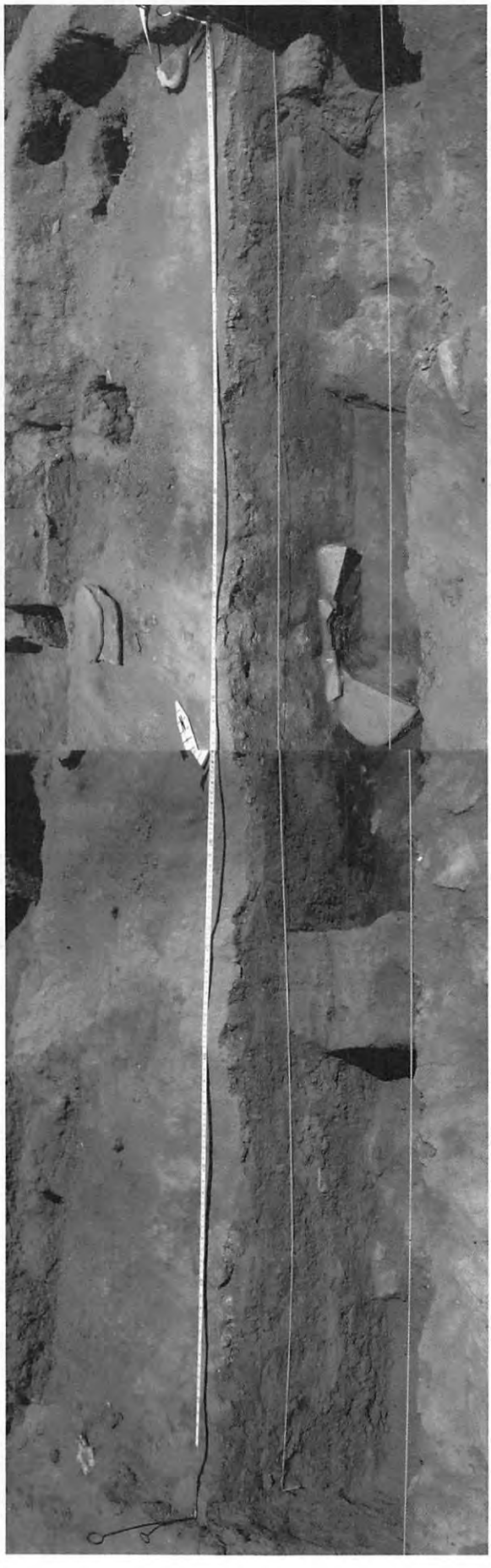


Figure 77. Matching sections of the northwest wall profile as visible in the trench across Structure F of Mound F. This trench parallels and is 4 feet from the southeast end of the northwest wall of the large room of Phase 3 construction. The bottom of this trench is the original ground surface. The wall bases, 3 and 11 feet from the left end, were of Phase 1 construction and were left at this height when the Phase 2 floor was built over them. Note how the Phase 2 floor had settled into the unconsolidated fill and was draped over the wall bases. The top level in the profile is the floor of the large Phase 3 room.

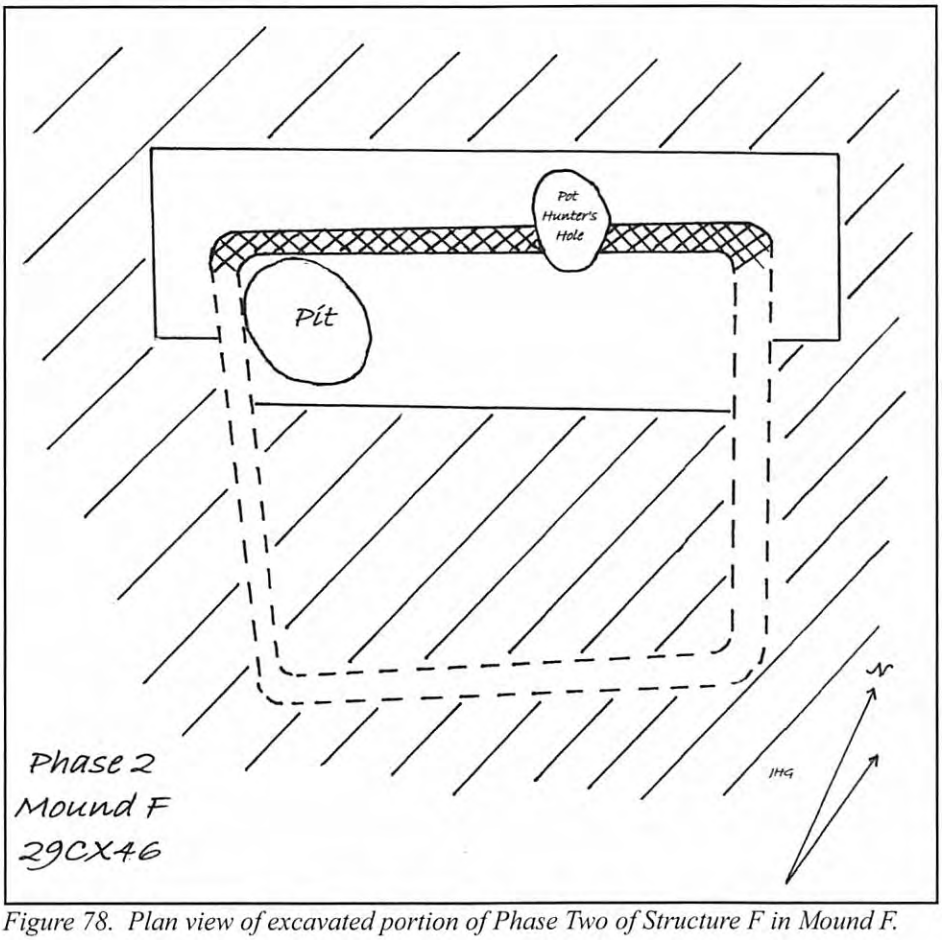


Figure 78. Plan view of excavated portion of Phase Two of Structure F in Mound F.

Figure 79. Ruth Dye cleaning out the large pit associated with Phase Two of Structure F in Mound F.

Figure 80. The large pit in the Phase Two part of Structure F after having been cleaned out. View to northwest.

Figure 81. Example of the rodent disturbance between floors in Structure F. Such disturbance accounts for much of the sinking into unconsolidated fill associated with Structure F..

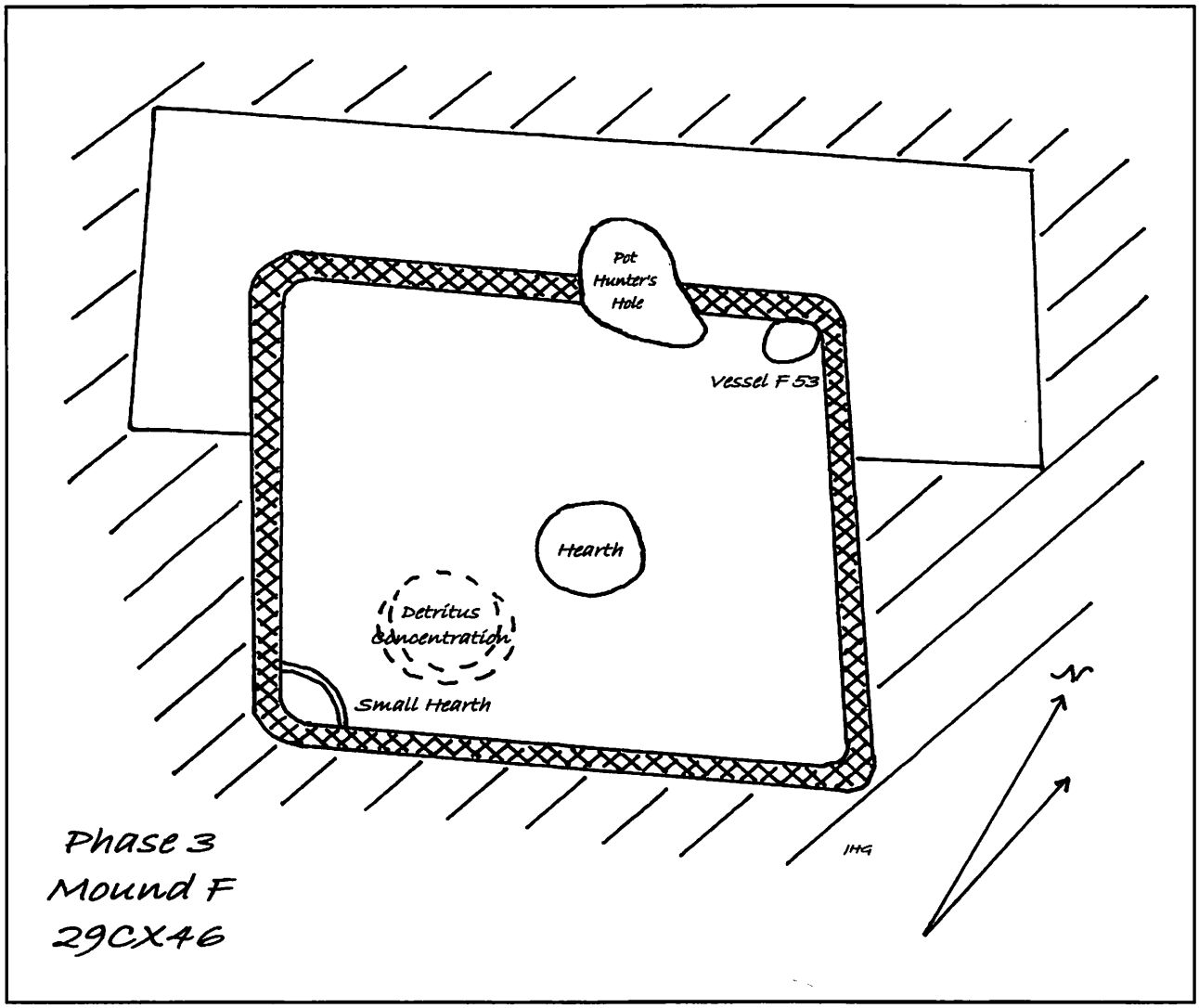


Figure 82. Plan of excavated room associated with Phase Three construction and use of Structure F in Mound F.

inside diameter of 2.4 ft. and a depth of 0.9 ft. It contained a layer of ash 0.5 ft. thick and was surrounded by an adobe rim 0.5 ft. wide and 0.3 ft. high. Lying partially over the hearth was a thin stone slab about 1.5 ft. by 1.6 ft., possibly a fallen hatch cover or deflector, but apparently too small to have been a hatch cover.

A second much smaller and less well-defined hearth was located in the south corner of the room. This hearth, about 1.0 ft. across and 0.2 ft. deep, was encircled on two sides by a semicircular adobe rim while the room corner enclosed the other two sides. A stone slab was at the bottom of the hearth.

Ceramic Vessel Set in Floor. Buried in the north corner of the room was a large pottery vessel (Figs. 85 and 86, described in the section on ceramics) with a height of 1.1 ft. and a maximum diameter of 1.3 ft. Also against the northwest wall and 4 ft. from the north corner was a pit 1.3 ft. deep and 1.0 ft. in diameter. This was of a size that it might once have contained a pottery vessel that had been removed prior to the abandonment of the room.

Intrusive Ceramic Vessel. In an attempt to locate other rooms adjoining the large square central room in building Phase Three, a test pit was dug immediately outside the north corner. No abutting walls were encountered but much of a large corrugated jar, of a type entirely foreign to the site, was recovered. This intrusive vessel is described in the section on ceramics (Fig. 106).

Since we found no evidence of walls of rooms abutting or joined to the large square room, our best interpretation is that the vessel had been outside and perhaps against the room wall on the same level. When the room collapsed, the vessel would have been buried under fallen adobe from the wall. The sherds were concentrated in a limited area, but not on a defined surface. A few large sherds appeared to have been broken in place, but there was no suggestion that the entire vessel was broken in place.

This was the only concentration of sherds from a single large vessel, except for the four complete vessels set into floors, that we encountered. Since the vessel was of a type foreign to the site and was apparently not inside a structure,

Figure 83. A Chase Ranch horse inspecting Ruth Dye's excavation technique while she and Jean Youker continue to clear the upper Phase Three level of Structure F in Mound F.

Figure 84. The cleaned out central hearth of the large excavated Phase Three room in Structure F. Note the stone slab, possibly a hatch cover, partially over the rim of the hearth.

Figure 85. Rim of a large pottery vessel, in situ, first exposed in floor of large Phase Three room of Structure F, Mound F. Top is west.

Figure 86. Jean Youker further exposing the large pottery vessel (F53 in Figure 85) associated with the large Phase Three room of Structure F.

Figure 87. Ruth Dye after cleaning off an unusually well preserved section of puddled adobe floor in the Phase Three part of Structure F, Mound F.

Figure 88. Ruth Dye (left) cleaning hearth (F72) while Jean Youker is cleaning the floor near F47 of the Phase Three area associated with Structure F of Mound F.

our conclusion is that it was not functionally a part of ongoing activities in the pueblo and probably arrived at or near the end of occupation of the site. It did however help date the site; the neatly executed indented corrugations support a Pueblo II date, or at least a pre-Santa Fe Black-on-White date.

Phase Four. Phase Four, if indeed it represents aboriginal activity, consists of a trash deposit just above the floor of the central room in Phase Three and just under the surface of the mound. The detritus concentration was 0.7 to 1.0 ft. thick and about 1.5 by 2.0 ft. across, but no outline of a pit could be found. Along with broken pottery, non-human bones and chunks of burned adobe were parts of the three bones of a human elbow in articulation relationship. (Only scattered fragments of human bones were found elsewhere in the site.) This detritus, which appeared to have been somewhat sorted with bone mainly in one part of the concentration and pottery in another, was probably from back dirt, consolidated through time, from the pot hunter's pit

Figure 89. Looking southwest at end of exposing Structure F. The upper part of this view is the unexcavated portion of the Phase Three large room floor. Note hearth and the settling of the floor, especially to the left. The long profile across the middle is the opposite side of the trench from the profile shown in Figure 77. Extending into the trench are two wall bases of Structure One. On top at the right hand base is a later wall which forms part of the cornering of four rooms. The southwest and northwest sections of these crossed walls are part of the wall that provides vertical continuity through the structure.

Figure 90. Looking northwest at Structure F at end of excavation. This shows much of same area as Figure 89. To right is the unexcavated parth of the large Phase Three room. Note the hearth, the settling of the floor, and th edge of the test trench shown in Figure 77. In the lower left corner is the large storage pit associated with Phase Two construction. The wall forming the left limit of the major excavation extends vertically through the structure, providing continuity. Sherds of the intrusive large corrugated vessel were recovered from the L-shaped excavation at the upper left.

Figure 91. Looking southwest at Structure F at end of excavation. This shows much of the area illustrated in Figure 90. The floor of the Phase Three house is to the left. Its central hearth is near the middle; the small corner hearth has been removed by the excavation to the upper left. The Phase Two pit is in the upper right. The Phase One floor is to the right and a section of the northeast wall, cleared on both sides, is to the lower right.

noted in Phase Three.

Summary – Structure F. In summary, an initial block of at least five rooms, but of uncertain configuration, had been built on the original ground surface (Figs. 89 and 90). Above this was a "stack"of two square rooms about 15 ft. on a side. Surrounding these, in at least Phase Two, were other rooms, probably all smaller. At least three building phases were represented. Apparently the structure had burned twice and was rebuilt each time. Between the floor of the third-phase room and the surface of the mound was a concentration of detritus, perhaps deposited by the occupants but more likely by a modern pot hunter.

Discussion of the Structures

The amount of excavation in the three mounds was roughly the same, but the quantities of artifacts recovered were noticeably different. This is especially true when Structure B is compared to Structures A and F. Pottery and chipped stone artifacts were noticeably fewer in Structure B. The large numberr of manos in Structure B, especially in Room 1 (the kiva), can be accounted for in part by their inclusion in the hearth and ventilator, presumably for some non-utilitarian purpose. The number of manos from rooms in Structure B other than the kiva is roughly the same as found with the other structures. Thus, the artifact counts (Table 1) suggest a greater secular or domestic use of Structures A and F than of at least Room #1 in Structure B.

Table 1. DISTRIBUTION OF ARTIFACTS AT CHASE ORCHARD PUEBLO.

	Mound			Site	
	A	F	B	Gen.	Total
Pottery					
Taos Gray					
Taos Plain (sherds)	1216	1202	358		2736
Taos Plain (vessels)	2				2
Taos Incised (sherds)	369	126	70		574
Taos Incised (vessels)	1	1			2
Taos neck banded (sherds)	1	2			3
Pipe fragments		2			2
??Corrugated (one vessel) (sherds)		56			56
Taos Black on white (sherds)	77	33	16		126
Taos white (no paint)(sherds)	21	9	4		34
Taos Black on white (bowl)			1		1
Stone Artifacts, Chipped					
Projectile points,small triangular					
Unnotched	3		1		4
Side notched	5	6	2		13
Corner notched (stemmed)	5	3	1		9
Projectile point, large , side notched	1				1
Projectile point, Archaic	1				1
Knives, triangular		3	1		4
Drill fragments		2	1		3
Stone Artifacts, Ground					
Manos and fragment	14	16	29	9	68
Metates, whole			3		3
Mortar		1			1
Maul	1				1
Pipe fragment			1		1
Sandstone abraders		3			3
Bone, Antler and Shell Artifacts					
Scapula "knives" and fragments	3	4	4		11
Heavy spatula shaped knife	1				1
Awls	4	5	6		15
Shaft wrenches	2	1			3
Tubular bone beads	9	20	7		36
Bilobate shell bead	1				1
Shell ornaments (other)		1	1		2
Antler tine flaker ?		2	1		3

Chase Orchard Pueblo: The Artifacts

Introduction

As can be seen in Table 1, the total number of artifacts from Chase Orchard Pueblo is quite low as compared to that from pueblo sites in general. The artifact assemblages (Figs. 92-166) differ very little from mound to mound, suggesting contemporaneity of the structures and a limited time span for the occupation of the site. The low density of artifacts on the surface is not surprising since the site is obvious and well known to local collectors. By now even plain sherds are not abundant on the surface. The absence of large heavy whole metates may be attributable to the fact that they are prized by collectors and are seen in many ranch yards. Very few metates were recovered from the rooms excavated. Perhaps they were more often used outside or on the roofs of the structures and ended on the surface of the ground. On the other hand, manos were abundant within the structures.

The low artifact yield is difficult to reconcile with the long occupation suggested by the multiple rebuildings of the structures. Evidence of the burning of structures, followed by rebuilding, might be interpreted as evidence of ceremonial significance or of attacks by hostile neighbors. Internal fighting could well have resulted from competition for the desirable farmland in the lower Poñil Canyon at a time when drought was making neighboring areas less productive for farming. Although we do not have direct evidence of drought conditions in the Cimarron area, it probably did not escape from the droughts of the 1100s that affected much of the Southwest.

Direct evidence of warfare, such as mutilated skeletons on the floors of burned rooms, was not observed in the three structures excavated. Perhaps the close clustering of structures could have been, at least in part, a response to needed defense.

