PUEBLO LARGO (LA183)

Including the Excavations of Bertha Dutton; 1951-1956,
and unpublished manuscripts from David M. Brugge, Lyndon L. Hargrave,
Richard Honea, Thomas W. Mathews, and Erik K. Reed.

By

Gordon P. Wilson, Leslie Goodwill Cohen, Carole Gardner
with G. Stuart Patterson, database manager

Maxwell Museum Technical Series No. 23
University of New Mexico

Aerial Photograph of Pueblo Largo (LA183), John Roney, June 1994

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Maxwell Museum of Anthropology
MSC01, 1050, 1 University of New Mexico
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A NOTE FROM THE SERIES EDITOR

Ordinarily the Maxwell Museum Technical Series does not include reports that I have not edited and reformatted. In this case the authors have done such a careful job of preparing the report that the museum will publish the report as submitted. Archaeologists have waited a long time to learn about the work described in this report; why make them wait any longer?

David A. Phillips, Jr.

ACKNOWLEDGMENTS

The authors are indebted to the Museum of Indian Arts and Culture / Laboratory of Anthropology (MIAC/LOA) for providing access to the ceramic collections and archival material from Dr. Bertha Dutton's 1951-1956 excavations of Pueblo Largo (LA 183) in the Galisteo Basin of New Mexico. In addition, we wish to credit the cooperation of the Laboratory of Tree-Ring Research (LTRR) at the University of Arizona in providing access to the analysis of tree rings from Pueblo Largo.

We wish to acknowledge the following individuals:

At the Laboratory of Anthropology; Dody Fugate, Cordelia Snow, Julia Clifton, Allison Colborne, David McNeese, Tony Thibodeau, Lisa Mendoza, Valerie Verzuh, Diane Bird, and Chris Turnbow, former Deputy Director.

For their photographs and stories; these former Girl Scouts: Kay Fowler, Mary Ann Stein, and Sue Martin. Curt Schaafsma for his experiences with working with Bertha Dutton at Las Madres. James Snead and Richard I. Ford. Dean Wilson and Wolky Toll of the Museum of New Mexico, Office of Archaeological Studies for their assistance to the authors on this project. Tom Windes for tree ring expertise. David A. Phillips, Jr. of the Maxwell Museum, University of New Mexico, for making this report digitally available. Finally, thanks to Scott G. Ortman, University of Colorado, for reading this report and offering his observations and advice.

INTRODUCTION AND RESEARCH OBJECTIVES

In 2006, the authors of this report completed photographing, assembling, and publishing the *Guide to Ceramic Identification: Northern Rio Grande Valley and Galisteo Basin to AD 1700* (third edition) & *Easy Field Guide to Tewa Ceramics* (second edition). We wanted to use these ceramic guides to work through an unanalyzed ceramic collection at the Laboratory of Anthropology in Santa Fe which might add to archaeologists understanding of Santa Fe area pre-history. We were advised not to do so, as analysis of collections housed at the Laboratory, which had not been written up by the actual excavator or researcher, could, more often than not, prove extremely difficult and frustrating for someone else. Such sound advice proved accurate, which is very unfortunate, considering the large number of excavation collections which have never been analyzed or results published, risking permanent loss of the data and analysis and even the collection.

Dr. Bertha Dutton's work from Pueblo Largo in the 1950s presented an attractive opportunity to analyze a significant ceramic collection and to gather and publish some of the accumulated information about this important site. Largo and other northern Rio Grande sites appeared relatively suddenly during a major population surge in a previously sparsely occupied area. The increase in population appeared to coincide with the departure of the people who had been living on Mesa Verde and its environs. Obviously, one of the questions to be posed to any excavations in the Galisteo Basin is whether there was any evidence of a connection between the abandonment of the Colorado sites and the surge in population in the Galisteo Basin to the southeast. Or, was the timing sheer coincidence?

When we began the analysis, none of the eight large Galisteo Basin sites[1] mentioned by Nels Nelson (Nelson 1914) had been excavated since his 1912 work, which was before ceramic typology had been established for the Northern Rio Grande area. Arroyo Hondo, in the Santa Fe River drainage just to the north of the Galisteo Basin, was the nearest exception with overlapping excavation dates. It was excavated between 1971 and 1974 by the School of American Research. So, we plowed ahead, examined the database of the Laboratory of Anthropology's Largo/Dutton collection, and had a few cartons labeled "sherds" brought in to the basement of the Laboratory of Anthropology. We began to analyze the Pueblo Largo sherds on May 18, 2006.

Initially our goal was to organize and make accessible the results of Dr. Dutton's six years of summer excavations of Pueblo Largo (LA 183) with senior Girls Scouts from across the country, and to analyze and type the large collection of ceramic sherds excavated from Pueblo Largo. This effort would, we hoped, provide a significant amount of data regarding the ceramics of Pueblo Largo, as well as allow us to accumulate and publish much of the unpublished research done by others (especially the Girl Scouts) on the site. This would include the tree-ring dates determined by the Laboratory of Tree Ring Research at Tucson from a sizeable collection of wood samples taken from Pueblo Largo by Dutton, Nelson, and others, as well as architectural information and comments from the Girl Scout excavators, unpublished manuscripts, and any other information associated with this large collection. We hope that our efforts will allow Largo's rich data to become more easily available to professionals, students, and the general public.

Note:

1. The eight large Galisteo Basin sites are: Pueblos Colorado, She, Galisteo, San Lazaro, San Marcos, San Cristobal, Blanco, and Largo.

Our review of the information contained within the collection, plus the data complied by others, led us to establish the following questions:

1. When was Pueblo Largo occupied as indicated by the ceramic assemblage?
2. Do the ceramic dates and the numerous tree-ring dates complement or contradict one another?
3. Who else was living in the area; is there good evidence that Pueblo Largo was occupied at the same time as Arroyo Hondo, Pindi, and San Marcos? In other words, did Largo have neighbors?
4. Is there archaeological evidence of immigration from, or trade with, Mesa Verde or other areas?
5. Was the site burned, as Nels Nelson suggested from his short examination of the site in 1912?
6. What were Dutton's conclusions about Pueblo Largo?

By 2013, our ceramic analysis was finally complete and we had perused and digested all the other Pueblo Largo material we could find, Leslie Goodwill Cohen began the process of writing up our analysis and conclusions. Much of the writing is hers. In early 2014, I took up the responsibility for the accuracy of the data and for finishing the text, while the conclusions remain a joint effort. Any and all errors in data belong to the authors.

Gordon P. Wilson, Santa Fe, New Mexico

Figure 1. Girl Scouts, "Dutton's Dirty Diggers," in front of the Laboratory of Anthropology, Santa Fe, NM, ca. 1950s. (Bertha Dutton Collection, Museum of Indian Arts & Culure, Laboratory of Anthropology [MIAC/LOA], Cat. #A3-028)

RESEARCH METHODOLOGY

We began with the Pueblo Largo Archaeological Research Data Base listing of catalogued carton contents descriptions. Many of the cartons were listed as sherds, without a provenience. We analyzed all cartons without a description of contents or provenience listed in the data base to be sure that we had all of the cartons with ceramics identified. The ceramic sample, excavated by Dutton during her Girl Scout field schools analysis, consisted of 81 cartons of sherds from 24 rooms, areas or structures, two kivas and a possible third kiva, and a midden trench. We analyzed the available ceramics from these structures and areas and also from a surface collection made by H.P. Mera in 1932

Twenty-one excavated rooms are in Roomblock V, at the northern end of the pueblo. At the southwestern end of the pueblo, Kiva A is located in the plaza associated with Roomblocks I, II and III. Room I-3 is located on the southern arm of Roomblock I. Room IV-f-2 and Room IV-e-3 are in Roomblock IV, and a trench (B-1) and Kiva B are located between Roomblocks IV and V. We read the Girl Scout notebooks (field diaries) associated with the excavations of the targeted structures for all information about the excavations, room measurements and features, artifacts discovered and any other useful information. Most but not all of the Girl Scout excavation notebooks were in the collection.