The artifact assemblage at Chase Orchard Pueblo clearly reflects a Pueblo subsistence pattern with primary dependence on horticulture and very little on hunting (Appendix I), even though a number of animal species were probably available nearby. If there were more projectile points and other chipped stone artifacts here than at other Pueblo sites, some of them could have been left by the Jicarilla Apaches who later occupied the valley.

The pueblo artifacts show very little evidence of extensive trade relations except for the likelihood that all of the painted pottery was imported, perhaps from the Taos area. The diverse chipped stone found in the few projectile points could reflect either limited outside contacts or the harvesting of stone from local streams. The one olivella shell recovered is from the Pacific Ocean. Such shells were traded widely in the Plains and Southwest.

Ceramic Artifacts

Gray Wares at Chase Orchard

The utility pottery from Chase Orchard can all be assigned to Taos Gray (Figs. 92-105) except for one large partially restorable corrugated vessel that is obviously intrusive. No sherds corresponding to Glassow's (1980) description of Cimarron Gray were recovered. He assigns Cimarron Gray to his Cimarron phase which he dates as following the Poñil phase.

Our sample of Taos Gray ware, apparently all locally made, consisted of four essentially complete vessels (two Taos Plain and two Taos Incised), plus 2453 plain sherds, 578 incised sherds and ten sherds with various other surface treatments. (See Table 2 for measurements of complete vessels, Figure 92 for shapes and Table 1 for distribution by mounds of sherds and other artifacts.)

Taos Plain and Taos Incised

The Taos Plain (Figs. 93-96) and Taos Incised (Figs. 97-105) vessels are identical except that the upper half of the latter have incised decoration covering about 40% of the total surface. If this ratio is representative, then the recovered sherds would represent about equal numbers of plain and incised vessels. Sherds from the bottom half of incised vessels are indistinguishable from sherds from plain vessels. Three sherds were from the bases of vessels that had been started in coiled baskets, but it is not obvious whether or not these vessels were incised or plain. The bottoms of three of the restored vessels were too pointed or round to stand upright on a flat surface. All of the restored vessels had two sets of lugs a little below the rim and on opposite sides of the vessel (Figs. 93, 95, 96, 97, 98, and 100), and each set consisted of either one or two lugs. Lugs are found on enough sherds (and not just from complete vessels) to suggest that all or most Taos Gray vessels from the site, incised and plain, had lugs. Loop handles are rare.

Decoration. The most common decoration on Taos Incised vessels (Figures 97-105) from Chase Orchard was a series of encircling grooves starting 3 to 4 cm. below the lip and continuing to the line of maximum vessel diameter. Encircling grooves were either continuous spirals or a series of circles each ending at a common "meridian." Usually the grooves were quite irregular, were 4 to 10 cm. apart, 2 to 3 mm. wide and incised with a pointed tool. On sherds incised with a blunt tool, the grooves were as wide

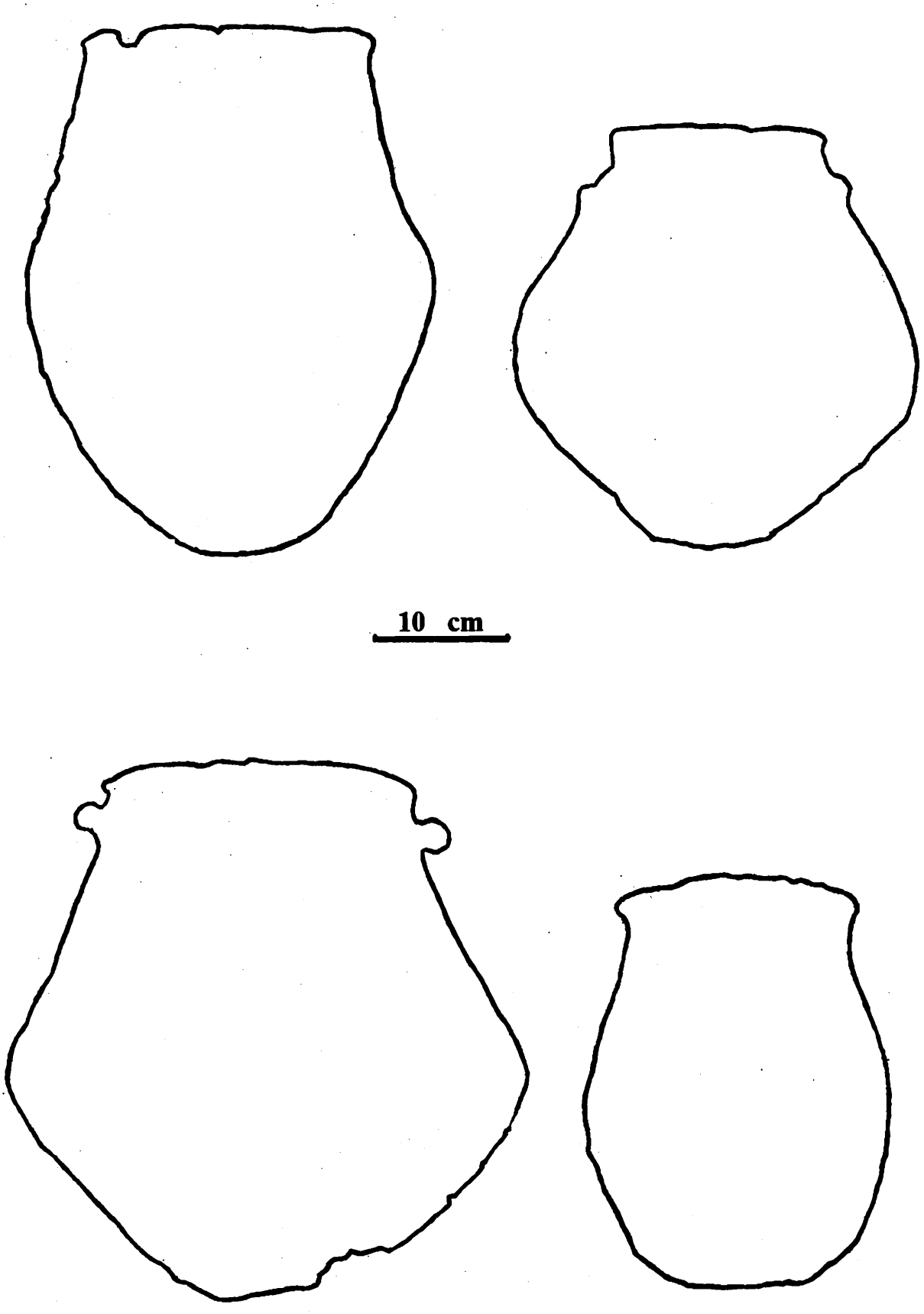


Figure 92. Profiles of restored pottery vessels found at Chase Orchard Pueblo. All are drawn to the same scale.

Figure 93. Restored Taos Gray vessel (F9) from Room #1 in Mound A. Note lugs on either side of rim. Maximum diameter: 30.2 cm. Scale is in centimeters. Photo by Warren Lail.

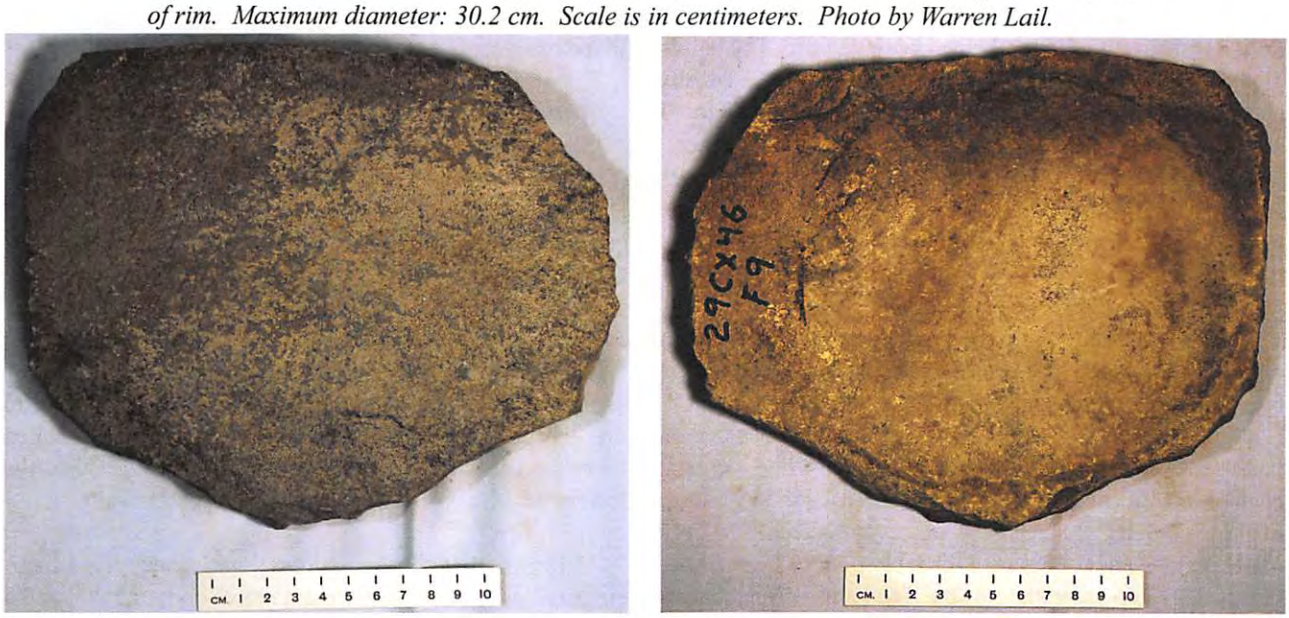


Figure 94. Both faces of sandstone lid found atop Taos Gray vessel (F9) shown above. The view on the right was the face atop the vessel; note black circle where it was in contact with vessel's mouth. Photos by Warren Lail.

TABLE 2. Whole / Restored Taos Gray Vessels from Chase Orchard Pueblo. Measurements are in centimeters.

Mound	A	A	A	F
Catalog Number	9	12	7	53
Maximum Height	32.5	30.0	39.2	43.0
Height at Maximum Diameter	14.5	23.7	19.2	19.5
Diameter at Rim	16.0	18.0	21.6	24.0
Maximum Diameter	30.2	23.7	33.8	39.7
Ratio: Max. Diam / Max. Height	0.93	0.79	0.86	0.93
Ratio: Rim Diam / Max Diam.	0.53	0.76	0.64	0.86
Ratio: Height at Max. Diam / Max. Height	0.45	0.40	0.49	0.45
Incised decoration	no	no	yes	yes
Number of lugs	two	two	two	two
Ratio: Rim. Diam. / Max. Diam	0.53	0.76	0.64	0.86

as 4 mm (Figs. 97-99).

The next most common decorative motif consisted of nested chevrons forming a herringbone pattern. The bands of chevrons were either vertical or horizontal on the vessels (Figs. 100-102). The two "arms" of a chevron are 12 to 30 mm. long, 4 to 15 mm. apart and often do not quite meet, leaving a gap at the apex. The angle between the arms varies from moderately acute to strongly obtuse. Chevrons usually occur on vessels that also have encircling lines, but the latter sometimes occur without chevrons.

Taos Gray sherds with other surface treatments are so rare that they may have come originally from other, nearby sites. One sherd, and possibly two others, were neck-banded. The "corrugation" on seven sherds classified as corrugated was highly varied and poorly executed, perhaps even unintentional. Another sherd had a row of 3 by 5 mm. oval punctations. There is not, however, as great a variety of decorative approaches on Taos Gray pottery from Chase Orchard Pueblo as at sites in the Taos area, probably because Taos Gray continued to be made longer on the Rio Grande after Chase Orchard Pueblo was abandoned.

Pottery Tubes

Three fragments of gray pottery tubes were probably parts of smoking pipes, but they were too small to indicate shape or size.

Unidentified Corrugated

Sherds from one partially restorable corrugated vessel (Fig. 106) were recovered from the upper level of Mound F. The indented corrugations compare very favorably in quality with those on vessels found widely throughout the Chaco and middle Rio Grande areas during Pueblo II time and differ markedly from the much less carefully executed corrugations on wares found associated with Santa Fe Black-on-White pottery. The implications for Chase Orchard are that this vessel is intrusive (a "trade" item) and that the poorly executed corrugated ware and associated Santa Fe Black-on-White pottery had not yet reached the lower Poñil Canyon when the site was abandoned.

The imported corrugated vessel had a maximum diameter of about 30 cm., a rim diameter of about 25 cm. and a neck diameter of about 22 cm. As a guess it would have been bout 40 cm. tall. The neatly indented coils were 8

Figure 95. Restored plain Taos Gray vessel (F12) from Room 1 of Structure A. Maximum diameter: 23.7 cm. Photo by Warren Lail.

mm. wide and started 22 mm. below the lip. The walls are 5 to 6 mm. thick. Apparently the entire vessel had been corrugated since there was no suggestion of alternating bands of plain and indented coils, of incision over corrugation or other manipulation of the surface. Nor was there evidence of handles or lugs. The paste contains fine, irregular grains of sand with occasional larger particles, and flecks of mica. The texture is noticeably finer than that of Taos Gray.

White Ware

The only painted pottery recovered at Chase Orchard has mineral paint on a thin to medium-thick white slip (Figures 107-111). I am calling all the painted pottery from Chase Orchard Taos Black-on-White and will not address the problem pointed out by Cordell (1971:15) regarding the difficulties involved in differentiating among Taos Black-on-White, Kawhe'e Black-on-White, Kawhe'e Black-

Figure 96. Details of restored plain Taos Gray vessel (F12) from Room #1 of Structure A. Top: rim of vessel; note one complete lug and base of opposite one. Bottom left: closeup of double lug. Bottom right: complete and broken lugs. All photos by Warren Lail.

on-White (Taos Variety), Red Mesa Black-on-White, etc. There are no obvious differences between black-on-white pottery from Chase Orchard and the mineral paint pottery from the Taos area. Indeed, it is my opinion that all the painted ware from Chase Orchard was imported, perhaps from the Taos area.

Paint on Taos Black-on-White from Chase Orchard Pueblo was usually black but sometimes was brownish or even red. White slipped sherds without any painted designs may be from unpainted portions of painted vessels or from undecorated vessels. Shapes include hemispherical bowls, small-necked ollas and possibly a seed bowl.

Decoration. The only white ware vessel complete enough to show design layout was the partial bowl (Figs. 107-108) found between the floors of the kiva in Mound B. Except for differences in design elements, the layout appears to be representative. On bowls, decoration (Figs. 109-111) is restricted to the inside in a band about 5 cm. wide just below the rim. The band is enclosed between two framing lines and there is no suggestion of quartering of the layout. Design elements are highly varied. Most common in addition to straight lines are parallel lines, straight

Figure 97. Restored Taos Incised vessel (F7) from Room 3 of Mound A. Maximum diameter: 33.8 cm. Provenience: F7, Room 3, Structure A. Photo by Warren Lail.

Figure 98. Details of the rim and lugs on the vessel shown in Figure 96.

Figure 99. Details of incising manifest as decoration on the vessel shown in Figure 96.

Figure 100. Restored Taos Incised vessel (F53) from Phase Three in Mound F. Maximum diameter: 39.7 cm. Scale at top is in centimeters. Photo by Warren Lail.

Figure 101. Details of incising of chevrons and encircling lines on Taos Incised vessel shown in Figure 100. Photo by Warren Lail.

Figure 102. Details of rim and lug on Taos Incised vessel shown in Figure 100. Scale (top) is in centimeters. Photo by Warren Lail.

*Figure 103. Taos Incised sherds; sherds marked with * are from F5 provenience; all others are F35. Scale is in centimeters. Photo by Warren Lail.*

Figure 104. Examples of Taos Incised sherds. All are from F55 provenience. Scale is in centimeters. Photo by Warren Lail.

Figure 105. More examples of Taos Incised sherds. All examples in top set are from provenience F55. The sherds in the bottom set are appropriately marked with their provenience. Scales are in centimeters. Photos by Warren Lail.

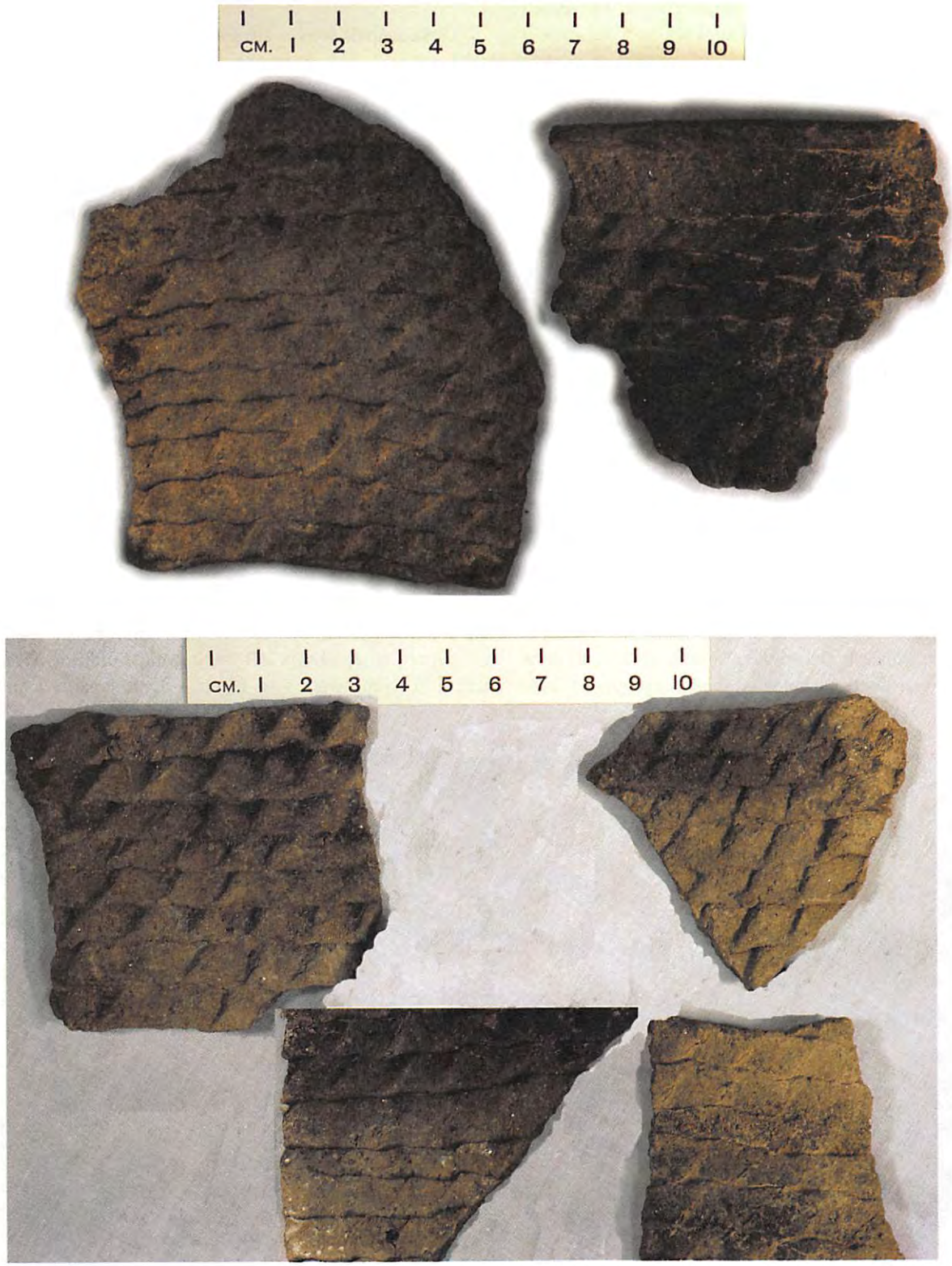


Figure 106. Sherds of unidentified intrusive corrugated vessel from upper level (Phase 3) of Mound F. Scales are in centimeters. Photos by Warren Lail.

or sinuous, enclosed in framing lines. Also represented are solid triangles, solid or negative squares, and checkerboards. Less common are negative dots, bull's eyes in squares, and dots pendant to straight lines. Straight lines area usually used in combination with these other elements and lips are sometimes painted. Brush work is carelessly to carefully executed and painted surfaces are poorly to well smoothed. Loop handles on ollas are sometimes decorated with straight lines. No lugs were found that appeared to have been from painted vessels.

The great variety of design elements represented in our sample supports the assumption that all of the painted pottery was imported from an area(s) where a substantial amount of pottery was made and decorated with a wide variety of designs, including all those found at Chase Orchard Pueblo.

Bone Artifacts

Scapulae Knives

Several unusual bone artifacts (Figs. 112, 113), made from deer scapulae and probably used as knives, are apparently unique to the Poñil Phase. On each, the spine was trimmed down to a height of about 1.0 to 1.4 cm. and left either more or less straight or curved. The narrow prespinous fossa was left intact, and the postspinous fossa was trimmed parallel to the spine, leaving a strip about 1.0 to 1.5 cm. wide. This, in turn, was ground to a sharp edge, presumably to form a cutting tool. In cross section, these artifacts are T-shaped, with the scapular spine forming the stem of the T. On at least some, the glenoid cavity was left intact and the thickening at the inferior margin of the scapula is evident. The cutting edge on some is jagged from use and/or breakage; on others this edge is nearly intact. Specimens complete with the glenoid cavity have a maximum width of 2.5 to 3.5 cm. and an overall length of about 19 cm. Where the glenoid cavity is missing, the length is about 14 cm. The four complete tools and nine sections recovered were distributed among the three mounds (Table 1).

These scapula knives are somewhat reminiscent of the bison scapula "squash knives" commonly found on sites of the Middle Missouri area on the Plains but are of quite different design.

From Pecos Pueblo, Kidder (1932:234) reports four complete specimens and a dozen fragments of what he calls "scrapers" made from flat sections of bison scapulae. None are at all similar to the Chase Orchard artifacts.

Bone "Dagger"

One highly polished bone artifact (Fig. 114) shaped like a pointed spatula or dagger blade was made from a flat section of a long bone from a large mammal, possibly elk or bison. Both edges are sharp and sturdy. It probably served as a knife for such heavy tasks as butchering or skinning. The tool is 16 cm. long, 3 cm. in maximum width and 0.5 cm. thick.

Awls

Fifteen bone awls (Figs. 115 and 116) were about equally distributed among the three mounds. All were made of splinters of mammal long bones, mostly deer, but one small specimen was probably of rabbit bone. Some had part of an epiphysis left on, but most did not. They ranged in length from 5 to 17 cm. Some tapered gently

Figure 107. Section of Taos Black-on-White bowl (F78) recovered from between floors in Room #1 (kiva) in Mound B. Photo by Warren Lail.

Figure 108. Section of Taos Black-on-White bowl (F78) found between floors of Room 1 (kiva) in Structure B. Top: close-up view of painted interior. Bottom left: outside profile of bowl. Scales are in centimeters. All photos by Warren Lail.

Figure 109. Section and neck of unusual jar of Taos Black-on-White pottery from upper level of Mound F. Scale is in centimeters. Photo by Warren Lail.

Fugure 110. Representative sherds of Taos Black-on White pottery from Mounds A, B, and F. Note the variety of design elements. Photo by Warren Lail.

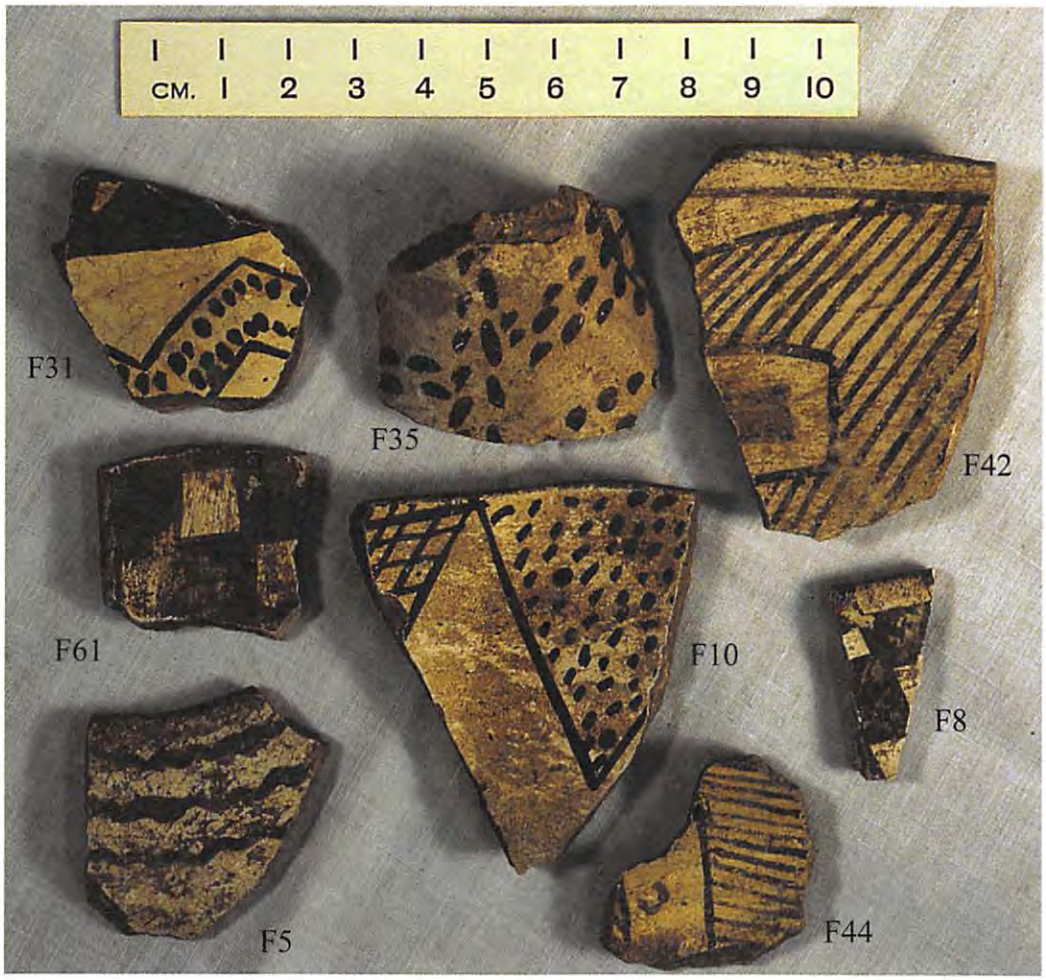


Figure 111. Representative sherds of Taos Black-on-White pottery from Mounds A, B, and F. Again, note the variety of design elements. Photo by Warren Lail.

for their full length to a sharp point while others tapered abruptly from near the point.

Antler Tine Flakers

One antler tine from Mound A and three from Mound F (Fig. 117) may have been used in pressure flaking. They are too weathered for certain identification.

Arrow-shaft Straighteners

Three bone shaft wrenches (Fig. 118) or shaft straighteners were recovered, two from Mound A and one from Mound F. All were made from mammal long bones, probably deer. One, 17 cm. long and made from an immature radius, had a worn hole with diameters of 1.2 cm. by 1.5 cm. about 6 cm. from the proximal end. A second made from a radius with both epiphyses removed, is 16 cm. long and has a worn hole 1.0 by 2.0 cm. 5 cm. from the end. The third, broken through the hole, which had been about 1 cm. across, was made from a metapodial. The hole was about 6 cm. from the distal end where the epiphysis is present.

Pendant

A bone pendant (Fig. 119), recovered from the back dirt of a pot hunter's pit in Mound F, is essentially 18 mm. square and 0.5 mm. thick. Holes, now broken out, had been drilled very close to the edge in two adjacent corners.

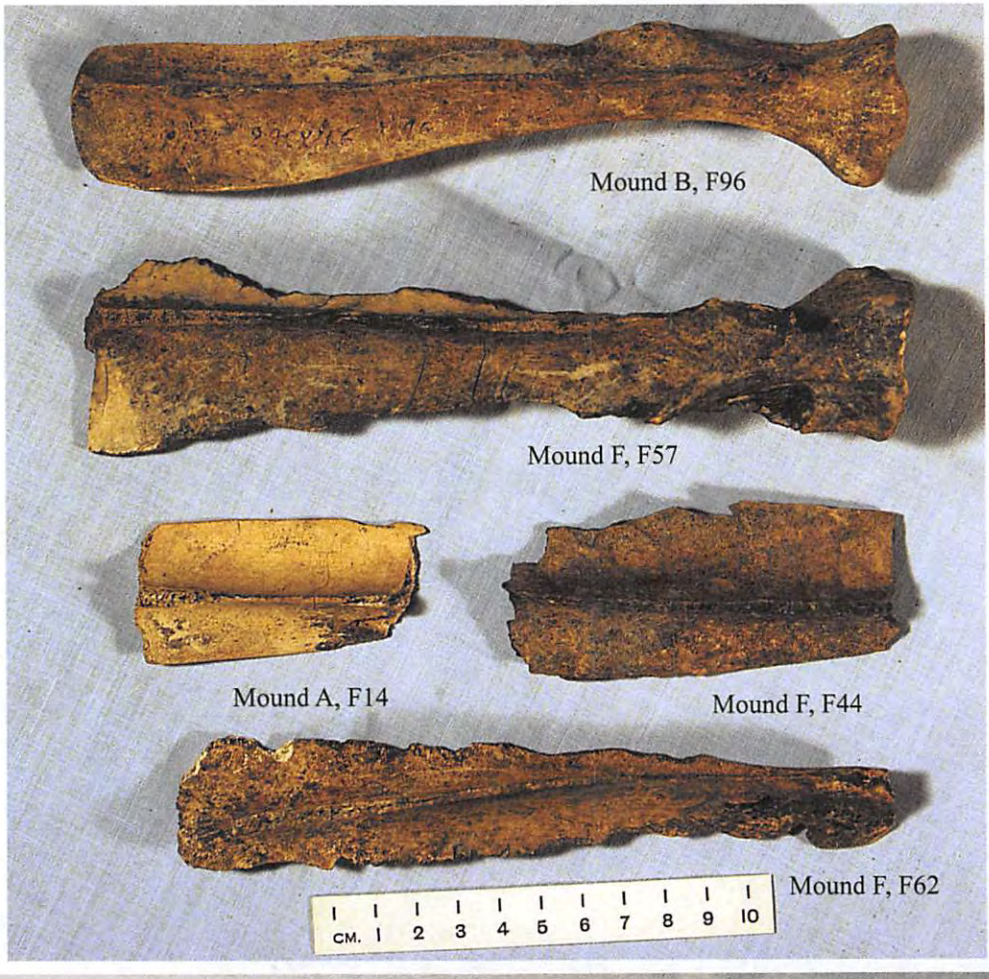
Tubular Beads

Thirty-five tubular beads (Fig. 120) made from long bones of birds and a larger one from a long bone of a small mammal were recovered. These were the most common ornaments and all three mounds are represented. The beads ranged in length from 9.0 to 18.5 mm. (excepting one which is 32.1 mm. long) and averaged 6.4 mm. in diameter with a range from 3.0 to 8.7 mm. Some showed a little polish; one had a groove incised around it, perhaps preliminary to dividing it. One bead was stuck into the end of another, perhaps as they were strung.

Shell Artifacts

Disk Bead

A shell disk bead (Fig. 121) was found in the kiva in Mound B. Although broken, it had been a near-perfect circle 24 mm. in diameter and 3.1 mm. thick with a well centered hole 4.7 mm. in diameter.



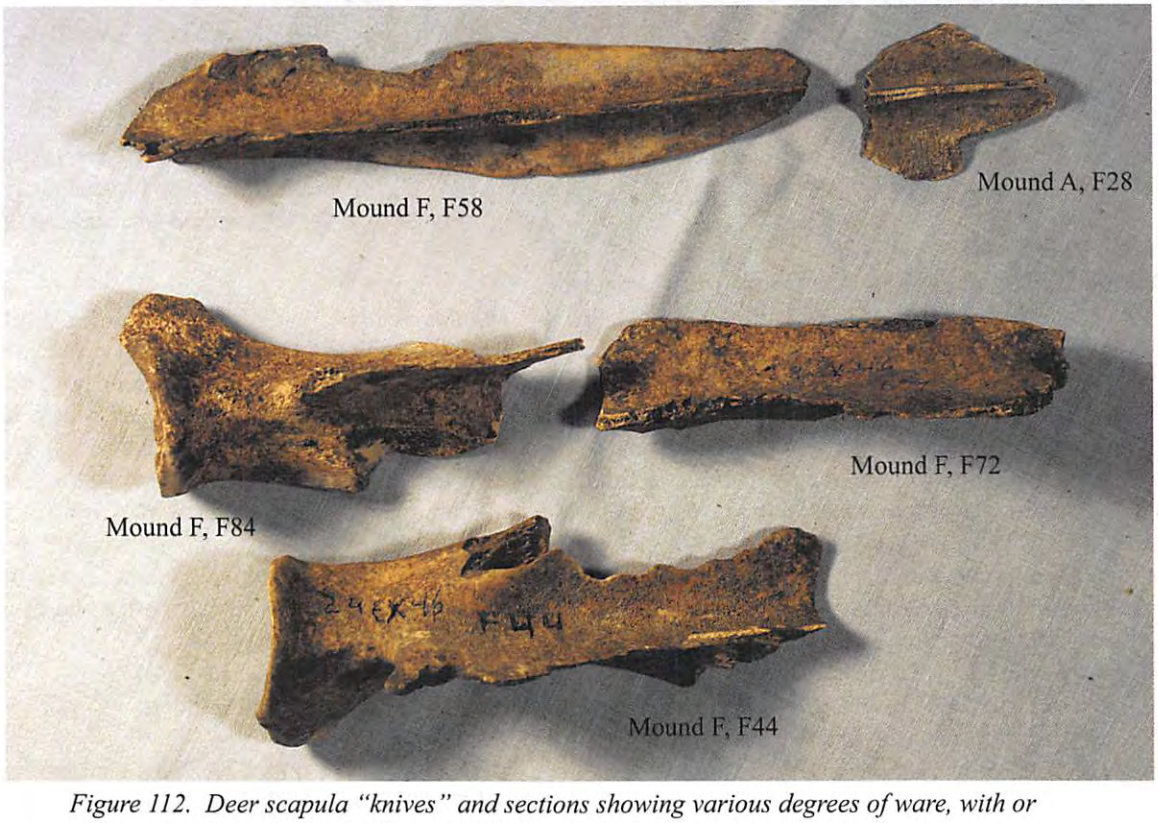


Figure 112. Deer scapula "knives" and sections showing various degrees of ware, with or without the glenoid cavity. Photos by Warren Lail.

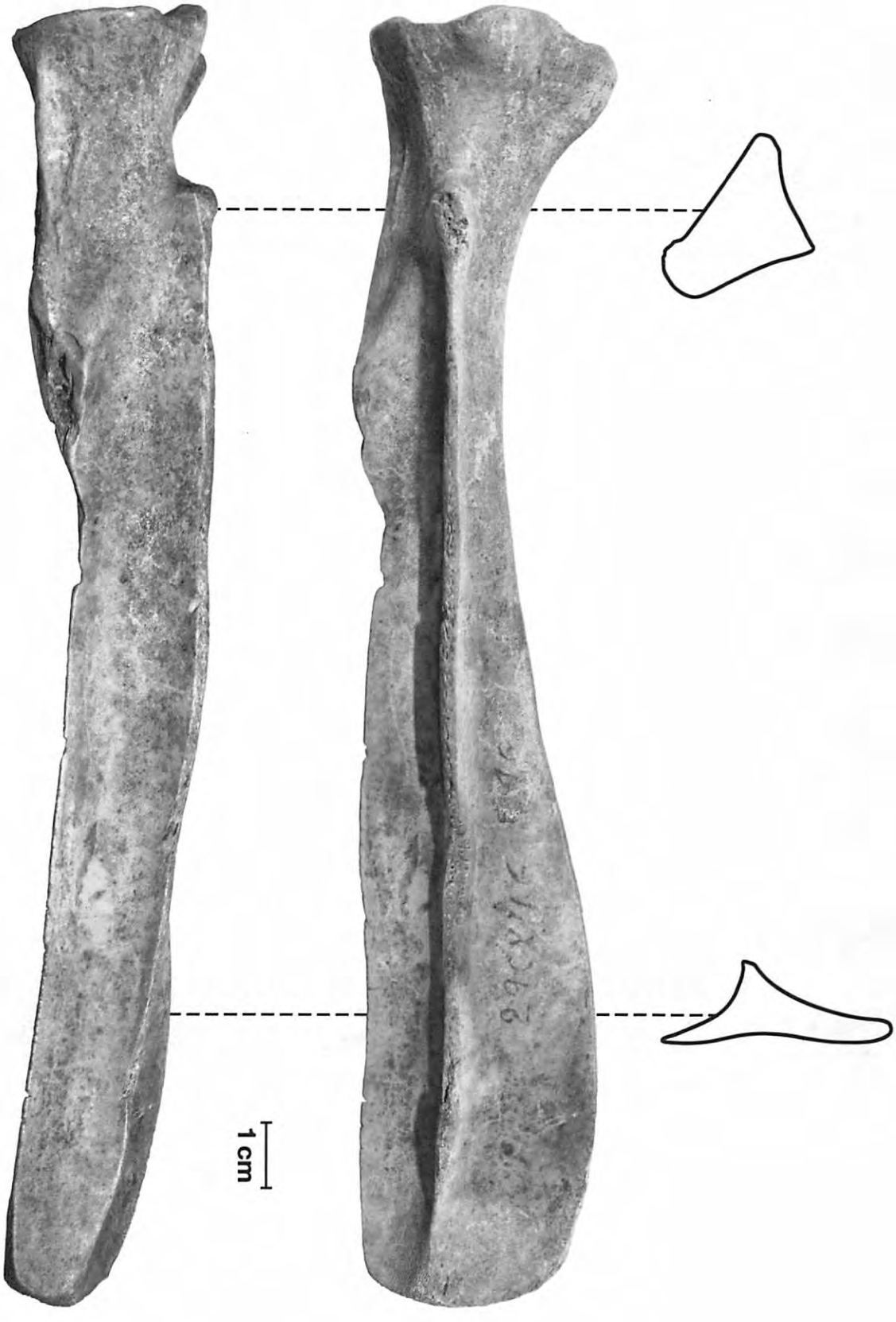


Figure 113. The most complete and best preserved example of a deer scaupla knife recovered. It came from Mound B, F96. Illustration prepared by Angie Fox.