This study includes all of the tree ring samples taken from Pueblo largo by Dutton, Nelson, and Stallings, but will not involve analyzing the non-ceramic artifacts. But we reference and briefly summarize archival letters and unpublished manuscripts regarding the analysis of corn, lithics, fauna, and human remains found during the excavations. We also perused, and commented where appropriate, Dutton's published and unpublished articles and manuscripts, and incorporated a new map of Pueblo Largo, using Nelson's original map with alterations and notes from Curt Schaafsma and James Snead. Photos by Dutton, Girl Scouts, the Office of Archaeological Studies, and ourselves were added.

All Pueblo Largo tree-ring dates from Dutton's and Nelson's excavations, Stallings collections in 1931, (all in LTRR records) and Robinson's 1973 publication were consolidated and compared to the ceramics of the target structures. Definitions of ceramic typology used in this analysis and report were derived from *The Guide to Ceramic Identification: Northern Rio Grande and Galisteo Basin to 1700 AD*. Second edition. Dutton, or another member of the excavation team, used 10 ceramic "type" names, not then defined or in use, for the Pueblo Largo geographic area: Pinnawa, (used now to describe ceramics from the earliest years of Hawikuh, near modern-day Zuni), Sena, Western Tradition Black-on-white, Anaya, Lamy, Doyal, Pelon, Dolores, (described in 1981 as a Mesa Verde region ceramic), Las Madres, and Abajo. (described in 1946 for the Alkali Ridge area of southern Utah). Dutton never published her descriptions of these names, and two of them were later used as type names for southern Utah (Abajo Black-on-gray) and Colorado Plateau (Dolores Brown). These sherds were not numbered by Dutton and thus we were unable to re-examine the specific sherds or find any which we believed were clearly ceramics of these two types. A few other sherds were named "Estacada Glazeware" which is also unknown but likely refers to Estacada Wash, which borders Largo's east side. Estacada Wash as a typology is not defined and did not survive as a type.

References in the Dutton collection to sherds shipped to Frank Harlow for reconstruction were not useful. Dutton excavated or partially excavated 27 structures, kivas, middens, and trenches over five field

seasons of two weeks each. Remarkably, this work resulted in very few whole or mostly complete whole ceramic vessels. Many "partial vessels" were collected separately and given tentative ceramic collection numbers for accession into the Museum of Indian Arts and Culture ceramic collection but were never accepted for lack of enough pieces to be meaningfully re-assembled. This included several partial vessels which had the notation that they had been reconstructed by Frank Harlow. The sherds from these partial vessels had been returned to the sherd collections and were analyzed by the authors and included in the total sherd counts in this report. One reasonably complete Biscuit B bowl from her Largo excavations was reconstructed by person or persons unknown, along with one partial Glaze C jar from room IV-3.

We analyzed all sherds we could find from the Dutton excavations except for some Trench B sherds, where we analyzed 7,944 sherds from a sample of four trench squares. Considering the uniformity of the types and percentages of their occurrence in each square, the modest depth of the squares, and that the four squares by that time amounted to 30% of our total ceramic collection, we determined that no further analysis of Trench BI (Midden B) need occur.

The results of the analysis of virtually all of the ceramics excavated from Pueblo Largo, except for additional and likely redundant sherds from Midden B, and the inclusion of all 410 tree ring samples, of which 117 were cutting or near cutting dates, dated by the Laboratory of Tree Ring Analysis are presented here.

PREVIOUS WORK

Nels Nelson Excavation 1912

Pueblo Largo (LA 183) is a late Coalition site with pre-Glaze black-on-white ceramics and Glazes A through C, and possibly Glaze D. Northern Rio Grande ceramic typology and the use of tree rings for dating was not yet established when Nelson excavated in 1912. Nelson judged that Pueblo Largo had 489 surface rooms and perhaps half that amount of second story rooms (789 total rooms) of stone in "six community houses" surrounding five or more plazas holding 3 or more kivas, with a shrine feature south of the village. (Nelson 1914) Nelson's map shows that he counted two of the three sides of the triangle surrounding Plaza V as two separate "community houses," and he apparently did not notice the third side buried on the north knoll. We use the term Roomblock V or Plaza V area to represent this triangular enclosure of rooms that surround the smallish Plaza V.

The pueblo is approximately 30 miles south of Santa Fe and 4-5 miles south of Pueblo San Cristobal. Nelson's map shows 13 rooms excavated by him in the 5 roomblocks which contained 48 complete and 13 incomplete artifacts, (mostly manos and fragments), glazed, painted and corrugated ceramic sherds but no intact vessels, and two burials.

Nelson spent little time at Pueblo Largo because of difficulty in finding water for his camp and ". . . when resulting finds showed beyond a doubt that the culture represented was identical with that of the Prehistoric San Cristobal, the investigation stopped." He devoted only six pages in his write-up of his excavations. He found "traces of a spring," (called Pueblo Spring on the map of the Eaton Grant). Nelson found no evidence of a reservoir and concluded that Pueblo Largo could have experienced periods when

water was lacking and questioned the agricultural attractiveness of the surrounding fields. He did think the site was attractive defensively.

Nelson commented that Roomblock V looked to be two separate structures and that Roomblocks III and V "look as if they had been dismantled." He found charred timbers, over half a bushel of good quality carbonized maize, and plaster "burned a brick red" in Room IV-1, and suggested those were ". . . evidence of unusual heat suggesting that perhaps that part of the pueblo was burned." Nelson's conclusion on the occupation date of Pueblo Largo was that "The nature of the pottery and the general state of the ruin lend me to believe that the settlement cannot begin to compare in age with Pueblo San Cristobal. In other words – and this is also suggested by the lack of refuse heaps – Pueblo Largo cannot have been occupied for a very long period of time; and the indications are not wanting that its abandonment was forced by some human agency."

Bertha Dutton Excavations 1951-1956

Dr. Bertha Dutton joined the School of American Research in 1940, and with permission of the Sawyer Cattle Company of San Angelo, Texas, Dutton excavated portions of Pueblo Largo from 1951 to 1956, when the ranch on which Largo was located changed hands and new owners prohibited further work. Dutton's excavations were accomplished with groups of senior Girl Scouts who came from all over the country for a few weeks during five summers under the auspices of the Girl Scouts of America (Cohen 2006). They called themselves "Dutton's Dirty Diggers."

The Dutton Pueblo Largo collection at the Laboratory of Anthropology consists of 242 cartons of various sizes and 2 crates of ceramic, lithic, ground-stone, faunal and miscellaneous artifacts; 1 reassembled whole bowl, 1 partially re-assembled vessel, 25 folders of archived written materials including Girl Scouts field diaries from some of the structures; letters from Dutton to and from various researchers involved in analysis of the collection; analysis sheets for individual worked-sherds; 4 ceramic analysis sheets for different structures (appear to be incomplete); and an artist's rendering of what Pueblo Largo may have looked like.