Figure 114. Bone dagger or knife recovered from Mound A, F35. Photo by Warren Lail.

Figure 115. Awls of split and polished bone. From Mounds A, B, and F as shown. Photo by Warren Lail.

Modified Clam Shell

A small clam shell (Fig. 122) with a carefully drilled hole at the hinge was found between the two floors of the kiva in Mound B. It is 24 mm. by 37 mm. and, except for the hole and smoothing of the margins, was unmodified. An oval piece of shell (Fig. 123) may be a pendant; it came from Mound A, F35.

Modified Olivella Shell

The only olivella shell (Fig. 124) found came from the most recent room in Mound F. The tip of the spire had been ground off and about 2 mm. farther down a hole had been ground through the wall to facilitate stringing.

Bilobate Bead

One highly unusual shell bead (Fig. 125), excavated from Mound A, is of a type reported and illustrated by Alpers (1963:40, Fig. 3K), who described them as "bilobate or "Figure 8." His twelve examples came from the surface of three different localities along lower Poñil Canyon. Both his and ours were very carefully made and virtually identi-

Figure 116. Awls of split and polished bone. As shown, from contexts in Mounds A, B, and F. Scale is in centimeters. Photo by Warren Lail.

Figure 117. Deer antler tines possibly used as flaking tools. All come from Mound F, F44. Photo by Warren Lail.

Figure 118. Deer long bone sections used as arrow shaft straighteners or "wrenches". The left and center examples come from Mound A, F40, whereas the right examples is from Mound F, F44. Photo by Warren Lail.

cal in shape and size. The bilobate bead from Mound A is 9.6 mm. long, 5.0 mm. wide, 3.2 mm. thick at the perforated end and tapers to a thickness of 4.2 mm. at the other. The hole is 3.0 mm. in diameter, leaving a rim only about 1.0 mm. wide. As Alpers (ibid.) indicated, the wedge shape

Figure 119. Bone pendant from pot hunter's backdirt in Mound F. Photo by Warren Lail.

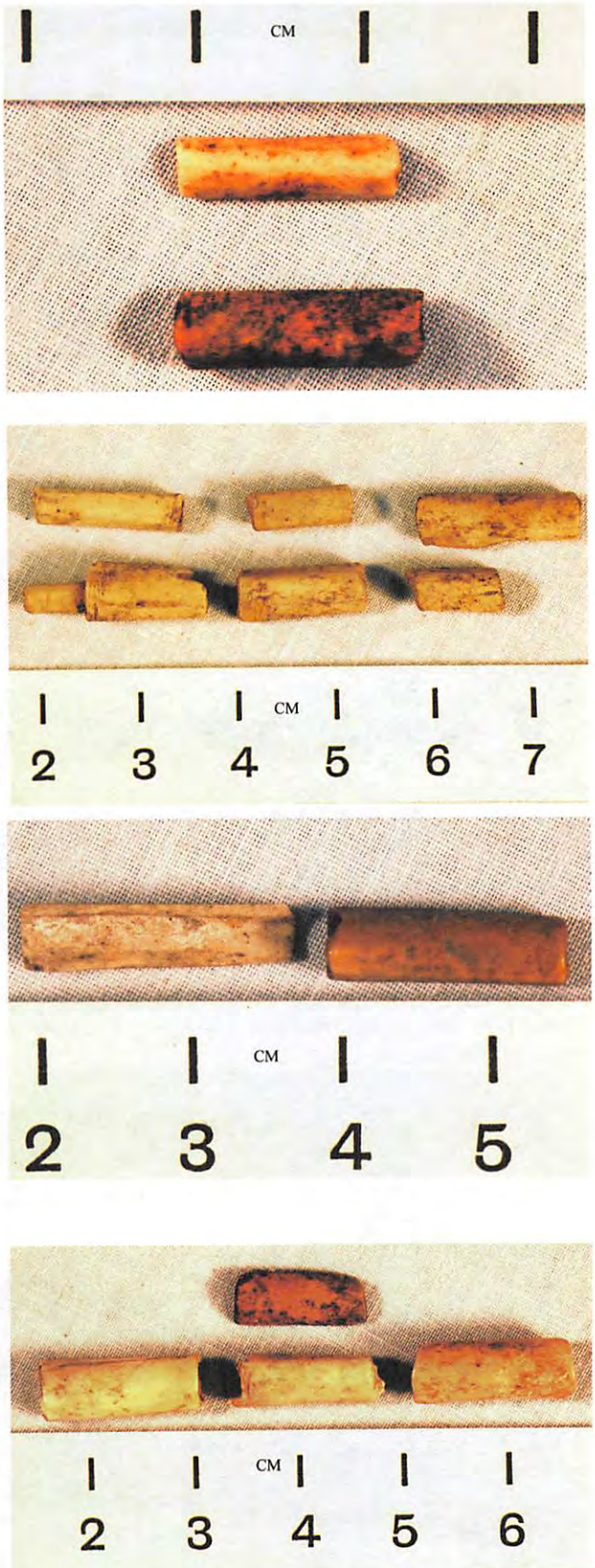


Figure 120. Tubular bone beads. Top: Mound F, F72; next down, Mound A, F5; third down from top, Mound F, F42; and bottom, Mound F, F44. Scales are in centimeters. Photos by Warren Lail.

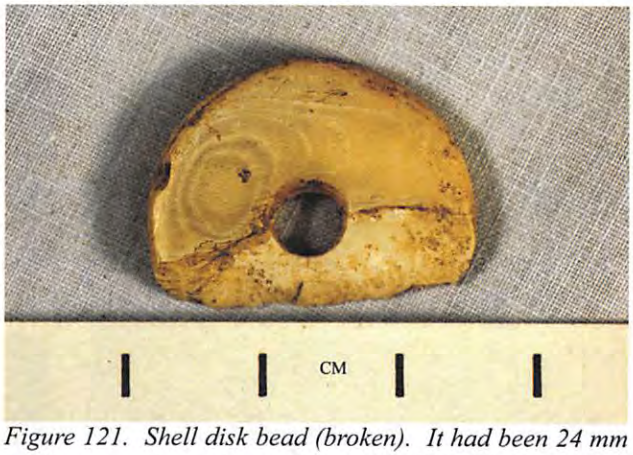


Figure 121. Shell disk bead (broken). It had been 24 mm in diameter. Provenience: Mound B, F49. Photo by Warren Lail.

Figure 122. Perforated clam shell recovered from the floor of Room 1 (kiva) of Structure B, Mound B. Photo by Warren Lail.

Figure 123. Worked shell fragment, perhaps a pendant with perforation broken out. Recovered from Mound A, F35. Photo by Warren Lail.

Figure 124. Olivella shell bead. Note that spire has been removed. Provenience: Mound F, F44. Photo by Warren Lail.

would permit the beads to hang smoothly when strung.

The bilobate shell beads may be unique to the Poñil Phase. A few vaguely similar ornaments have been reported from other sites. Two bilobate shell ornaments from Paa-Ko Pueblo, reported by Lambert (1954:158, 135), are not as well made or as symmetrically shaped or as well matched as the specimens from the Poñil. Perhaps they had served as pendants or ear bobs for the infant with whom they were buried.

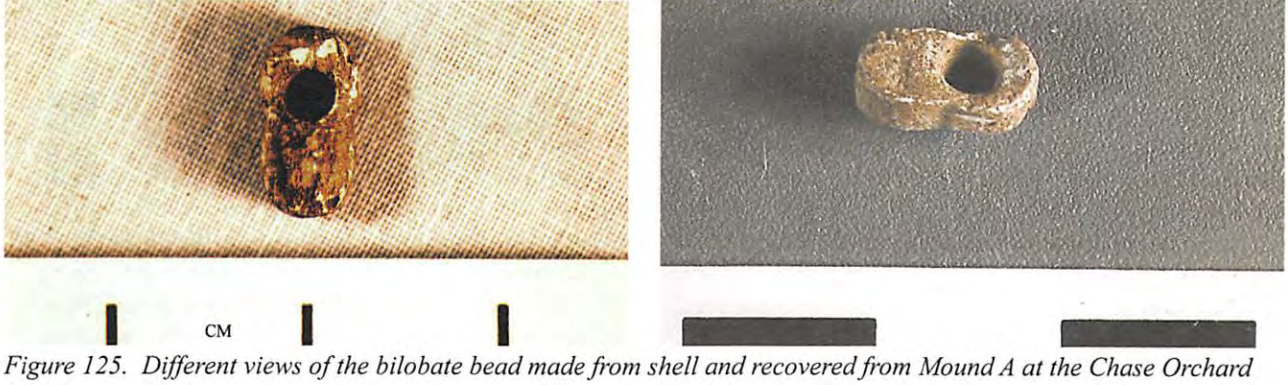


Figure 125. Different views of the bilobate bead made from shell and recovered from Mound A at the Chase Orchard Pueblo site. Scales are in centimeter increments. Photos by Warren Lail and Don Wyckoff.

One turquoise ornament from Pindi Pueblo (Stubbs and Stallings 1953, Plate 25) somewhat resembles the Chase Orchard specimen.

Chipped Stone Artifacts

Projectile Points

The projectile points (Figs. 126-142) from Chase Orchard Pueblo (Table 3) are small, reasonably well made, and represent a wide variety of materials, many not locally available. Most of the points are essentially triangular and side notched, with convex sides and bases. Unnotched points are rare. In general, the widest place on a point is at the upper edge of the notches. In some instances the notching has completely removed the basal corners. The most common place for points to break is at the notches. Complete points range in length from 12.6 mm. to 23.4 mm., in width from 10.0 to 13.9 mm., and in thickness from 2.0 to 4.0 mm. In terms of proportions, the length varies from being equal to the maximum width to being two and a quarter times the maximum width.

A very crude stemmed point (Fig. 144, bottom) from Mound A, probably Archaic, was 25 mm. long and 19 mm. wide.

The common projectile points from Chase Orchard

Figure 126. Examples of side-notched arrowpoints, the two complete ones being the pattern being duplicated most. But there are variations even here: the top having straight blade edges and a slight concave base whereas the lower right has convex blade edges and a straight base. The broken specimen could have been of either variation. Provenience and size: top, 2.0 cm long and from Structure A, F21; lower left, 1.4+ cm long and from Structure A, F22; and lower right, 2.3 cm long and from Structure F, F44. Photo by Don Wyckoff.

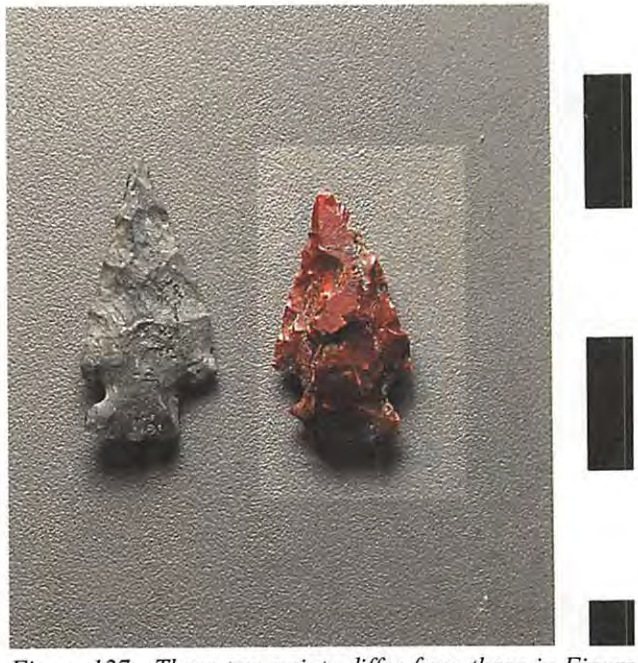


Figure 127. These two points differ from those in Figure 125 in that their bases are slightly convex and more narrow than their blades, giving them a more corner-notched appearance. Note that the flaking appears somewhat less refined that that on the specimens in Figure 126. The left specimen was found on the surface of Mound A and is 2.0 cm long. The right specimen is 1.9 cm long and came from Structure F, F44. Photo by Don Wyckoff.

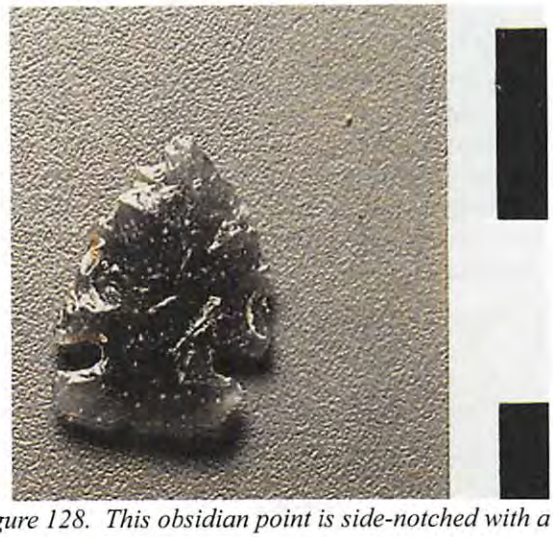


Figure 128. This obsidian point is side-notched with a straight base that is slightly narrower that the blade. The edges are markedly convex, perhaps from resharpening the blade. Specimens resembling this one are common enough that one is tempted to consider them a separate type. The specimen is 1.6 cm long and came from Structure F, F44. Photo by Don Wyckoff

Figure 129. Made from a flake of hornfels, this specimen is very similar to that in Figure 127. The base is straight, the notches perpendicular to the long axis and close to the base. Because no evidence for resharpening is apparent, one can assume that is of the intended shape and size (and could be described in much the same terms) as those in Figure 127, except it is significantly shorter and much less well made. It is 1.9 cm long and was recovered from Structure A, F21. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 130. The left example is definitely side-notched (with wide notching) with straight blade edges, but it is relatively narrower than the right hand example in Figure 129 which it resembles because of its convex base and wide, deep notches. In spite of the small notches in the example to the right it bears similarities to the others. The left example is 2.0 cm. long and comes from Structure F, F44, whereas the right specimen is 1.8 cm. long and comes from Structure F, F47. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 131. The right specimen is complete and not resharpened and might be considered a "pattern" for Chase Orchard Pueblo points. It is short, side-notched, slightly convex on its blade edges and markedly convex on its base. The left specimen, although badly distressed during use or manufacture, apparently was intended to follow the same pattern. The left specimen is 1.4 cm long and from Structure A, F21; the right is 1.7 cm long and from Structure A, F25. Scale is in centimeter increments. Photo by Don Wyckoff.

resemble those of Plains Village sites only in a very general way. Plains Village points, which are consistent in shape and size over much of the Plains during the late prehistoric period, are significantly larger than those from Chase Orchard. Also, Plains Village points are more neatly triangular, are unnotched or clearly side notched, or are triple

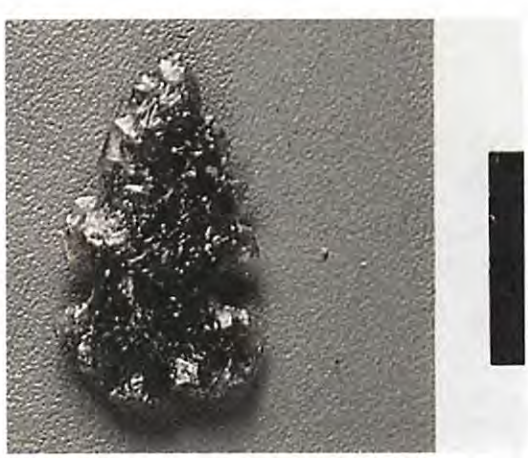


Figure 132. This small obsidian point closely resembles the left example in Figure 130, but with the distinctive attributes more pronounced. The base is far more convex, and the notches are relatively wider, which reduces the blade to about two-thirds the total point length. This specimen measures 1.7 cm in length and was a surface find on the site. Scale in centimeter increments. Photo by Don Wyckoff.

Figure 133. This small point also bears a striking similarity to the left specimen in Figure 130, but this one is clearly corner-notched. The notches are oriented diagonally, and the rounded base is narrower than the blade. It measures 1.9 cm long and was a surface find at Mound A. The scale is in centimeter increments. Photo by Don Wyckoff.

notched. They are also more abundant: points at Apishapa sites where they are ten times more common than at Chase Orchard, for example (Table 5). Chase Orchard projectile points closely resemble those from the Pot Creek Pueblo

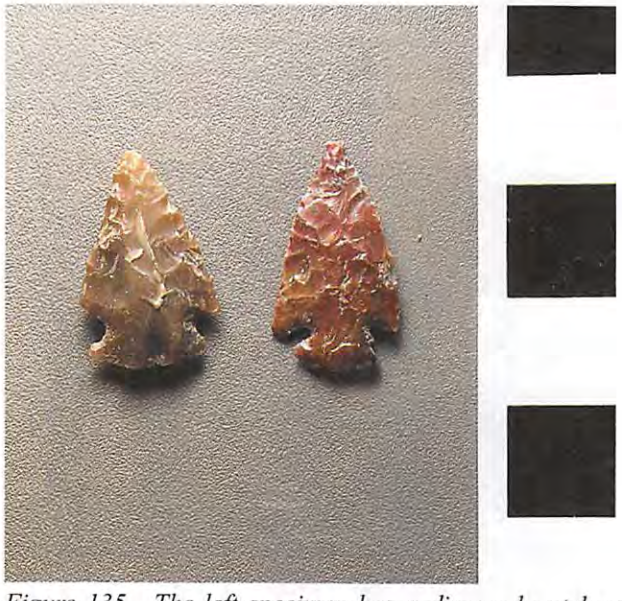


Figure 135. The left specimen has a diagonal notch on one side and a perpendicular notch on the other. The right specimen is nearly symmetrically corner-notched. Both would be included in the same type. Both appear to be of cherts. The left specimen is 1.9 cm long and came from Structure F, F44. The right specimen is 2.1 cm long and was found on the surface of Mound A. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 134. The top left specimen has a straight base and side notches, but these latter are diagonally oriented, giving it the impressiion of being a stemmed point. The top right specimen has a convex base and side notches just above the widest part of the stem. The bottom specimen has diagonal corner notches that appear to have been flaked into a more triangular (rather than ovate) preform. Its stem is somewhat mishapen. None of these appear to have been resharpened. The top left specimen (hornfels) is 1.7 cm long and came from Structure B, F67. The top right specimen (white chert) is 1.8 cm long and came from Structure B, F67. The bottom specimen (Pedernales chert) is 1.5 cm long and came from Structure A, F23. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 136. Although damaged, this point was most probably of a recognized corner-notched type. It is equilateral, deeply corner-notched, and has a small pointed stem. It is 1.4 cm long and comes from Structure A, F23. Scale is in centimeters. Photo by Don Wyckoff.

Figure 137. Except for the lower left example, these small points were notched but, because their stems are missing, can't be determined if they were side- or corner-notched. The lower left specimen is unnotched with an equilateral outline and notably concave base. The upper left (of hornfels) is 1.4 cm long and came from Structure B, F78. The upper right example (also hornfels) is 1.9 cm long and is from Structure F, F84, whereas the lower right (a chert) is 1.8 cm long and is from Structure F, F58. The unnotched example (a chert) is 1.3 cm long and is from the surface of Mound A. The scale is in centimeter increments. Photo by Don Wyckoff.

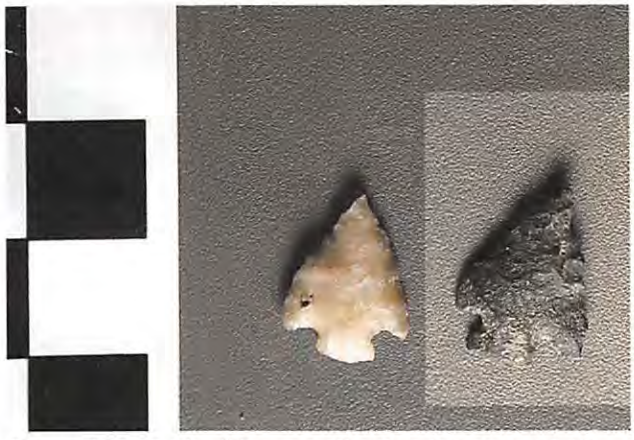


Figure 138. Both of these small points have essentially equilateral triangular blades, corner notches, and almost straight stems with convex bases. The one on the right has a slightly wider stem. The left specimen (a white chert) is 1.4 cm long and from Structure B, F50. The right specimen (hornfels) is 1.5 cm long and is from Structure A, F23. The scale is in centimeter increments. Photo by Don Wyckoff.

near Taos (Wetherington 1968).

Other Chipped Stone Artifacts

A triangular well chipped knife (Fig. 143) of hornfels is 32 by 51 mm. This artifact was found in the Phase Three room in Structure F. Sections of the bit portions of three drills, all of hornfels, were found. Their maximum diameters are 7.9 and 10.0 mm. Much-battered irregular pieces of hornfels, 5 to 7 cm. in diameter, had obviously been used

Table 3. PROJECTILE POINT MEASUREMENTS (in millimeters)

	No.	Length			Width			Thickness		
		Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
SIDE NOTCHED										
Mound A	7	22.0	16.0	15.3	13.4	10.0	11.6	3.0	2.0	2.7
Mound B	2	19.0	16.0	17.5	11.2	10.5	10.9	3.5	3.2	3.4
Mound F	6	23.4	12.6	18.4	11.9	10.5	11.8	3.4	2.0	2.9
SITE Total	15	23.4	12.6	16.4	13.4	10.0	11.5	3.5	2.0	2.9
CORNER NOTCHED										
Mound A	4	19.0	15.0	16.9	12.3	11.1	12.2	4.2	4.1	4.2
Mound B	1	14.4	14.4	14.4	11.0	11.0	11.0	2.4	2.4	2.4
Mound F	3	25.0	21.6	23.3	19.0	13.0	15.6	5.0	4.5	5.0
SITE Total	8	25.0	14.4	16. 9	19.0	11.0	13.7	5.0	2.4	4.4
UNNOTCHED										
Mound A	1	18.1	18.1	18.1	9.8	9.8	9.8	4.8	4.8	4.8
Mound B	1	19.3	19.3	19.3	11.0	11.0	11.0	3.6	3.6	3.6
SITE Total	2	19.3	18.1	18.7	11.0	9.8	10.4	4.8	3.6	4.2

Note: This table excludes points probably used as knives, the archaic point, and points so fragmentary that measurements cannot be made or closely estimated.

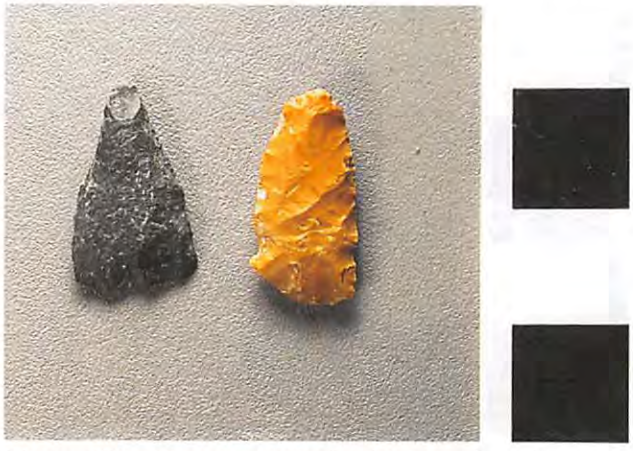


Figure 139. These unnotched points may have be so intended or they may be preforms for notched forms. The right specimen seems to have slight side notching. Both may have been resharpened. The left specimen (hornfels) is 1.8 cm long and comes from Structure A, F29. The right specimen is some kind of jasper (Niobrara?), is 1.9 cm long, and is from Structure A, F29. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 140. Both of these points would be considered corner-notched with almost straight stems. The top specimen (hornfels) is 2.4 cm long and comes from Strucutre F, F44. The bottom specimen is 1.7 cm long and is from Structure A, F25. The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 141. Both of these broken obsidian points have been resharpened so that their original form is not known. The left specimen is 1.3 cm long and comes from Structure F, F84. The right specimen is 1.8 cm long and is also from Structure F (F44). The scale is in centimeter increments. Photo by Don Wyckoff.

Figure 142. Both of these are unnotched (a natural flaw in the stone of the left specimen gives it the appearance of side notching), and they are most likely preforms for points that were to be corner- or side-notched. The specimen on the right is so different from other points on the site that it may have been intended for some other purpose. The example (white chert) on the right is 1.9 cm long and comes from Structure B, F101. The obsidian specimen is 2.4 cm long and was found on a dirt pile associated with Structure A. The scale is in centimeter increments. Photo by Don Wyckoff.

as hammer stones.

By far the most common chipped stone was locally available gray to black hornfels. The bedrock source for this is the southeast side of Mt. Baldy, located some 15 miles west of Chase Orchard Pueblo. A secondary source would be the gravel deposits along Ute Creek (to the west) which drains into the Cimarron River in Ute Park. Cobbles of this hornfels can be found along the river within the town of Cimarron, so they would be within 4 miles of the archaeological site. Hornfels is represented primarily by a large number of flakes. Some of these crude flakes had probably been used as expedient cutting and scraping tools. A few nicely finished hornfels artifacts, including small projectile points, were found. Most of the points, however, were made from a wide variety of materials exotic to the Poñil drainage. Projectile points were relatively common for a Pueblo site, but very rare if compared to the numbers

usually found at Plains sites of similar age.

Ground Stone Artifacts

Except for manos, clearly recognizable worked stone artifacts were scarce at Chase Orchard. Ground stone artifacts were nearly all made of locally available hard sandstone.

Mortar

A mortar (Fig. 146) made from an irregular wedge-shaped piece of hard sandstone was found on the surface of Mound F. The depression, pecked into the upper sloping surface, was 13 by 9 cm. by 0.7 cm. deep and involved nearly all this surface. No corresponding pestle was found.

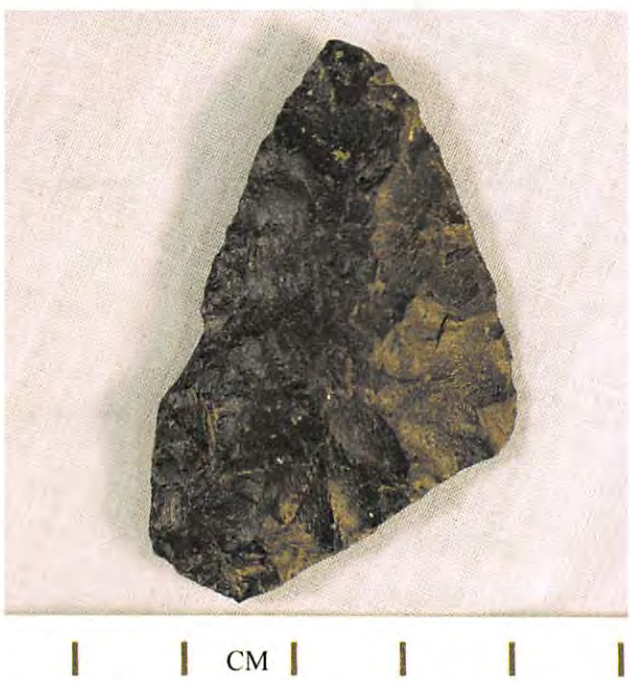


Figure 143. Knife of hornfels recovered from Mound F, F94. Scale is in centimeter increments. Photo by Warren Lail.

Abraders

A matched pair of soft red sandstone abraders (Fig. 147), or Plains-style arrow shaft polishers, was found on the surface of Mound F. These could have come from a nearby and much more recent Plains Apache site.

Another abrader, an irregular piece of soft sandstone with a single groove in it, was found on the floor of Room 3 in Mound B.

Pipe

What appears to be part of an unfinished straight stone pipe (Fig. 148) was found in the fill of the kiva hearth in Mound B. The specimen, of hard sandstone, is oval in cross section with diameters of 3.5 and 4.0 cm. and is 5.0 cm. long. In the unbroken end is a small rounded central

Figure 144. Large bifaces recovered at various spots in our excavations. These seem intrusive to the main occupation, but they may represent older artifacts picked up by occupants of Chase Orchard Pueblo. Top is from Mound F, F77, whereas the bottom is from Mound A, F22. The scale is in centimeter increments. Photos by Warren Lail.

Figure 145. This slim, well made corner-notched arrowpoint was found on the surface of Mound E, which we did not excavate. It appears to be of a siltstone or fine-grained quartzite. The scales are in centimeter increments. Photos by Warren Lail.

pit. In the opposite end is another pit, apparently the end of a drill hole that lines up with the first pit.

Bead

A crude black slate bead (Fig. 149) from Mound F is roughly circular, about 15 mm. in diameter and 9 mm. thick, with a central conical hole 3 mm. in diameter.

Damper (?)

A possible damper (Fig. 150) found on the floor of the ventilator tunnel of the kiva in Mound B was a neat rectangular sandstone slab 2.7 cm. thick. It had been carefully shaped with rounded corners and straight smooth edges. One end was broken off and missing. The remaining part is 36 cm. long and 27 cm. wide.

Stone Disk

A shaped stone disk some 9 cm in diameter (Fig. 151) was recovered from Mound F, F58. It might be a pot cover like that found in Mound A.

Hammerstones

Fist-sized cobbles were occasionally recovered during the excavations. Because they most probably came from gravel deposits in nearby Poñil Creek, it was difficult to discern whether or not they were used as percussors. Illustrated in Figure 152 are two which show more batterning than the usual gravel clasts and clearly are hammerstones.

Axes

We did not find any notched axes in our excavation, but Alpers (1963:37, Fig. 2) illustrates what appear to be two from the lower Poñil Canyon.

Maul

A grooved stone maul, found just outside the wall of Room 1 in Mound A, was 14.3 cm. long and 11 cm. in diameter.

Disk

A crudely chipped sandstone disk (Fig. 151), 7.8 cm. in diameter and 1.2 cm. thick, was recovered from Mound F.

Metates

Three complete metates (Figs. 153-154), all from Mound B, and numerous fragments, mainly from Mound

Figure 146. Mortar of sandstone recovered from the surface of Mound F. The depression has been pecked into the surface. The scale is in centimeters. Photo by Warren Lail.

Figure 147. Grooved sandstone abraders found on the surface of Mound F. The scale is in centimeters. Photo by Warren Lail.

Figure 148. Segment of straight pipe of sandstone found in kiva hearth of Mound B. Scale is in centimeter increments. Photo by Warren Lail.

Figure 149. Stone bead of polished black slate from Mound F. Scale is in centimeter increments. Photo by Warren Lail.

A, were recovered. Most were apparently from trough metates, open at one end, and made of hard sandstone. The metate (Fig. 154) from Room 2 in Mound B is representative of the majority (e.g. Figs. 57 and 75). It had been shaped carefully on all surfaces, but apparently a corner had been broken off at the open end of the trough. This metate is 55 cm. long on one side, and 46 cm. long on the other, 37 cm. wide and 13 cm. thick. The trough is 21 cm. wide, 9 cm. deep and 46 cm. long. The rim around the trough is 4 to 5 cm. wide and there is no shelf at its closed end.

The metate (Figs. 53, 153) from the floor of the kiva is unusual but perhaps can be described as a trough metate closed at both ends. It had been made from a thin rectangular sandstone slab, 70 by 36 cm. and uniformly 6.5 cm. thick. The slab had received a minimum of shaping or smoothing. The rectangular trough, centered side to side, measures 56 by 27 cm. by 2.5 cm. deep. The rim around the grinding surface is 14 cm. wide at one end and about 10 cm. wide on the two sides and the other end.

Manos

We recovered 53 complete and 17 broken manos (Figs. 155-166), representing a wide range of shapes and sizes. Most were from excavations but a few were from the surface. All were made of hard sandstone excepting two of schist. Some were quite crude or only slightly shaped

Figure 150. Thin stone slab, possibly a damper, found on the floor of the ventilator in Room #1 (kiva) in Structure B (provenience F71 of Mound B). Scale is in centimeters. Photo by Warren Lail.

Figure 151. Ground stone disk recovered from Mound F (F51). Scale is in centimeters. Photo by Warren Lail.

while others were more carefully finished. Previous classification of pueblo manos, for example that used by Stubbs and Stallings (1953:114), do not include many of the forms found at Chase Orchard but do include many forms not found there. Since the shape of the mano reflects the shape

Figure 152. Examples of hammerstones recovered at Chase Orchard Pueblo. Both of these come from Mound A, F5. Photo by Warren Lail.

of the metate, the grinding complex as such at Chase Orchard may have varied from pueblo standards.

In Table 4 the distinction between one- and two-hand manos is based mainly on size (the two-handed are generally more than about 16 cm. long) and how they best fit the hand. Crude manos were pieces of stone of convenient size with little or no modification. Oval manos were carefully shaped by pecking or grinding to a round or oval outline; similar methods were used to produce rectangular manos with rounded corners and slightly convex sides.

Figure 153. Different views of unusual metate, possibly intended for use as a deflector, found on the floor of Room #1 (kiva) in Structure B of Mound B. It measures 70x36x6.5 cm. The scales are in centimeters. Photos by Warren Lail.

Figure 154. Well shaped and used metate from the southwest corner of Room #2, Strucutre B (F73 in Mound B). Scale is in centimeters. Photo by Warren Lail.

Figure 155. Detail of grinding surface of metate shown in Figure 154. Scale is in centimeter increments. Photo by Warren Lail.

Convex grinding surfaces show greater curvature along the short axis than the long. The grinding surface on only a few manos approaches spherical. Even grinding surfaces called "flat" are slightly convex, usually along both axes.

Unusual features occur in various combinations. A few manos are slightly wedge-shaped. These and other manos may have grinding surfaces on two opposite sides, or may be slightly faceted. Three manos had finger grooves along the long sides. One of these (Fig. 157), the largest recovered, measured 18.5 by 12.9 by 7.1 cm. thick and weighed 4.25 kg. It was loaf-shaped.

One unusual mano (Fig. 156), from the lining of the kiva hearth, had a neatly pecked groove across the middle of the dorsal face as though it had been made from a grooved maul split lengthwise. Otherwise, except for the grinding surface, it was smooth and apparently made from an unmodified river cobble. This mano was 20.6 by 11.8 by 5.5 cm. thick. The groove, 2.0 cm. wide and 0.3 cm. deep, intersected the grinding surface on both edges. What would have been the striking ends of a maul, however, showed no evidence of battering.

Figure 155. Both faces of manos included in the lining of the hearth in Room #1 (kiva) is Structure B. Provenience: F60 of Mound B. Scales are in centimeter increments. Photo by Warren Lail.

Figure 156. Both faces and a perspective view of the unusual grooved mano found as part of the lining of the kiva hearth in Room 31, Structure B of Mound B. The scales are in centimeters. Top two photos are by Don Wyckoff, whereas the bottom one is by Warren Lail.

TABLE 4. DISTRIBUTION OF MANOS AT CHASE ORCHARD PUEBLO.

MANO TYPE	PROVENIENCE							
	Md. A	Md. F	Mound B.					Site Gen.
			Kiva floor	Kiva hrth	Kiva vent	Kiva fill	Other rooms	
One Hand								
Crude, convex	2	2		1		1	1	
Crude, flat	1			1			1	1
Oval, convex	1	3		1	1	2	2	1
Oval, flat		1					1	1
Two hand								
Crude, convex	2		3	1	1	3		
Crude, flat	1	2		1				1
Oval, convex		2		1				1
Oval, flat			1					
Rect., convex	3	1			1			1
Rect., flat	1					1		
Fragments	4	4	1				3	3

The wide variety of shapes exhibited by the manos at Chase Orchard is striking, especially as compared to those at slightly later sites such as Pot Creek (Wetherington 1968), Te'ewi (Wendorf 1953) and Pindi (Stubbs and Stallings 1951). The range, however, is similar to that at the nearly contemporary Valdez Phase sites in the Taos area (Green 1976). The wide variety of manos at Chase Orchard probably reflects a transition period during which basin, trough and flat metates were all used although only trough forms were represented in our sample.

Figure 157. Both faces and lateral view of the unusually large mano recovered from Phase 3 deposits (F109) in Mound F. The bottom perspective slightly shows the finger grooves pecked and smoothed into the side. Scales are in centimeters. Photos by Don Wyckoff.

Figure 158. Manos from ventilator in Room #1 (kiva), Structure B of Mound B. Scale is in centimeters. Photo by Warren Lail.

Figure 159. The grinding surfaces of selected manos. Top left: Mound A, F27; top middle: Mound B, F78; top right: Mound A, F16; bottom left: Mound A, F16; bottom middle: site surface; and bottom right: Mound A, F79. Scale is in centimeters. Photo by Warren Lail.

Figure 160. Selected manos and mortar (upper left). Proveniences: upper left: Mound F surface; upper middle: Mound A, F15; upper right: Mound B, F101; lower left: Mound B, F66; and lower right: Mound A, F29. Scale is in centimeters. Photo by Warren Lail.

Figure 161. Grinding surfaces of selected manos. Their proveniences are: upper left and upper center: Mound B, F61; upper right: Mound B, F68; lower left: Mound F, F42; lower center: Mound A, F10; and lower right: Mound A, F79. The scale is in centimeters. Photo by Warren Lail.

Figure 162. Selected manos from Mounds A and B. Proveniences: upper left: Mound B, F62; upper right: Mound B, F78; lower left: Mound A, F13; and lower right: Mound A, F27. The scale is in centimeters. Photo by Warren Lail.

Figure 163. Selected manos from Mounds A, B, and F. Proveniences: upper left: site surface; upper middle: Mound F, F44; upper right: Mound B, F49; lower left: Mound A, F15; lower middle: Mound A, F103; and lower right: Mound A, F13. The scale is in centimeters. Photo by Warren Lail.