The ceramic sample for the analysis, excavated by Dutton and her Girl Scouts, consisted of sherds from 24 rooms, areas or structures, two kivas and a possible third kiva, and a midden trench. We analyzed the available ceramics from these structures and areas, and from a surface collection made by H.P. Mera in 1932. We then combined this data with tree-ring dates from the over 400 wood samples from Pueblo Largo collected by Dutton, and by W.S. Stallings in 1933, of which 117 were cutting or near-cutting dates. One whole Biscuit A bowl and a portion of a Cieneguilla Glaze A Polychrome bowl, previously reassembled from the materials are in the vessel collection at the Museum of Indian Arts and Culture. Three ceramic "effigies" were cataloged as in M.I.A.C. Otherwise the ceramic collection consisted of sherds in 38 whole, 18 x 18 x 24 inch cartons, 24 half-size, 12 quarter size, and 7 one-eighth size cartons. The Dutton collection sherds had been re-bagged in plastic by Debbie Fisher in 1994 or CEK (?) in 1996. Some were typed by G.H. in 1994.

It is probably to be expected that a large collection will often not remain completely intact, if unanalyzed for over fifty years. But, we were disappointed that written materials normally produced during, and required by field excavations, were not found with the collection and are either missing, did not survive,

or were never created. There was no map of the site other than the 1912 map created by Nels Nelson during his excavation, and no measurements of distances of structures from a central datum point. We added informed comments from Curt Schaafsma and James Snead to Nelson's map. For Roomblock V, apparently the oldest part of the village, Dutton excavated 21 of a possible 40-50 surface rooms, putting the fill from one room into an excavated room next to it, or dumping it over the promontory rim to the east. Only one room's fill was screened. Neither Nelson nor Dutton backfilled their excavated structures, so visual inspection of the site allowed us to construct a structure map and probable structure numbering system for Roomblock V.

Information for some excavation areas is not sufficient for later researchers to confirm the identification of some area's function, and labels applied were not explained. Dutton labeled one structure as a "tower," but the notes and very rough sketch are scanty, indicating three curved, ground level wall segments, only a few feet in height and length. These were found beyond the northernmost of the three sides of the roomblock forming a triangle around Plaza V. A "fire pit" was encountered inside the possible circle, near the east wall. Sherds within the structure were numerous but visual inspection today finds very little stone rubble and no other notes described the "tower." The location is a perfect place for a tower, on a knoll with great views in three directions. But, if it was a tower, it would be the only one found in the Galisteo Basin to date.

We found no excavation reports or field notes for some of the excavated structures and excavation dates, other than circa 1950s black-speckled stenographers notebooks consisting of Girl Scout "diaries." There are four tally sheets of ceramic types from various structures, but these appear to be incomplete as their total sherd count adds up to substantially less than the final sherd counts for those structures. We found no notes or unpublished manuscript of a final site report of findings done by Dutton, and we believe she did not write one. However, the Laboratory of Anthropology does have an un-cataloged manuscript of Dutton's later Las Madres excavation. We have nothing definitively in Dutton's handwriting from the five years of excavation. We were unable to locate any sherds from her first year excavation of room IV-f-3, despite the fact that she commented on the sherds from this room in her El Palacio article later that year.

Several specialists, at the urging of Dr. Dutton, completed studies using the Dutton collection materials, which are included in the appendix to this report:

Brugge, David M., *Maize of Pueblo Largo*. Report on file, Archives of the Laboratory of Anthropology. MIAC/LOA, File #95 PLE.005, ca. 1957.

> David M. Brugge analyzed corn samples from Dr. Dutton's Pueblo Largo excavations. The archives contain 2 letters; one from Brugge to Dutton dated 18 May, 1957; and a return letter from Dutton to Brugge, dated 20 May 1957. The latter refers to a paper Brugge did for Dutton analyzing the corn samples. In this paper, Brugge states that he analyzed: A group of 24 fragments of cobs from refuse "Mound" B, a group of 169 fragments of cobs from several rooms associated with Plaza V, and 30 charred cobs from Room IV-e-(3). Two "racial groups of corn, the Basketmaker 'Sub-race' of the Mexican Narrow Ear Race and the Eastern Sub-race of the Guatemalan Big Grain Race, were found at all three locations. The third race, the Southwestern Sub-race of the Guatemalan Big Grain Race was present only at Room IV-e-(3)." Most of the samples submitted were hybrids of these sub-races." The Basketmaker Sub-race "…is presumably the type with which the Anasazi began

agriculture. Its source was probably Mexico." The Eastern Sub-race was believed to be a late comer to the Southwest, from the east, arriving about AD 1250.

Hargrave, Lyndon L., 1961, *The Identification of Bird Bone Artifacts from Pueblo Largo (LA 183), New Mexico*. Report on file, Archives of the Laboratory of Anthropology, Santa Fe. MIAC/LOA, File # 95 PLE.009.

The archives contain several letters from Lyndon L. Hargrave of the United States Department of the Interior, Southwest Archaeological Center in Globe, Arizona, to Dutton, dated November 1960 to April 1964. There is also a report entitled The Identification of Bird Bone Artifacts From Pueblo Largo (LA 183) New Mexico. Hargrave undertook to analyze the non-human bones from Dutton's excavation. Two bone ornaments were made from Great Horned Owl, (bubo virginianus). Sandhill crane, golden eagle, ferruginous hawk, red-tailed hawk, rough-legged hawk, common raven, Steller's jay, Pinyon jay, flicker, Clark nutcracker, crow, falcon, magpie, roadrunner, snow goose, mourning dove, mallard, ruddy duck, goshawk, and Lewis woodpecker.

Honea, Kenneth, *Flaked Stone Artifacts, Pueblo Largo LA 183 and Las Madres LA25*. Report on file, Archives of the Laboratory of Anthropology, Santa Fe. MIAC/LOA, File # 95 PLE.00, undated, ca. 1957.

Honea describes a basic lithic "tradition" believed to characterize the Galisteo Basin and adjacent areas during Pueblo III-V periods, consisting of 1) production of small, bifacial, rarely parti-bifacial, side-notched and non-side notched sub-triangular and foliate shaped projectile points with concave or straight bases; 2) non-notched, bifacial, pari-bifacial or unifacial, sub-triangular, foliate, oviate and lanceolate shaped knives; 3) flake side-scrappers; 4) dominance of pressure over hammerstone retouch, and 5) absence of cylinder-hammer flaking and primary dart points. He then states that Pueblo Largo and Las Madres ceramic assemblages, although contemporary and sharing a common lithic tradition, exhibit significantly different morphological traits, believed to be culturally determined and indicate that the Las Madres assemblage may not be indigenous to the region. The Las Madres differences are the dominance of concave base and side-notched and non-side-notched projectile points, limited knife and scraper types and varieties, apparent lack of drills, and the rarity of intrusive dart points. The absence of Plains type snub-nosed and side scrappers and two-edged knives made of Alibates dolomite is particularly noteworthy. Pueblo Largo, on the other hand, shares its lithic assemblage traits with other contemporary pueblos, including Pecos, Pindi, and Paa-ko. Pueblo Largo, like Pecos, both show the influence of Alibates dolomite lithics trade with the Plains.

Mathews, Thomas W., *Pueblo Largo, Santa Fe County, New Mexico; Faunal Identification of Bone Artifacts: Mammals*; Southwest Archaeological Center, National Park Service, Gila Pueblo, Globe, Arizona, undated ca. 1957.

In this paper, Mathews examined other faunal bone artifacts other than bird bones and concluded that they were from turkey, (meleagris gallopavo), jackrabbits (general), blacktail jackrabbits, dog or coyote, grey fox, bobcat, mule deer, bighorn sheep, and pronghorn antelope. Three hundred and one bone artifacts were submitted by Dr. Dutton to the Southwest Archaeological Center for study. The material was separated into three categories; Mammals, Birds, and Mammals and Birds Unknown. Lyndon Hargrave was assigned the bird bones, and Mathews the other two categories. The mammal bone artifacts from Pueblo Largo he characterized as a whole having a high frequency of awl forms; a few large forms of the ulna scraper types, and a general technical level showing few non-utilitarian aspects. Raw materials were drawn from a comparitavely narrow range of animals. Methods of

abrasion in the shaping and finishing of bone tools and the methods of channeling and splitting of long bones are common bone-preparation technique in Anasazi sites of the Southwest.

Reed, Erik K., *The 14th Century Population of the Galisteo Basin: Skeletal Remains & Burial Methods*. Report on file, Archives of the Laboratory of Anthropology, Santa Fe. (MIAC/LOA 90MSS.062a) File #91 EKR.042, 1956.

Reed's paper was later published by the National park Service as Human Skeletal Material from Pueblo Largo, in 1956 and revised in 1957. Reed studied 22 burials from Pueblo Largo, including 10 whole and 12 partial skeletons excavated by the Dutton field schools. Of these, 13 were found in the Midden Trench (B1). Girl Scout notebooks indicate one each partial burial was found in rooms V-5, V-8, V-12, and V-13. Nelson noted two burials; apparently leaving them in place. Reed indicated that almost all were found in a flexed position, the average height of five relatively complete males was 5 feet 2 ¾ inches and five relatively complete females was 4 feet 11 inches to 5 feet. Of the 20 individuals with enough of a sample, 4 were less than 4 years old, 4 were between 9 and 20, 8 were between 20 and 35, and 2 were between 35 and 45 years of age. There was considerable osteoarthritis in the older individuals, tooth wear was severe to extreme, molars were smallish by southwestern standards, and one "youthful" male had "an extreme form of some disease." One interesting note by Reed is that: "a Klagetoh female skeleton, approximately 35 to 40 years old, was found in room V-12 in association with one St. John's Polychrome sherd. One male diverged from the norm; exceptionally broad-cheek-bones, well-developed brow ridge, and strong bilateral chin. "He might be considered a representative of the Ainoid or 'pseudo-Australoid' element or variant of the Southwestern Plateau or Ashiwid type."

THE GALISTEO BASIN

The Galisteo Basin is located south of Santa Fe, New Mexico, on the east side of the Cerrillos Hills and Ortiz Mountains and drained by the Galisteo Creek, which flows westward into the Rio Grande. Its topography is a series of rolling drylands, bluffs, mesas and volcanic features, mostly basalt dikes, cut by intermittent streams and washes and bordered by mountains and hills on the west, north and east sides. Elevations are roughly 5400 to 7500 feet, and the Basin contains no major permanent streams. Human habitation sites are rare in the Galisteo Basin during the early Paleo-Indian (9500-5600 BC), and Archaic (5500 BC-AD 400) periods, but increased modestly during the Developmental (AD 600-AD 1200), and Early Coalition (AD 1200-AD 1325) periods. The Basin was apparently too dry for reliance solely on agriculture.

Starting in the AD 1250-1300 period, the Basin experienced a massive increase in population and aggregated village sites of up to 2000 rooms, suggesting that the Basin suddenly saw sufficient moisture to support the adoption of and reliance on intensive cultivation. Eric Blinman postulates a shift in the storm track south, from over the Mesa Verde area, to over the Basin, as the continent cooled in the AD 1200-1450 timeframe (Blinman, p.c. 2004). Pueblo Largo was established in the AD 1200-1300 Coalition Period. Largo, San Lazaro, and the six other largest Galisteo Basin sites of San Marcos, San Cristobal, Galisteo, She, Colorado, and Blanco all reached their maximum sizes during the Classic Period, starting around AD 1325 and lasting to AD 1600.

These large population centers grew and thrived for a few centuries and then declined due to climate deterioration and cultural conflict with indigenous hunter-gathers from the east and north and Spanish explorers, settlers, and diseases from the south. By Coronado's appearance in AD 1541-1542, only three or four of the pueblos (Galisteo, San Marcos, San Lazaro, and San Cristobal) are still occupied (Pedro de Casteneda 1550? from Barrett 2002).

As shown on the following map of the Galisteo Basin, Pueblo Largo is the furthest southeast and the smallest of the eight great pueblos mentioned by Nels Nelson (Nelson 1914). No permanent source of water has been found in or close to Pueblo Largo. Largo's site started as quite defensive, with the roomblocks surrounding Plaza V on a promontory with steep walls on three sides. All three steep sides of the Plaza V roomblocks on the promontory are approximately 50 meters above Escavada Wash. The Plaza V roomblocks appear to form a triangle, enclosing the plaza, which may have had a narrow opening to the more level fourth side, toward Plaza B, Kiva B, and Roomblock IV, to the south. Roomblocks I through IV, constructed much later, are not considered defensive, with three sides rather flat and sloping gently west and southward. No outer walls have been found.