Figure 164. The grinding faces of selected manos. Proveniences: upper left, upper middle, and lower left: Mound F, F44; upper right: Mound B, F67; lower middle, Mound B, F43; and lower right: site surface. Scale is in centimeters. Photo by Warren Lail.

Figure 165. Grinding surfaces of selected manos. Proveniences: upper left: site surface; upper middle: Mound F, F44; upper right: Mound B, F49; lower left: Mound A, F15; lower middle: Mound A, F102; and lower right: Mound A, F13. Scale is in centimeters. Photo by Warren Lail.

Figure 166. Grinding surfaces of selected manos. Proveniences: upper left: Mound B, F62; upper right: Mound B, F78; lower left: Mound A, F13; and lower right: Mound A, F27. Scale is in centimeters. Photo by Warren Lail.

Chase Orchard Pueblo: Discussion and Interpretation of the Site's Age

Dating of the Chase Orchard Pueblo, and by extension, of the Poñil Phase, is tenuous because it is based primarily on the dating of Taos Black-on-White pottery. Cordell (1978) gave careful consideration to the dating of pottery with mineral pigment, including Taos Black-on-White, from the middle Rio Grande area. She concluded that the dating is so tenuous and poorly based that a careful restudy of the entire problem is badly needed. (Such an undertaking is beyond the scope of this paper.) Cordell's best estimate is A. D. 1100 to 1250 for the Poñil Phase, taking special note of the absence of Santa Fe Black-on-White pottery, a type widely distributed, readily recognized and well dated as starting about A. D. 1200 or 1250. Also, Cordell's date of A. D. 1100-1250 for the Poñil phase is compatible with dates commonly given for sites of apparently the same age in the Taos area. It does raise an interesting question regarding the kiva at Chase Orchard. Dr. Bertha Dutton, who viewed the kiva when we had finished excavating it, suggested that since it was in a non- or pre-Santa Fe Black-on-White context, it might be the earliest above ground square kiva known. Apparently the earliest ones reported elsewhere are associated with Santa Fe Black-on-White or later pottery. Another possibility is that Santa Fe Black-on-White pottery came late to the Cimarron area. Glassow (1980) does report Santa Fe Black-on-White for the Cimarron Phase which he sees as immediately following the Poñil Phase.

The presence of much of a large carefully made indented corrugated vessel in Mound F also suggests the equivalent of a Pueblo II dating for Chase Orchard Pueblo. The corrugation is of a style made in Pueblo II times in the Chaco/Mesa Verde areas and in much of the middle Rio Grande area south of the Cimarron and Taos districts. The vessel was clearly imported. No other sherds from either the surface or the excavations at Chase Orchard Pueblo come close to resembling it. Partly broken in place, it was outside and against the wall of the latest room built at Structure F, which establishes the vessel as contemporary with the room or at least present before the room collapsed. The corrugation is much more carefully executed than is that on the few dubious corrugated sherds from the site or on the corrugated pottery found at Forked Lightning, the type site for Santa Fe Black-on-White.

Kidder and Sheperd (1936:302-304) considers the culinary pottery from Forked Lightning as representing a "degenerative transition between the beautiful corrugated wares of the Developmental Pueblo period (Pueblo II) and Great Pueblo period (Pueblo III) and the plain-surfaced products characteristic of the Regressive and Historic periods." Kidder uses Mesa Verde corrugated pottery as an example of beautiful pottery and says (ibid.) of Forked Lightning corrugated that it is "lacking in elegance", "coils are irregular, indentations are not carefully placed, and the work is crude." Thus the presence at Chase Orchard of much of a carefully made corrugated vessel and the absence of Forked Lightning-like corrugated pottery suggests that the site was inhabited while well executed corrugated vessels were still being made and before Forked Lightning-like corrugated vessels, with the accompanying Santa Fe Black-on-White, came into use.

The contrast is equally great between the vessel from Chase Orchard and crude corrugated pottery from the Taos area found associated with Taos Black-on-White and Santa Fe Black-on-White, which is illustrated by Wetherington (1968:45-6).

In discussing the corrugated pottery from the Pindi site, Stubbs and Stallings (1953:56) state that "There is a gradual shift from the sharply indented type of Chaco II into the less well handled indented accompanying early Santa Fe Black-on-White."

In summary, if we use the commonly accepted date of ca. A. D. 1200, or even 1150 or 1250, for the beginning of Santa Fe Black-on-White, Chase Orchard Pueblo, which lacks this ware, should date from the 1100s. The presence of a well made corrugated pot at the site underscores this probability.

Chase Orchard Pueblo: Discussion and Interpretation of Square Above Ground Kivas

The large central room in Structure B is especially interesting in that it may be the earliest reported square above-ground kiva. A date in the 1100s is supported by various lines of evidence. Elsewhere, sites having such kivas apparently all date from after 1200 or 1250, the beginning date for Santa Fe Black-on-White. A check of the literature revealed that three sites are of special relevance.

Pa□-Ko, located about 50 miles southwest of Santa Fe, had in its prehistoric section "four large chambers of ceremonial nature" included in the initial or nuclear room block (Lambert 1954). Associated with them was Santa Fe Black-on-White and Glaze I pottery, suggesting a date of A. D. 1300-1400. The "room kivas" at Pa□-Ko were similar in many ways to that at Chase Orchard. They were constructed with coursed adobe walls set slightly into the floor. Floors were also adobe and some kivas had been refloored. Pa□-Ko kivas were approximately square, ranging from 14 by 15 ft. to 14 by 20 ft. All ventilator openings were in the middle of the east wall in line with a complex consisting of hearth, ash pit and deflector. The Pa□-Ko deflectors were elaborate, but we do not know what the deflector at Chase Orchard would have been once renovation was completed.

At Pa□-Ko, one room had a north-south row of three post holes. Two were situated in the same places as the two in the Chase Orchard kiva, and the third was against the north wall where the Chase Orchard ash pit was located. (Perhaps the Chase ash pit or the Pa□-Ko post hole was misidentified?) Two other kiva rooms had no post holes. All Pa□-Ko kivas had apparently been entered through the roof, although one had two entrances, one walled up, from adjoining rooms. At prehistoric Pa□-Ko the room blocks contained many more rooms that at Chase Orchard, but both structures had a cluster arrangement rather than a linear or "L" shaped configuration. This cluster arrangement may foreshadow later historic pueblo configurations, at Pecos or Taos for example. It is tempting to suggest that when the people left the Cimarron district at least some settled at Pa□-Ko. There is general agreement that the historic portion of Pa□-Ko was occupied by Tanoan speakers, but no agreement as to which group. Since there was a long period of abandonment between the prehistoric and historic occupations, any attempt to identify the builders of the prehistoric kivas must be highly tentative.

Pindi Pueblo is located on the Santa Fe River about six miles below Santa Fe (Figure 1) (Stubbs and Stallings 1953:31-47). There are some similarities between its kivas and the one at Chase Orchard. In Kiva 8 at Pindi, a second smaller fire pit had been constructed within the earlier larger one. The diagram of Kiva F appears to show the same arrangement, with the inner pit completely lined with stone. Additionally, the fire pit in Kiva E at Pindi also contained stone, including a slab floor. The fire pits in all Pindi "room kivas" or "specialized rooms" had adobe rims. Subfloor cists containing ash were found instead of the more common ash pits in specialized rooms. Only some of these specialized rooms had sipapus. Pindi Pueblo dates from Santa Fe Black-on-White/Wiyo times, about A. D. 1300, and later.

Kuaua, a Tiguex (Tiwa) site near Bernallilo, New Mexico (Figure 1), is still later than Pa□-Ko and Pindi and was visited by Coronado in 1540. Tichy (1938) reports both square and round subterranean kivas, and included were two square above-ground kivas (ceremonial rooms) situated in room blocks. Both of the latter were constructed with coursed adobe walls and adobe floors.

There was apparently temporal overlap among various styles of kivas in the area. However, there appears to have been continuity in the use of adobe for kiva building from prehistoric times on. For example, at nearby Pa□-Ko room kivas with adobe walls continued from prehistoric times while stone replaced adobe in the construction of some other walls. Unfortunately, there are such wide variations in the ceramics of these sites that their exact chronological relationship is not clear. Prehistoric Pindi would have been occupied at approximately the same time as Pa□-Ko since both contained a predominance of Santa Fe Black-on-White pottery. Even after Kuaua ceased to be occupied, according to Schroeder, square above-ground kivas continued in some pueblos into the late 1800s.

It may be significant for architectural sequence that at Pindi, Pa□-Ko and Kuaua at least some of the kiva rooms had been formed by the removal of walls separating smaller rooms. This approach suggests that the idea of a room kiva was introduced after the construction, in Santa Fe Black-on-White times, of the communal room blocks. In contrast, the kiva at Chase Orchard, an earlier site, was the first room constructed in the room block and was its nucleus. Perhaps the idea of having a kiva as part of a house block was adopted later on the Rio Grande, where they were on the periphery of the configuration.

Figure 167. Southwestern sites sharing pottery and/or above-ground square kiva similarities with Chase Orchard Peublo. Adapted from U.S. Geological Survey, State of New Mexico, *Scale 1:500,00. 1968 edition.*

Chase Orchard Pueblo: Discussion of Culture Area Affiliation

There has been some question whether the sites in the Cimarron area are more closely related to those in the Southwest or to those on the Plains (Lutes 1959). Our excavation at Chase Orchard has clearly demonstrated a Pueblo orientation for the Poñil Phase. However, a number of traits distinguish it from other Anasazi complexes. Some of these differences could reflect Plains influence from the far past. The Pueblo affiliation of the Poñil Phase is obvious in its subsistence pattern and technolog. Structures consisting of contiguous square to rectangular rooms with coursed adobe walls were built on the surface of the ground. Special function rooms or kivas were included. There is a primary dependence on maize horticulture, probably with irrigation, supplemented by limited hunting. Maize was ground with metates and manos. Large plain gray utility jars were made by coiling.

The Poñil Phase differs from other contemporary Pueblo complexes in few, but interesting, ways. Multiroom structures at most Pueblo sites have a linear configuration in which square rooms are in straight lines or an L and they often focus on a plaza which contains a round underground kiva. Poñil structures have a cluster configuration with a few narrow rooms surrounding a larger square room that sometimes has kiva features. Such cluster arrangements, including square above-ground kivas, are found in larger pueblo structures, but of later periods. Also, Poñil Phase settlements, instead of having one or two larger communal structures, consist of a group of smaller multicell structures situated a few meters apart, but in no obvious pattern. Structures were rebuilt a number of times in the same configuration, often on old wall bases.

Chipped stone artifacts are not common and match in size and variety those found at pueblos in the general Rio Grande area. Grooved mauls are present. Stone projectile points may be a little more numerous at Poñil sites than at contemporary pueblo sites, but are rare by Plains standards.

Two artifact types possibly unique to the Poñil Phase apparently have not been reported from other sites, either Plains or Southwestern. The first are "knives" made from deer scapulae. The second are small bilobate or "figure 8" shell beads.

Bone shaft wrenches, although common at Plains sites, are very rare at Southwestern sites. Other Poñil Phase artifacts of faunal material, such as clam and olivella shell ornaments, splinter awls and tubular beads are found in both Plains and Pueblo contexts.

On the Plains, the geographically closest manifestations on the same time level as the Poñil Phase are sites of the Central Plains tradition, represented in western Nebraska and Kansas by the Upper Republican Phase, in northwestern Texas by the Antelope Creek Phase, and in southeastern Colorado by the Apishapa Phase (Figure 181). Wedel (1986) provides a date of about A. D. 1000 to 1250 for Upper Republican. Lintz (1986) dates the Antelope Creek Phase at A. D. 1250 to 1500. Zier and Kalasz (1999) date the Apishapa Phase at A. D. 1050 to 1450. All of these complexes probably represent people of a single (Caddoan) linguistic family.

The Apishapa Phase Cramer site is the closest major Central Plains tradition site, both geographically and temporally, to Chase Orchard Pueblo. Because these two sites were approximately the same size, yielded about the same amount of material and were excavated by the same method (Gunnerson 1989, this work), comparisons will be made between them.

As can be determined from Table 5, there is a marked difference in the subsistence bases of the two sites, even though the amount of pottery and the number of bone and shell artifacts are similar. The two pottery traditions are completely different. The projectile points differ not only in number but also in shape and size. The two complexes do share a number of artifact types, but many of these, such as manos and metates, bone awls, tubular bone beads, and chipped stone drills are found very widely spread.

There are some traits found in the Poñil Phase that could have been retained from the ancestral groups having lived on the Plains at a much earlier time. In the section on Tanoan Migration, we consider seriously Trager's 1967 suggestion that the Tanoan homeland was on the Northern Plains. We note that at some of the Avonlea-like sites, which centered in eastern Montana, are found circular wall bases of rock, pottery vessels with pointed bottoms, and Avonlea side-notched projectile points (Davis 1988). These traits are of the right age and in the right place that they could be the prototypes for ones found in the Poñil Phase or in phases ancestral to it. Also, the settlement pattern at Chase Orchard probably reflects the retention of a social organization stressing small family groups, probably patrilineal, that came together in camps for special purposes such as cooperative hunts or ceremonies. After the adoption of horticulture, such an organization could have lead to the grouping of small farming villages or hamlets. This would also explain why the Tanoans have a somewhat patricentric social organization when compared to the strongly matri-

centric organization of the western Pueblos.

TABLE 5. ARTIFACTS FROM CHASE ORCHARD AND CRAMER SITES

ARTIFACT TYPE	CHASE ORCHARD	CRAMER SITE
Pottery Sherds *	4000	5619
Projectile Points and Fragments	28	276
Manos and Fragments	70	13
Bone and Shell Artifacts	77	119
Unworked Bone Fragments	918	9386+

* (includes estimated 474 sherds from restored vessels)

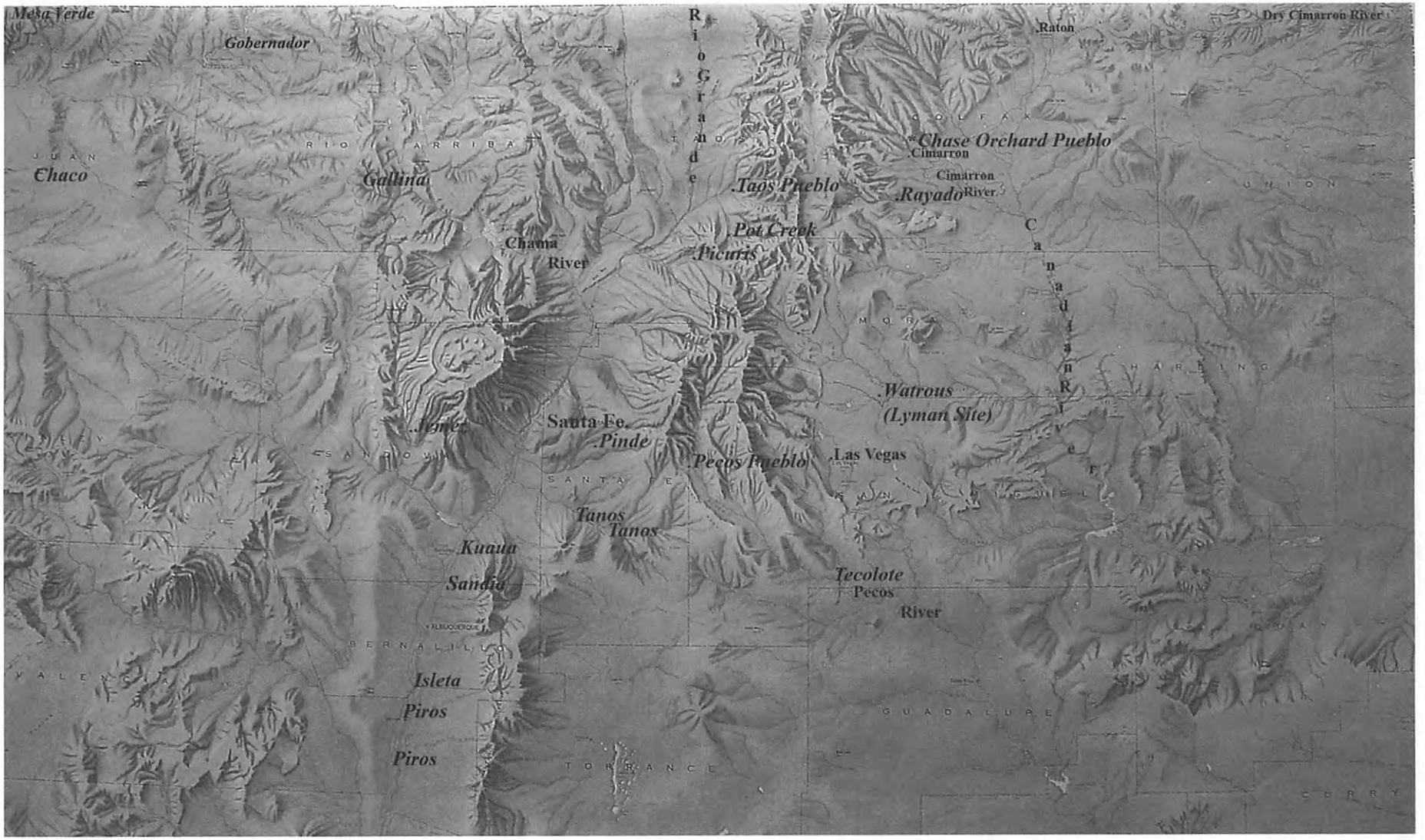


Figure 168. Northern New Mexico archaeological sites, modern pueblos, and towns with similarities to Chase Orchard Pueblo and relevance to Tanoan speaking natives. Adapted from U.S. Geological Survey, State of New Mexico, 1:500,000 relief map, 1968.

Chase Orchard Pueblo: Comparisons of Archaeological Districts and Phases

Cimarron District

The sequence of phases leading up to Pueblo manifestations in the Cimarron district (Figs. 2, 168, and 169) is not too different from that found elsewhere in the Anasazi area, but has some distinctive characteristics. Named and provisionally dated phases spanning some eight centuries have been summarized by Glassow and expanded primarily on the basis of his extensive survey and limited excavation (Glassow 1972, 1980). Chronology of the early part of the sequence is based on a few radiocarbon dates, while that of later phases depends primarily on the cross dating of mineral pigment black-on-white pottery.

Glassow's earliest phase, named the Vermejo after a river eight miles northeast of the Poñil, is dated at about A. D. 400 on the basis of a carbon sample from a crude structure (on the Middle Poñil upstream from Chase Orchard Pueblo) outlined by a circle of rocks. Associated with it is evidence of maize, but no ceramics. Very small corner notched projectile points were included among the few artifacts recovered at Vermejo Phase sites.

His next, or Pedragosa Phase, for which he proposes a date of A. D. 750-900, was represented at only one site, but it did yield crude pottery as well as evidence of maize.