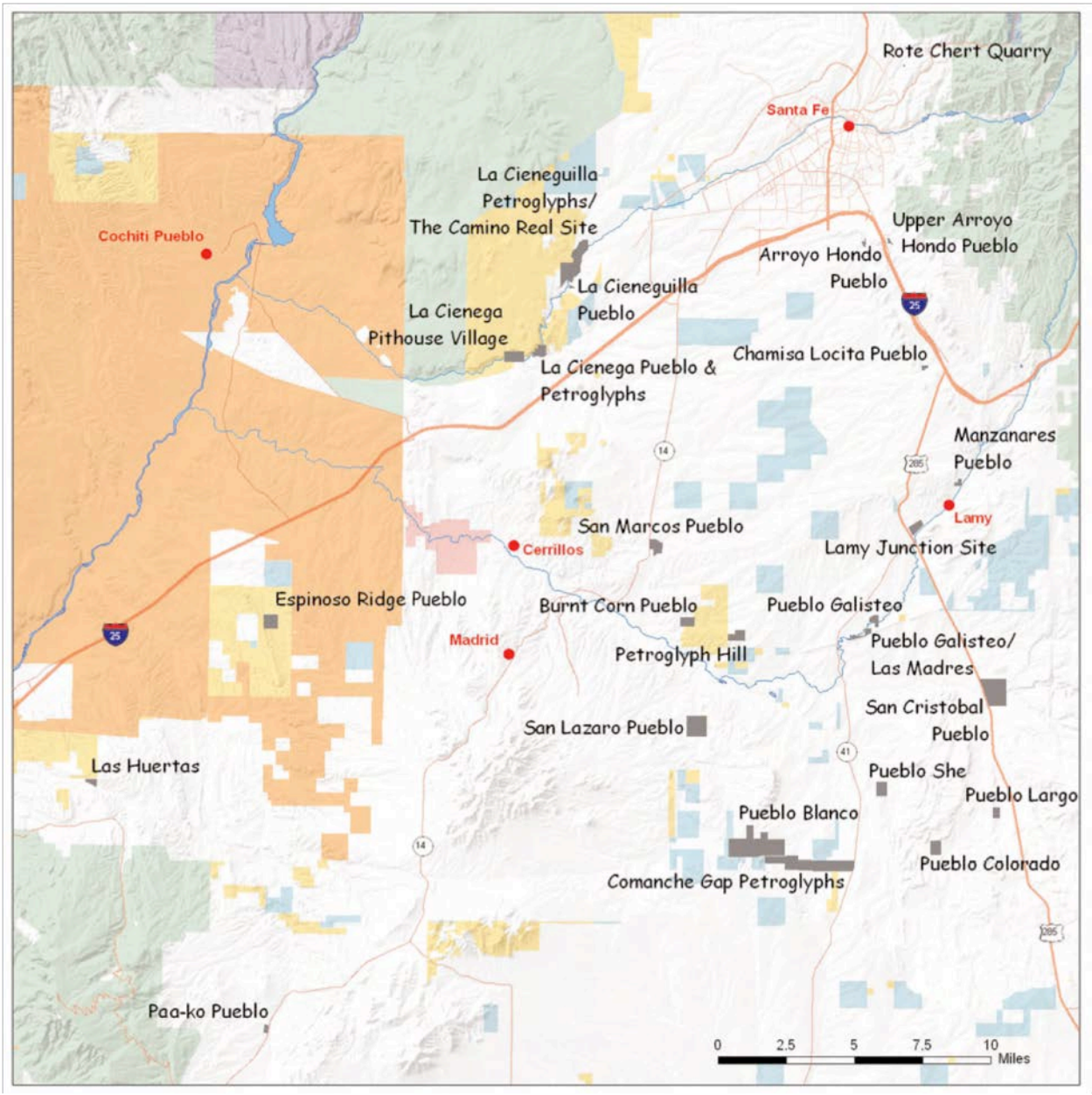


Figure 2. Jaquith, Scott G., Galisteo Basin Watershed and Drainage Map, Digital Illustration, 2012. Web image. *Galisteo Basin Archaeological Sites Protection Act. 2013*. <http://galisteo.nmarchaeology.org/geography/galisteo-watershed.html>

GALISTEO BASIN CERAMICS

Rio Grande ceramics, including those in the Galisteo Basin, are reasonably well defined after AD 1200. All the Pueblo Largo ceramics we analyzed are types that date to before the arrival of the Spanish. This is consistent with the tree-ring chronology for the site. We identified only a trace amount of earlier mineral-painted black and white ceramics. Ceramic typology used in this analysis is derived from *The Guide to Ceramic Identification: Northern Rio Grande Valley and Galisteo Basin to 1700 AD* (Wilson et al. 2009).

Historically, two temporal classification systems have been applied to the ceramics of the Galisteo Basin; Kidder's Pecos Classification (1927) for the Southwest and Wendorf and Reed's (1955) system that is specific to the central and northern Rio Grande regions. These systems rely on temporal changes in ceramic styles and types, along with architecture and settlement patterns (Stewart 2013). We employ Wendorf and Reed's system because it is what archaeologists working in the Galisteo Basin are using today. It can be thought of as a "regional expression of the Pecos Classification that also emphasizes patterning in settlement size, location, and organization and continues to use ceramic types as chronological markers" (Stewart 2013). The following table provides a comparison of the Pecos Classification and that of Wendorf and Reed.

STAGE/ TRADITION	**PERIOD** (Pecos Classification System)	**PERIOD** (Northern Rio Grande)	**CERAMIC TYPES**	**DATE**
Paleo-Indian				9,500 - 5,500 BC
Archaic/Oshara	Early			5,500 - 3,200 BC
	Middle			3,200 - 1,800 BC
	Late Basketmaker III			1,800 BC - AD 600
Pueblo	Pueblo I	Early Developmental	Lino Gray, plain red and brown wares, San Marcial B/W,	AD 600/750 - 900
	Pueblo II	Middle Developmental	Red Mesa B/W, plain red and brown wares, plain corrugated	AD 900 - 1000/1150
	Pueblo III	Late Developmental	Red Mesa B/W, Kwahe'e B/W plain corrugated; last of the mineral paints	AD 1000 - 1200
	Pueblo III	Coalition	Santa Fe B/W, Galisteo B/W, smeared corrugated	AD 1200 -1325
	Pueblo IV	Classic	Wiyo B/W, Galisteo B/W, Biscuit A & B, Glaze A, B, C, D, early E	AD 1325 - 1600
Historic	Pueblo V	Historic	Glaze F (to 1700)	AD 1550/1600-1950

Table 1. Comparison of the Pecos Classification and the Wendorf and Reed Sequence for the Northern Rio Grande Valley and Galisteo Basin (adapted from Stewart 2013).

Wendorf and Reed (1955) described the entire period from AD 600 to 1200 as the Rio Grande Developmental Period (Cordell and Gumerman 2006; p.307-8), which includes the Galisteo Basin, with Galisteo Creek, a tributary of the Rio Grande. Prior to the Developmental Period, Paleo-Indian and Archaic, including Basketmaker, settlement in the Galisteo Basin was sparse (Cordell and Gumerman 2008; p. 304) and seasonal. The very limited site excavations in the Central and Northern Rio Grande watershed dating from AD 600 to about AD 900 show a variety of ceramic types including Lino Gray, red and brown wares, San Marcial Black-on-white, Kana'a Black-on-white, and plain graywares.

The earliest ceramics in the Galisteo Basin appear during the Middle Developmental period and consist of locally produced Lino Gray, a plain brownware, and plain corrugated cooking types. Red Mesa Black-on-red was traded into the Rio Grande area but was scarce in the Galisteo Basin (Cordell 1997). Kwahe'e, a mineral-painted black-on-white, was the dominant painted ceramic in Late Developmental into early Coalition Periods.

An increase in rainfall during the 1200s (Blinman, personal communication 2002) resulted in more permanent occupations that included shifts to more intensive agriculture, and aggregation in above-ground, arroyo-rim sites such as Burnt Corn (AD1290-1302 cutting dates). Population increased and formed multi-household pueblos. Permanent settlements in and near the Galisteo Basin appear to be earliest along Galisteo Creek and the Santa Fe River (Lang 1977). About AD 1200, carbon paint began to replace mineral paint in locally produced black-on-white ceramics. The first carbon paint type was Santa Fe Black-on-white, with a fine-grained paste, sand temper, and a thin, white interior slip. Slightly later (AD 1300-1400), Galisteo Black-on-white appeared, frequently with crushed sherd temper and highly polished organic paint.

There are several differences between Santa Fe Black-on-white and early Galisteo Black-on-white. Technological differences include the use of sherd temper and construction of thicker vessel walls in Galisteo Black-on-white. Santa Fe Black-on-white and Galisteo Black-on-white display different design elements: The panels of solid versus hachured triangles in Santa Fe change to banded designs outlined by framing lines. In Galisteo Black-on-white, rims are squared and ticked and vessel walls are thicker than in Santa Fe Black-on-white. As opposed to Santa Fe Black-on-white, Galisteo Black-on-white ceramics may have exterior designs. In late Galisteo Black-on-white, the slip is often heavily crackled (Franklin p.c. 2013). Cordell argues that the main difference between the two types is the appearance of white slip on exterior of Galisteo Black-on-white bowls. Santa Fe Black-on-white was produced over a wide area down to Los Lunas and up to the Tesuque Valley (Habicht-Mauche 1995:173; Warren 1976), while Galisteo Black-on-white appears in only a portion of this area (Franklin p.c. 2013; Habicht-Mauche 1995: figure 7.6, p. 181).

These two types overlap chronologically and appear to have been produced simultaneously by the same pueblos. They have been the subject of considerable debate. Some archaeologists characterize Galisteo Black-on-white as "virtually identical to Mesa Verde Black-on-white" (Cordell and Gumerman 2006; p. 317). Others argue it is a variant of Santa Fe Black-on-white made with local materials (Dean Wilson 2008). To complicate matters, some archaeologists argue the late Coalition Period was a time of great population movement throughout the Southwest, and that the diversity of black-on-white types reflects individual clans or households attempting to retain cultural identity among strangers (Habicht-Mauche 1986). Current thinking is moving toward the idea of both local ceramic evolution and substantial population movement and disruption in the 1300s as evidenced by the appearance of Galisteo Black-on-white in the northern part of the Santa Fe Black-on-white production area. The trend to Galisteo Black-on-white did not affect the middle Rio Grande basin near Albuquerque, which, instead, made a rapid transition to glaze paint (Hayward Franklin, personal communication, 2013).

Some, but not all, Late Developmental and Coalition Period sites developed into very large aggregated communities, sometimes multi-storied, surrounding central plazas with large circular, underground kivas

(Eckert and Cordell 2004). Late Developmental Period ceramics include the tail-end of mineral-painted Kwahe'e Black-on-White and trade ceramics from the west and south, such as Wingate Black-on-Red (Lang 1977), Chupadero Black-on-White, Cibola white wares, Tularosa Black-on-White, Tularosa Fillet Rim, along with St. Johns Black-on-red and Polychrome. Utility ware vessels were commonly plain corrugated, Indented Corrugated, and later, Smeared Corrugated. The Galisteo Basin pueblos of the later Classic Period (glazewares) also have carbon-paint, black-on-white ceramic components.

Wendorf and Reed's Classic Period (AD 1325-1600) coincides with Pueblo IV in the Pecos Classification. The development of glaze paint technology that marks the onset of Rio Grande glazeware production begins with the appearance of Agua Fria Glaze-on-red, a red-slipped, black lead-glaze paint ceramic. Rio Grande glazeware is thought to have developed from earlier glazewares in eastern Arizona around AD 1100-1200, which traveled eastward from the Little Colorado River pueblos through the Zuni area (Cordell 1997). St. Johns Polychrome, with lead-copper glaze paint, was traded eastward into Zuni (Plog 1980). The early glaze paint Heshotauthla Polychrome was traded into the Rio Grande area by AD 1275-1290 (Warren 1970). Glazewares spread throughout the northern Rio Grande watershed, including the Galisteo Basin, northward to an east-west line from approximately Bandelier National Monument on the west to about 40 km south of Santa Fe on the east. These ceramics utilized lead mined in the Cerrillos hills on the northwestern edge of the Galisteo Basin (Habicht-Mauche et al. 2000). By 1550, all decorated ceramics manufactured south of Espanola were glazewares.

H. P. Mera defined six distinct temporal and stylistic glazeware periods (1933) that span 400 years, from AD 1315 to 1700. In the Galisteo Basin, production of Galisteo Black-on-white, and to a lesser extent, Santa Fe Black-on-white, continued after the appearance of Glaze A. All glazewares generally demonstrate mostly similar geometric designs, commonly within a band below the rim of bowl interiors and the exterior shoulders of jars. Designs consisted of simple geometric lines, filled triangles, zigzags, pendant dots and slashes, hachuring, parallel lines, and checkerboards. Temper is crushed igneous rock and, to a lesser degree, sandstone, continuing throughout the glazeware sequence (except for some crushed sherds in Glaze A Cieneguilla Glaze Polychrome). Pastes fired to a dark core with red or yellow margins.

Production of the two late glazeware types, E and F, occurred during the period of the initial Spanish occupation of New Mexico. By the time of late Glaze E and Glaze F (AD 1700s), cups, canteens, plates, and eccentric shapes begin to appear for Spanish consumption. Because the technology and painted designs of glazewares remained constant through time, rim shapes are the only consistent method for the determination of typology, and thus chronology, for glazewares.

The earliest Galisteo Basin glazeware is Agua Fria Glaze-on-red (AD 1315-1425). Later in the Glaze A period, the yellow-slipped Cieneguilla Glaze-on-yellow predominated and potters added matte-red figures outlined in black to a variant, Cieneguilla Glaze Polychrome (AD 1315-1425). Glaze B (AD 1400-1450) is the Largo series of red, yellow and polychrome; with the exception of change in rim style, Largo Glazeware pottery has the same attributes as the Glaze A series. Glaze A Cieneguilla Polychrome (AD 1325-1425) added glaze-outlined matte-red figures to designs, and by Glaze C (AD 1425-1500), potters produced a true polychrome ceramic when they added matte-red painted figures outlined with black glaze paint to vessels slipped red, white, or cream/yellow. The final glazeware identified in any number at

Pueblo Largo is Espinosa Glaze Polychrome, the only Glaze C (AD 1425-1500) type. One Glaze D, San Lazaro Glazeware (AD 1470-1515), was tentatively identified solely by its rim configuration.

The Galisteo Basin, because of its proximity to lead sources in the Cerrillos Hills, became a major regional producer of glazewares. Pottery produced as a trade item became important economically for pueblos like San Marcos (Warren 1969). By AD 1425, glazeware production had become a village-wide activity rather than household-based (Motsinger 1992; Schleher 2010). By the mid-16th century, as the Galisteo Basin population declined, ceramic production appears to have devolved into a local production activity for local consumption among households.

The Pueblo Revolt of 1680 temporarily drove the Spanish out of New Mexico. The end of glazeware production coincided with the return of the Spanish in 1692. The Galisteo Basin pueblos were abandoned following the Revolt, and except for an unsuccessful attempt by Don Diego de Vargas to repopulate Galisteo Pueblo, the Galisteo Basin communities have remained unoccupied.