The following Escritores Phase, dated by Glassow at A. D. 900-1100, includes typical southwestern pit houses, crude sand-tempered utility pottery, sometimes neck-banded, and painted pottery, possibly Red Mesa Black-on-White. However, as mentioned before, Cordell (1979) has questioned the identifications of mineral pigment painted pottery from the Taos and Cimarron districts.

Poñil Phase

Sites of the following Poñil Phase are the most numerous in the Cimarron district, and have a probable date of about A. D. 1100-1200. Glassow briefly discusses the phase but did not excavate at a Poñil Phase village site. Our excavations at Chase Orchard Pueblo, the only excavated Poñil Phase site, provide the basis for defining the phase. This phase can be characterized as having multi-room adobe-wall structures, with narrow rectangular rooms situated contiguously around a larger square room. In one structure this larger central room was apparently a square above-ground kiva, oriented on the cardinal directions. A floor-level ventilator through the east wall and the hearth were on the east-west axis. The hearth, two post holes and an ash pit were on an off-center north-south axis. Several structures, perhaps each representing a single family, are located within a few meters of one another to form a small settlement or part of a larger settlement. Structures often had been burned and reconstructed, usually with the new walls built on the stubs of old walls. Sub-floor cists and pottery vessels buried in room floors and covered with thin stone slabs probably served for storage. Hearths were rimmed with adobe. Pottery, primarily Taos Gray, both plain and incised, is abundant. All the painted pottery has mineral pigment and is here classified simply as Taos Black-on-White in recognition of Cordell's concern over more precise type identifications. Stone artifacts include metates and numerous manos of several types, stone mauls and probably axes, a few small chipped stone projectile points, drills and knives. Bone artifacts include awls, tubular beads and arrow shaft straighteners. Deer scapula "knives" and carefully made "bilobate" shell beads may well be unique to the Poñil Phase.

Chase Orchard Pueblo is located on fertile land in the mouth of Poñil Canyon. Through it flows a permanent stream which could have been easily used for irrigation, as now. The mouth of the canyon opens out onto the plains and is flanked by mountains which provide varied resources and protection from the weather. Subsistence was based primarily on cultivation, but with limited hunting. Burials were not found associated with the site although occasional, small, fragmented human bones had been discarded with the general habitation debris.

Cimarron Phase

On the basis of surface survey, Glassow identifies a few and poorly defined Cimarron Phase sites as the terminal pueblo complex in the district. Structures are still compact and some have rock wall bases, but the room pattern is less consistent. According to Glassow, the ceramic assemblage contains Santa Fe Black-on-White, a carbon pigment ware, and Cimarron Gray, a new plain and incised ware. Projectile points are larger and side notched. Previously the Cimarron Phase was included as part of the Poñil phase (Baker 1964). The presence of Santa Fe Black-on-White suggests a post A. D. 1200 date for the Cimarron just as its absence supports a pre A. D. 1200 date for the Poñil Phase.

Taos District

Since the time of Mera (1935), archaeologists have assumed a close relationship between the Taos and Cimarron districts (Figs. 1 and 169), primarily because Taos Black-on-White, Taos Gray and especially Taos Incised occur in both areas. On the further assumption that the sites around Cimarron represent a movement Taos people, the two areas have been lumped together. Not until the 1950s, with the

advent of the Philmont Scout Ranch archaeology program, did it become obvious that there had been a long developmental sequence in the Cimarron district, perhaps starting earlier there than in the Taos valley.

Archaeology in the Taos area had caught the attention of scholars as early as Morgan in 1881 (Wetherington 1968), followed by such individuals as Jeancon (1923, 1929), Mera (1935) and Blumenschein (1956, 1958). The Fort Burgwin Research Center, near Ranchos de Taos, began to sponsor archaeological research in the Taos area in 1957 with the excavation of Pot Creek Pueblo (Wetherington 1968) and has since been a major supporter of archaeology in the area.

Valdez Phase

In the Taos district, the earliest representation of the Anasazi tradition is apparently the Valdez Phase (A. D. 900-1200). Of the five single-component Valdez Phase sites described by Green (1976), four contained one to four pit houses, each about eight feet deep. The fifth site (TA 47) had two superimposed surface structures. The lower one consisted of a line of four rooms. The upper structure consisted of six longer rectangular rooms arranged in an L. Also present were two subterranean plaza kivas. The ceramics at all of the Valdez sites consisted of Taos Gray, both plain and incised, and Taos Black-on-White. It is important to note that although the Poñil and Valdez phases were partly contemporaneous and had the same ceramic assemblage, the differed radically in architecture. Valdez could have provided the stimulus for Poñil phase pottery, but not for its structures.

Pot Creek Phase

The Pot Creek Phase, which followed the Valdez phase in the Taos district, has a suggested date of A. D. 1200-1250, based on the addition of Santa Fe Black-on-White to the ceramic assemblage and a few tree ring dates (Cordell 1979). Architectural styles continue the Valdez tradition: contiguous surface rooms arranged in lines of Ls and round underground kivas.

The Pot Creek Phase, a period of population aggregation and multifamily structures, was followed by the Talpa Phase (A. D. 1250-1350) having even large structures, some of them multistoried. Rooms had a central roof support post set in distinctive basins. There was obvious continuity between these phases with a major Talpa Phase component directly on top of a Pot Creek Phase component at Pot Creek Pueblo (Wetherington 1968). Starting with the Talpa Phase there is continuity into Taos and Picuris pueblos of modern times.

Watrous Area

The Lyman site, an anomalous pueblo near the town of Watrous (Figs 1 and 169) and some 80 miles south of Cimarron near the confluence of Sapello Creek and the Mora River, was reported by Lister (1948). He noted that the Watrous area had been visited by various archaeologists, starting with Bandelier in 1882 (Lister 1948), but none had done significant excavating. Lister cleared one rectangular room from which he obtained a reasonable sample of pottery and stone artifacts.

The closeness of the Lyman site to the Cimarron district, and its isolation from sites similar to itself, has led to speculation, even as recently as Cordell (1979:37), that it might be related to sites in the Cimarron area. The Lyman pueblo however is L-shaped, with arms about 120 and 100 feet long, and the pottery is mostly corrugated utility ware, Santa Fe Black-on-White, Wiyo Black-on-White, and Chupadero Black-on-White. These traits indicate a date later than and an affiliation completely different from the sites in the Cimarron area, but show Lyman to be closely related to those sites in the Pecos/Tecolote area. Our surveys in northeastern New Mexico (Gunnerson 1959) showed an interesting correlation, with pueblo sites in the Pecos/Gallinas River drainage having Santa Fe-area connections and those in the Canadian River drainage having Cimarron-area connections. The Watrous site is the only exception we found.

Wendorf (1960) also noted the differences between the Watrous (Lyman) site and those in the Cimarron area and suggested two movements of pueblo people from the west into northeastern New Mexico. He postulated a movement from the south crossing the mountains, via Pecos Pueblo and then moving north to the Mora River area (which would include the site at Watrous). The other movement he suggested involved crossing the mountains from the Taos area into the Cimarron area. I agree with Wendorf's suggested southern movement of people via Pecos into the Watrous area. We both recognize a relationship between the archaeology of the Taos and Cimarron areas, but differ in details.

Trinidad District

This district is centered around the Trinidad Lake Reservoir, just west of the town of Trinidad in extreme southern Colorado (Fig. 169). Here. the Purgatory River, which was dammed to form the lake, emerges from the Park Plateau. Thus the situation is very much like that of the lower Poñil Canyon, some fifty miles to the southwest, except that the Purgatory is in the Arkansas River drainage and the Poñil is in that of the Canadian River. Raton Mesa forms the divide between the two drainages.

The most conspicuous sites investigated prior to the construction of Trinidad Lake Reservoir are assigned to the Sopris Phase (Ireland 1970; Ireland and Wood 1973; Wood and Bair 1980). The Sopris and Poñil phases have enough traits in common that Zier and Kalasz (1999:221-239) include Poñil within the Sopris Phase, a lumping that I do not consider justified. The Sopris Phase has been dated at

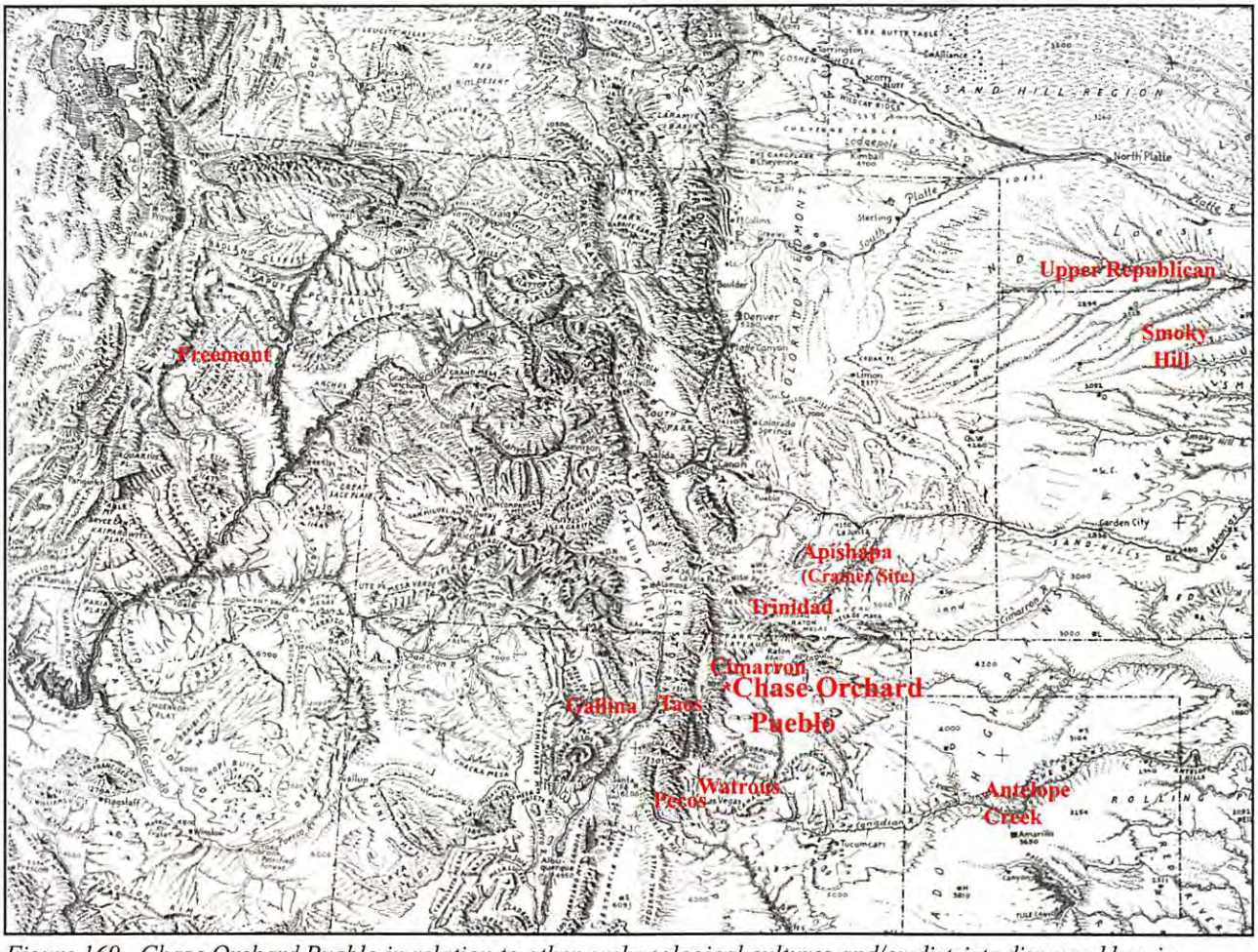


Figure 169, Chase Orchard Pueblo in relation to other archaeological cultures and/or districts discussed herein.

A. D. 1050-1200, essentially the same period assigned to Poñil, and is also thought to have developed locally. A substantial portion of the ceramics from Sopris sites has been identified as Taos Gray and Taos Black-on-White, indicating a Taos connection. Significantly, Santa Fe Black-on-White pottery is absent in both Sopris and Poñil. Another similarity is that some of the Sopris surface dwellings also consist of a large room surrounded by smaller ones. However, there is much more variability in Sopris architecture. Structures vary from shallow pit houses to multiroomed surface dwellings, and materials used include jacal, adobe, stone, and a combination of stone and adobe. Some of the Sopris rooms have adobe-rimmed hearths and storage pits in the floor, but apparently pottery vessels were not buried in the floors. The deer scapula knives and bilobate shell beads, distinctive of Poñil, are not reported from Sopris. As compared to Poñil, the Sopris people were apparently less committed to horticulture and had a stronger hunting orientation, bringing in bison and pronghorn in addition to deer, rabbit, etc. Chipped stone projectile points were much more abundant in Sopris. More than 500 were recovered from one Sopris structure, as compared to 24 from all three excavated structures at Chase Orchard. The Sopris people also had a greater connection with Plains people to the east as evidenced by the presence of cord-roughened pottery.

There is apparently a relationship between the Poñil and Sopris phases, but I am not willing to subsume the one under the other. More probably they represent essentially parallel cultural developments in the two similar neighboring areas, starting perhaps a little earlier and lasting a little longer in the Cimarron district than in the Trinidad district. Sopris and Poñil phases most probably both developed ultimately from a common ancestral tradition, but with the Sopris Phase having significant contact with one or more contemporary neighboring Plains groups. Obviously both phases had contact with people in the Taos area but probably not exactly of the same nature. I surmise that Poñil Phase people, who were closer to the Taos area and had easier access to the Rio Grande valley, had a more intimate relationship with the people there and participated more fully in Developmental Pueblo culture. Apparently the Poñil Phase had achieved a more integrated or uniform cultural pattern than did the Sopris, who showed greater variability in traits such as architecture and subsistence pattern.

The question of an Athapaskan affiliation for the Sopris Phase keeps reappearing, but Zier and Kalasz (1999) reject

this connection on the basis of the differences in time between the Sopris phase and the arrival of the Athapaskans in the Southwest at ca. A. D. 1525 (D. Gunnerson 1956). Confusion apparently arose when Turner (1980) noted three roots on mandibular first molars in three of the thirteen human skulls excavated at Trinidad Lake Reservoir. Since the major occupation at these sites was Sopris Phase and this dental trait is common among Athapaskan speakers, but absent among other American Indians, it was assumed that Sopris people were Athapaskan. However, also recovered from Sopris Phase sites were both Ocate Micaceous and Cimarron Micaceous potsherds which I personally identified (Gunnerson 1987, 2001) at the request of the archaeologists involved. Thus, in addition to the major Sopris occupation there were at least two Apache occupations, one dating at least from the late 1600s or early 1700s and the other from the 1800s. The presence of Apaches in the Trinidad area is indicated in the 1719 diary of Valverde (Thomas 1935:110-132) and in various documents of the 19th century (Taylor 1966).

Gallina District

This district centers on the Gallina River (Figs. 1 and 169), a short tributary of the Chama some 45 miles west-northwest of Española, New Mexico, or 90 miles west of Taos. It extends north to essentially the Colorado state line. The earliest sites in the pueblo tradition here are pit house villages of the Rosa Phase. These sites, dated at about A. D. 700-850 or 900, are located on the headwaters of the San Juan River and in the Gobernador area (Hall 1944, Eddy 1968, Ford, Schroeder and Peckham 1972).

Following the Rosa Phase and generally thought to have evolved out it is the Gallina Phase. Sites of this phase are numerous and are of greatly varied types, from pit houses to multiroomed surface structures to stone towers. These sites attracted the attention of Hibben (1938, 1948, 1949). Pointed-bottom vessels associated with these sites were similar in shape to Plains Woodland and Navajo vessels, but not to Pueblo pots (Hibben 1938, 1948, 1949). The Gallina "problem" has also been dealt with by Mera (1935, 1938) and Riley (1954).

Cordell (1979), in her summary of the Gallina Phase, deplores the unevenness of the excavation data for Gallina sites of some types and periods, concluding that undue emphasis was placed on the more conspicuous sites. Also, the use of multiple phase names such as Gallina, Largo, and Largo-Gallina has caused confusion. In 1976 Dick suggested that the term Largo Phase be used for Gallina sites dating from A. D. 950 to 1100 (Cordell 1979), but Cordell points out that there are very few sites known from this period and simply retains the name Gallina. The earliest Gallina tree ring dates are A. D. 1059 and 1106, but there are no others until the early 1200s. The obvious temporal gaps between Rosa and Gallina and within the Gallina series may reflect archaeologists' not taking an interest in sites of that period.

Cordell notes that since Rosa Phase sites are primarily pit house villages and since pit houses continued to be common in early Gallina one might expect transitional Rosa-Gallina villages to consist primarily of pit houses and be not overly conspicuous. Indeed, Seamon in 1976 noted that there are "literally hundreds of single pit house depressions throughout the Gallina area" and Cordell suggests that these, if excavated, might fill the gaps (Cordell 1979).

Starting in the Rosa Phase, many of the villages in the Gallina area were enclosed by palisades, suggesting hostile pressures and probable attacks. This possibility is further supported by evidence of physical violence, cannibalism, and many burned structures, some containing human skeletons (Stuart and Gauthier 1981). The pressure may well reflect the increasing disruption, fall and dispersal of the Chaco and Mesa Verde cultures which apparently reached a truly critical level about A. D. 1200.

Cordell (1979) points out the similarities and differences between the sites in the Gallina and Taos districts. In both, pit houses continued to be utilized to an unusually late date. However, carbon paint, on Gallina Black-on-Gray, appears earlier than it does in the Taos area, but this trait in Gallina could reflect influence from Mesa Verde where it appears earlier than on the Rio Grande. It may be significant that utility pottery has surface manipulation resembling Taos Incised. Also, Gallina utility vessel shapes with their pointed bottoms better match those from Chase Orchard than those from the Taos area.

By comparison with the Poñil Phase, Gallina exhibits great site diversity, but with well established and sophisticated architectural detail, especially in the pit houses. Since some of its traits apparently changed slowly, the Gallina Phase has been considered isolated and conservative. The Poñil Phase was even more isolated from what was developing in the Chaco and Mesa Verde areas.

Fremont Area

There are some interesting similarities, perhaps coincidental, between the Poñil Phase and the Fremont culture that occupied most of eastern Utah (Fig. 169) between A. D. 800 and 1200, thus overlapping Poñil in time. As I have pointed out (Gunnerson 1969), the ceramics of both of these phases include a major component of surface-manipulated plain gray ware, apparently far more than found elsewhere in the Southwest. Both phases also include plain gray and black-on-white pottery, but very little corrugated pottery. Since Gallina also has surface-manipulated ware, there is an arc of complexes with such pottery bordering the northern and northeastern rim of the Anasazi area, broken only by an apparent gap of some 160 miles in the southwestern corner of Colorado. There is a similar distribution of another unusual trait, stone towers, which are found from the

Fremont area on through southwestern Colorado and into the Gallina district, perhaps even in the Sopris (Trinidad) area in attenuated form, but not in the Cimarron district.