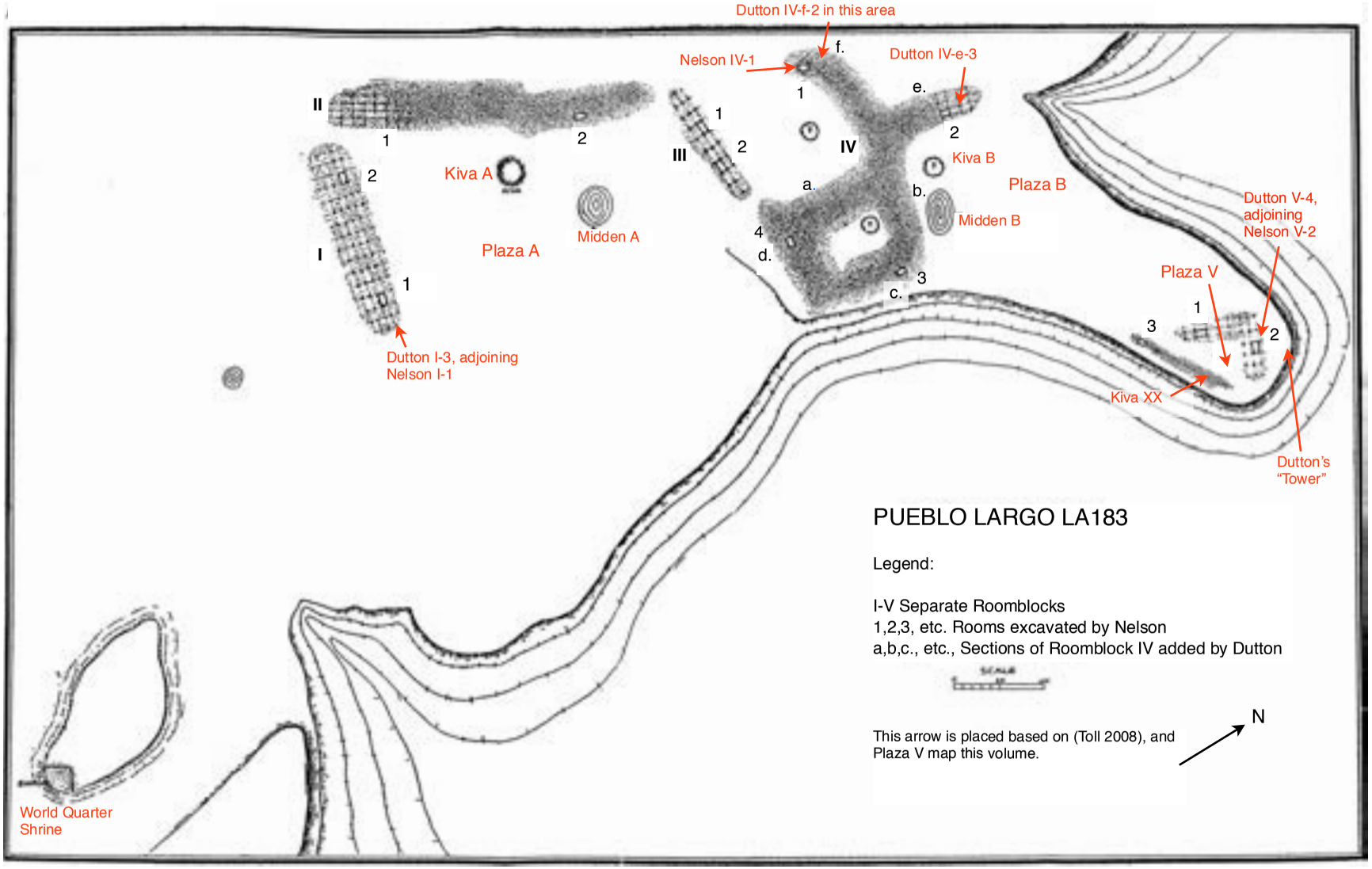


Figure 3. Map of Pueblo Largo LA183, Adapted from Nelson's original map of 1914, and Dutton 1980.

A WALKING TOUR OF PUEBLO LARGO with Nels Nelson and Bertha Dutton

Orienting the reader to Pueblo Largo is crucial for several reasons. First, the north arrow on Nelson's site map that was published by the American Museum of Natural History is misaligned. It points northeast, rather than north. Toll and Badner's recent map of the site shows the correct alignment of north (2008:71). An orientation is also helpful because Nelson's architectural terminology (buildings and community houses), influenced by Lewis Henry Morgan's groundbreaking work on vernacular architecture and the social meaning of domestic space (1881), needs to be updated for modern readers. What we call the various architectural features is a composite of Nelson's early mapping, Dutton's amendments to Nelson's map, and some updates we have added to clarify the Largo architectural taxonomy (Figure 3).

Nelson called the clusters of rooms across the site buildings or community houses[1]; today archaeologists identify these large, multi-room structures as roomblocks, or if they are very large, pueblos. In the southwestern sector of Largo, Nelson's buildings I, II and III are relatively straight alignments of contiguous rooms that are several rooms deep. In this report, we will be referring to these buildings, as Roomblocks I, II, and III. Northeast of these roomblocks is Roomblock IV, located in the approximate center of the site's architecture; a massive block that contains three plazas, each with a kiva, and alignments of rooms that branch to the north and west. Nelson's Building IV will be referred to as Roomblock IV.

Nelson did not identify plazas on his site Largo map; only buildings, middens, and the kiva associated with roomblocks I, III, and III. Dutton added labels to important features that we have adopted. Like Dutton, we will refer to the open area that is bounded by Roomblock I to the south, Roomblock II to the west, and Roomblock III to the north as Plaza A. Nelson identified the midden in this area as Midden A. We will follow Dutton's example and refer to Nelson's unnamed kiva in this plaza as Kiva A. The north-

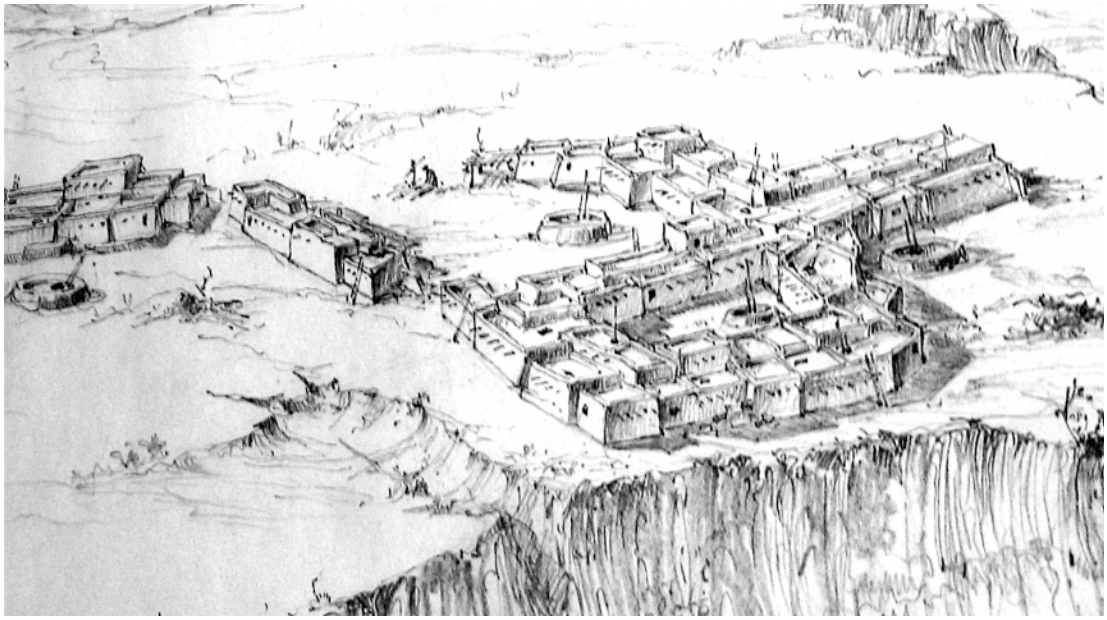


Figure 4. Conceptual view of Roomblock IV; the square cluster of rooms at right with wings E and F at top right. Drawing attributed to Alice Wesche, ca. 1956, (Bertha Dutton collection, MIAC/LOA, no catalog #)

trending and northwest-trending sections of Roomblock IV that Nelson called “wings” (1914:69) were later given letter designations by Dutton. The northwest-trending wing is called Dutton’s “e” wing and the northern-trending wing is Dutton’s “f” wing[2]. Between Roomblocks IV and V is a large, sloped open area that contains Nelson’s Midden B and a kiva that Dutton labeled Kiva B. For consistency, we refer to the area that contains the kiva and the midden as Plaza B.