If the sharing of these unusual traits, along with much more widespread ones, does represent communication, it is tempting to look to linguistics for a possible explanation. I feel it is safe to assume that Poñil people were Tanoan speakers and that the Fremont people spoke an Uto-Aztecan language. If Trager (1967) is correct that those two language families split about 2000 to 1000 BC in the northern Plains, we could be looking at 2,000 or more years of communication.

Chase Orchard Pueblo
Summary and Conclusions

Our excavations at Chase Orchard Pueblo were limited to parts of two summers with small crews. The results, however, were highly rewarding both in terms of recovering new and unique data on pueblo architecture and gaining possible new insights into Tanoan culture history.

Our work clearly demonstrated that the Poñil Phase, to which the Chase Orchard Pueblo is assigned, is a variant of the Anasazi pattern, but with several distinctive traits, which we describe. More specifically, we attribute the Poñil Phase to the Tanoans and are able to more precisely define distinctive attributes of the Poñil Phase. Some of the traits that distinguish the Poñil phase from other Anasazi complexes may reflect a northern Plains origin for the Tanoans. George Trager (1967), on the basis of his linguistic reconstruction, suggested that the Tanoans migrated south from the northern Plains about two to three thousand years ago. We are further suggesting (in the following section) that these northern ancestors are represented archaeologically by one of the Avonlea-like cultures summarized by Davis (1988). Traits that may have been retained from such a complex, in an archaeological and/or ethnographic context, include, in addition to the Tanoan language, small side notched projectile points, pointed bottom pottery vessels, structures (early in the Cimarron area) built on simple rock circles, dispersed settlement patterns, patricentric-leaning social organization and more emphasis on hunting than is found in other Anasazi groups. Contact with Keresan peoples to the west would have given Tanoans their Anasazi orientation. This "Puebloization", especially noticeable among the Towa who, quite soon after splitting from the other Tanoans, merged with the people of the Rosa Phase. We are suggesting, following Trager (1967) in general, that the rest of the Tanoans stayed together until they arrived in northeastern New Mexico about A. D. 400. Here their culture evolved into the Poñil Phase about A. D. 1100. By about A. D. 1200 these other non-Towa Tanoans, the ancestors of the Tewa and Tiwa, had dispersed to the south and west.

The Poñil Phase, as indicated above, has a basic pueblo pattern that it shares with all other Anasazi complexes, plus several traits that distinguish it. Among the more significant traits that the Poñil Phase shared with other Anasazi complexes of the same time period include:

- Subsistence based primarily on horticulture with limited hunting
- Structures with contiguous rectangular rooms of adobe construction
- Kivas
- Adobe rims around hearths
- Pottery, both plain utility and painted wares
- Manos and metates
- Limited assemblage of chipped stone tools
- Small notched stone projectile points
- Grooved stone mauls
- Stone axes

Traits found in the Poñil Phase, but apparently not present in other Anasazi complexes of the same time period include:

- Square above ground kivas (first found elsewhere at a slightly later time)
- Structures consisting of a cluster of a few rooms surrounding a larger square room (as op posed to rooms arranged in a straight line or an L)
- Settlement pattern of scattered small above ground structures (as opposed to larger communal structures)
- T-shaped deer scapula "knives"
- Small bilobate shell beads
- Presence of incised utility pottery (shared with sites in Taos and Fremont areas)
- Absence of carbon pigment paint on pottery
- Absence of corrugated pottery

Obviously, more work needs to be done to test and, hopefully, refine these ideas. If they prove to be at least partly correct, the disagreements among Ford, Schroeder and Peckham (1972) as to Tanoan culture history will be mostly resolved. They are in general agreement as to the course of development of the Keresans, Uto-Aztecan, and Zunian cultures in the Southwest.

A Suggested Reconstruction of Tanoan Origins and Migrations

Tanoan Origins and Migrations

There have long been attempts to identify various Anasazi archaeological complexes with particular historically known ethnic or linguistic groups. Perhaps the most thorough reexamination of various suggested is that undertaken by Ford, Schroeder and Peckham (1972). These three archaeologists were in general agreement on most points, but disagreed on others, especially with regard to the Tanoans.

They all see the earliest Anasazi peoples as Keresan speakers who initially were sparsely spread over the Pueblo Southwest. They also attribute the later spectacular development in the Chaco and Mesa Verde areas to the Keresans. With the abandonment of these areas by A. D. 1300, Ford et. al. see these Keresans as moving south and east, perhaps in some cases joining linguistic kinsmen.

They do allow for the possibility that the Zuni arrived in the Anasazi area about as early as did the Keresans, but did not disperse widely. In any case they believe the Keresans and Zuni established the basic Anasazi culture pattern.

Ford et. al. (1972) accept the generally held idea that the Uto-Aztecan speaking Hopi can be traced back some 1500 years to the Kayenta branch of the Anasazi, located in southern Utah and northern Arizona. They do not, however, agree among themselves on much of the history of the Tanoans, except for that of the Jemez.

Our work in the Cimarron area, considered in the light of other archaeological data, and a very stimulating linguistic reconstruction by George Trager (1967), has provided the basis for our proposed reconstruction of Tanoan origins and migrations.

Tanoan Linguistic Clues

Trager (1967:340) suggested that:

> "Kiowa-Tanoan separated from the Uto-Aztecan somewhere between 2000 and 1000 B. C. Sometime in the next two millennia or so Kiowa and Tanoan separated from each other (1 A. D. – 500 A. D.). The Tanoan speakers first broke up into linguistic ancestors of the Jemez as against the rest of the family, between 500 and 750. The other Tanoans may well have remained speakers of a single language for another 250 years or more. About 800-900 years ago, Tewa and Tiwa were separated, and not much later the Taos and Picuris were separated from each other about 700 years ago."

Also of special relevance is Trager's (1967:348) idea that:"the Kiowa-Tanoans had come down from the northern plains to what is now eastern Colorado or perhaps eastern New Mexico".

Ford et. al. (1972), with the possible exception of Peckham, reject Trager's reconstruction and apparently favor a Kiowa-Tanoan homeland farther south, perhaps in southeastern New Mexico. By implication, Trager (1967) assumes that the homeland of the Uto-Aztecan speakers was also on the Northern Plains before they separated from the Kiowa-Tanoans.

Tanoan Ancestors: The Avonlea-like Complexes

On the Northern Plains, centering in what is now Montana, are several similar archaeological complexes that could qualify for ancestral Kiowa-Tanoan (Fig. 170). Each lasted for a few centuries between 600 B. C. and A. D. 1300 with overlapping spans (Davis 1988). Since the best known of these complexes is the Avonlea (100 B. C. – A. D. 1300), I choose to call the entire group "Avonlea-like." Some of the other included complexes, with their radiocarbon dates, are: Beehive (590 B. C. – A. D. 670), Besant (400 B. C. – A. D. 1000), Benson's Butte (A. D. 400 – 1000) and Old Woman (A. D. 500 – 1100) (Davis 1988). These complexes, known primarily from bison kill sites, are characterized by having a wide variety of projectile points including a small triangular side-notched type called the Avonlea side-notched. These may be the earliest such points on the Plains and closely resemble those from Chase Orchard Pueblo. Also found in these complexes are various other chipped stone artifacts, especially scrapers, bone artifacts, simple milling slabs and manos. The presence in some complexes of limited amounts of pottery, including vessels with pointed bases, and circular rock walled structures, is especially significant. The Avonlea-like complexes are in the right location and of the right time period to be the source of non-Anasazi, Plains-like traits in Tanoan complexes.

Kiowa Tanoan

About A. D. 400 the part of the Avonlea-like population that was to become the Kiowa-Tanoans began to scatter. The Tanoan part of the family moved south and west while the Kiowa remained in the vicinity of the headwaters of the Missouri River. (The Kiowa continued living in that area until about A. D. 1700 and did not settle permanently on the Southern Plains until after 1800.)

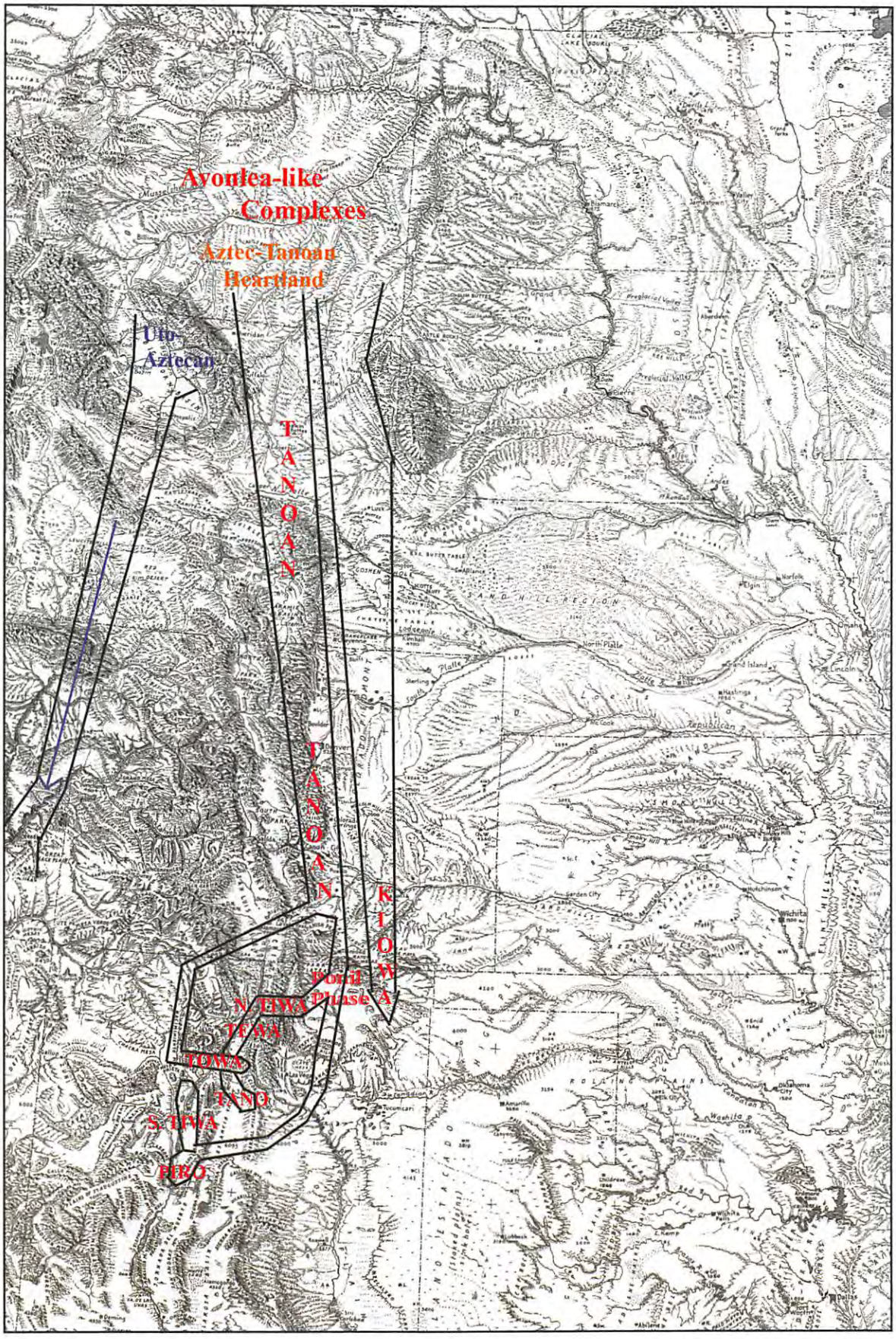


Figure 170. Suggested reconstruction of Tanoan origins and migrations. Routes are schematic only and not intended to be precise. Map adapted from Raisz 1957.

Towa

Rosa Phase

At about A. D. 500, probably in eastern Colorado, the Towa separated from the rest of the Tanoans and moved to the Gobernador area in northwest New Mexico. There, about A. D. 700, they joined a small group of non-Tanoans of the Rosa phase who had their roots in the upper San Juan drainage. This provides an explanation for Eddy's (1966:424) observation that after A. D. 750 there was a major population buildup in the Rosa Phase. He states that:

> "The increase in number of [Rosa Phase] sites was so dramatic after A. D. 750 that natural biological reproduction could hardly account for the expansion."

Eddy (1966:488) also noted that during the Rosa Phase there was a peak in the number of scrapers to 25.5% of the lithic assemblage. We suggest that this increase could be accounted for by the merging of the Avonlea-like people from the Plains with the Rosa Phase people.

The idea that a non-Anasazi group joined the Rosa Phase people and introduced Plains traits such as pointed bottom pottery vessels is not new. Mera (1938), in an attempt to explain Navajo origins, was perhaps the earliest to suggest such a merger. Hall (1944) elaborated on the idea and Riley (1954:47) concisely summarized it. The ideas presented by Riley are quoted by Hester (1962:16):

> "The nomads, possibly ancestors of the Navajo, infiltrated the Southwest before A. D. 900, perhaps intermarrying into Rosa Culture. These invasions continued and forced the Rosa people about 1000 to retreat to the highlands where they adopted some of the introduced traits included pointed bottom pottery, and became the Gallina culture."

Once it was generally accepted that the Athabaskans did not arrive in the Southwest until the early 1500s, as D. Gunnerson (1956) had established, this concept has received little notice. However, if one substitutes "ancestors of the Towa" for "ancestors of the Navajo" the summary statement by Riley matches our proposed reconstruction. We are further suggesting that the "nomads" were one of the Avonlea-like cultures.

Largo-Gallina Phase

About A. D. 900 the Rosa Phase, with the addition of the Avonlea-like people, evolved into the Largo-Gallina phase. The Rosa phase would have contributed Mesa Verde Anasazi elements while the Avonlea-like culture would have contributed much of the population, the language and a Plains flavor.

Archaeologists generally agree with Reiter (1938) that about A. D. 1100 the Towa moved some 50 miles from the Gallina area to the Jemez area and, in our reconstruction, the Pecos people continued east another 65 miles to their historically known pueblo southeast of Santa Fe. In 1838 the few remaining Pecos rejoined their Jemez relatives. From the Gallina period onward, this reconstruction is in agreement with Jemez traditions and is generally accepted by Ford et. al. They have some reservation about the Pecos having been Towa speakers, but this is clearly supported by historical documents.

Tiwa and Tewa

After separating from the Towa, the rest of the Tanoans continued moving south along the foothills of the Sangre de Cristos, arriving in northeastern New Mexico about A. D. 500. The Vermejo phase, with a radiocarbon date of A. D. 510 (Glassow 1980:71), is the earliest substantial occupation in the Cimarron area and probably represents the as-yet undifferentiated Tiwa and Tewa shortly after their arrival.

Glassow (1980) demonstrated cultural development in the Cimarron area from about A. D. 500 until into the 1200s. About A. D. 900 there was increased Pueblo influence apparently from the Chaco area. By then some of the Tanoans had moved from the Cimarron area across the mountains into the Taos valley where they are represented archaeologically by the Valdez phase, which is probably ancestral to both the Northern Tiwa and the Tewa.

Tewa and Tano (?)

In the early 1100s the Tewa (probably including the Tano) moved from the Taos area to the then-unoccupied lower 25 miles of Chama Valley. Schaafsma (2002:191-207), after a thorough review of the literature, presents a concise summary of Tewa archaeology in the lower Chama valley and its tributaries. He concludes that the Tewa were well established there by A. D. 1300. He further notes that in the lower Chama area there have been found very little documented Kwahe'e Black-on-White pottery, which he dates at A. D. 1025 – 1175, and only small amounts of Santa Fe Black-on-White (A. D. 1175 – 1300). Thus, an archaeological date of about 1100 for the split of the Tewa from the Northern Tiwa is reasonable and is an excellent match with Trager's (1967) linguistic date of 800-900 years ago.

About 1550 the Tewa moved to their historically known locations along the Rio Grande and the Tano continued south and east (Figs 1 and 170).

Northern Tiwa

The northern Tiwa (archaeologically the Pot Creek Phase) stayed in the Taos area and about A. D. 1250 the Taos and Picuris started acquiring their separate identities.

Southern Tiwa and Piro (?)

Those Tanoans who had remained in the Cimarron area abandoned it in the early 1200s, moving south along the foothills to the Santa Fe-Albuquerque area to become the

Southern Tiwa (Sandia, Isleta) and perhaps the Piro (Figs. 1 and 170).

There would have been, of course, continuing contact among the various Tanoan groups throughout their histories.

Appendix I:
Faunal List-Chase Orchard Pueblo

R. George Corner
University of Nebraska State Museum

29CX46 FAUNA

Taxon	Common Name	F5	F31	F42	F44	F49	F55	F57	F58	G1	G5	Total	
Meleagris gallpoavo	Wild Turkey				1/1							1/1	VR
Lepus sp.	Jack Rabbit				2/1	1/1						3/1	R
Sylvilagus sp.	Cottontail Rabbit				7/1	16/2						23/2	VC
Cynomys gunnisoni	Gunnison's Prairie Dog				4/1		1/1					5/2	R
Spermophilis variegates	Rock Squirrel		1/1		1/1							2/1	R
Spermophilis sp.	Indet. Ground Squirrel				1/1							1/1	VR
Castor Canadensis	Beaver					1/1						1/1	VR
Canis familiaris	Dog					1/1						1/1	VR
Canis latrans	Coyote				1/1							1/1	VR
Canis lupus	Wolf				2/1	1/1						3/1	R
Urocyon cinerereoargentus	Gray Fox		1/1									1/1	VR
Ursus americanus	Black Bear											1/1	VR
Felis concolor	Mountain Lion					5/1						5/1	R
Lynx rufus	Bobcat					1/1						1/1	VR
Odocoileus virginianus	White-tailed Deer				1/1							1/1	?
Odocoileus spp. (O. virg. Or O. hemionus	White-tailed Deer or Mule Deer	2/1	2/1	4/1	24/2	26/2	1/1	2/1	3/1	3/1	2/1	69/5	VC
Antilocapra Americana	Pronghorn	1/1		1/1	3/1	5/1		1/1				11/1	C
Bison sp.	Bison						1/1					1/1	VR
	TOTAL	3/2	4/3	5/2	47/12	58/12	3/3	3/2	3/1	3/1	2/1		

Notes

The ratio in the table compares the total number of elements identified (upper number) to the minimum number of individuals recovered (lower number). The species are listed as very rare (VR) if only one element was identified; rare (R) if between two and five elements were identified; common (C) if between six and 20 elements were identified; and very common (VC) if over 20 elements were identified. Of particular note is the fact that only one bison bone, a fragment of a long bone diaphysis, was recovered. All species recovered were found in Colfax County into historic times (Findley, et al., 1975). *Canis familiaris* was identified on the basis of one ulna, which was intermediate in size between the coyote and the gray fox. The prairie dog (*Cynomys gunnisoni*) may be intrusive. The only positive identification of the white-tailed deer (*O. virginianus*) was based on a shed antler. The subspecies of the white-tailed deer found in New Mexico today is an extremely small form. It is suggested by the numerous cervid elements that two distinct size ranges occur in this material. No attempt was made to separate this material. No lagomorph mandibles with P/3's of *Lepus* and *Sylvilagus* were found to enable one to speciate the rabbits.

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