The earliest component of the site, located on a promontory northeast of Roomblock IV, is Nelson’s community house or building V. Although it is the smallest of the architectural blocks, Nelson had difficulty describing it. In his general description of Largo, he states the site was comprised of “six separate community houses” (1914:69) although the numbering on his map only goes through five. The sixth community house or building is probably associated with building V, since Nelson noted that V is “really two separate structures” (1914:69). Our reconstruction of this area, based on the Girl Scout’s field notes and sketch maps, has a triangular plaza enclosed by rows of rooms, in some cases three-rooms deep, that are oriented to the northwest, the northeast, and the southeast. Like Dutton, we call this enclosed area Plaza V because neither Nelson nor Dutton identified a plaza kiva or a midden here. We call the room alignments roomblocks, similar to those Nelson identified around Plaza A. Instead of giving them numbers, as Nelson did for Plaza A, we identify them by their placement in the triangle. Thus, there are south, north, and southwest-trending roomblocks associated with Plaza V.

There are elevation changes and plaza square footage to keep in mind. For the roomblocks surrounding the triangular shaped Plaza V, Nelson's room 2 at the north end of the promontory is approximately 3-4 meters above Plaza V. This plaza is actually quite small as plazas go, measuring approximately 1900 square meters. All three steep sides of the Plaza V roomblocks on the promontory are approximately 50 meters above Escavada Wash, + or - 10 meters.

Figure 5. Elevation relationship from the light colored Escavada Wash at left edge of photo and the high point of Roomblock V at left center. At far right edge is the high point of Roomblock IV. Author’s photo, 2010, looking east from near Dutton’s Room IV-e-3.

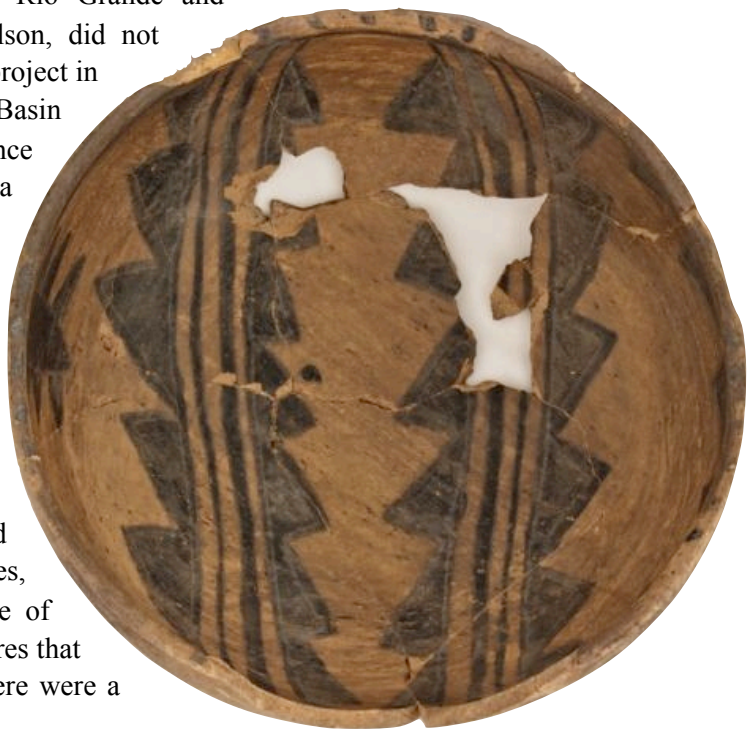
Notes:

1. Nelson is using this term as Morgan used it when describing ethnographically known and prehistoric structures that housed several families. Morgan wrote, “Several families, related by kin, united as a rule in a common household and made a common stock of the provisions acquired by fishing and hunting, and by the cultivation of maize and plants. They erected joint tenement houses large enough to accommodate several families” (1881:63).

2. A 2007 unpublished map that is a revised version of Nelson’s original map of Largo compiled by James Snead locates these wings in Roomblock IV and uses Dutton’s labels. A copy of the map is in the possession of the authors.

CERAMICS OF PUEBLO LARGO

We have two lines of evidence available for dating the occupation of Pueblo largo. Ceramic cross-dating provides rough estimates of the occupational history of the site, while tree-ring dates offer a more detailed and refined picture of the site's chronology, particularly its early years during the second half of the 13th century. By Dutton's time, H.P. Mera and others had established through stratigraphy, a chronological typology for ceramics of the Northern Rio Grande and Galisteo Basin, as discussed above. Nelson, did not have that luxury, although his 1912-1914 project in the Tano District including the Galisteo Basin was to use stratigraphy to develop a sequence of ceramic types that would provide a relative dating method for archaeological sites. Because the questions Dutton sought to answer concerned the migration of people into the Galisteo Basin from the Mesa Verde region at the end of the 13th century, she focused on the Plaza V area where the black-on-white ceramic types, primarily Galisteo Black-on-white, are found. Stratified ceramics can be helpful for dating structures, roomblocks, and rooms, and, in the case of Pueblo Largo, especially so for the structures that surround Plaza IV and Kiva A, where there were a very limited number of excavations.



Pueblo Largo can be roughly divided into three somewhat distinct areas or sectors, each of which is distinguished by different ceramic types. We analyzed a total of 25,372 sherds from 21 structures/areas in Roomblock V, one room in each of Roomblock I and IV, a near-great kiva in Plaza A (21.9 feet), a great kiva (29.86 feet), a midden trench in Plaza B, and one structure Dr. Dutton called a tower, just outside Roomblock V. We analyzed all the sherds found in the collection from all structures and areas with the exception of some of the sherds from Trench B, which was dug through Midden B. There, we sampled excavation squares which roughly amounted to 25% of the squares dug by the Girl Scouts. We are confident that the sherds we analyzed from the trench fairly represent the total assemblage from Midden B. We also make reference to sherds mentioned by Dutton in subsequent articles but not currently found in the collection. H.P. Mera did a surface collection at Pueblo largo, collecting 194 sherds from unknown locations. Of these, 63.3% were Glaze A and B, 27% Black-on-white, and 5.6% each utility and indeterminate. Nelson's excavations were before typology was established for Rio Grande ceramics, and are thus not included. Of the 25,372 sherds we analyzed, 12,831 were datable, including 6,427 Smeared Corrugated with a general starting date of AD 1250-1300. Without the Smeared Corrugated, there are 6,404 datable sherds.

Figure 6. Pueblo Largo, Biscuit B bowl from Plaza V north area "Tower." (ARC/MIAC/LOA Cat. # 32010/11)

Table 2. Datable Ceramics with Counts, Weights, and Time Period

Note: The full count of all ceramic types and weights is listed later in this chapter.

Ceramic Type	Count	Weight (grams)	Beginning	End Year
Agua Fria Glaze-on-red	888	4863	AD1315	1425
Biscuit A	401	4039	1375	1450
Biscuit B	56	476	1400	1500
Cieneguilla Glaze Polychrome	199	1731	1325	1425
Cieneguilla Glaze-on-yellow	2130	13636	1325	1425
Chupadero Black-on-white	21	165	1150	1550
Cordova Micaceous Ribbed	8	69	1300	1400
Cundiyo Micaceous Smeared Indented	12	63	1300	1400
Espinoso Glaze Polychrome	65	1143	1425	1500
Galisteo Black-on-white	1383	11970	1300	1400
Indeterminate Cibola White Ware	15	205	1150	1300
Indeterminate Glaze A	10	66	1315	1425
Indeterminate Glaze B	1	19	1400	1450
Kwahe'e Black-on-white	2	69	1050	1250
Largo Glaze Polychrome	18	195	1400	1450
Largo Glaze-on-red	3	20	1400	1450
Largo Glaze-on-yellow	214	1668	1400	1450
Los Padillas Polychrome	4	25	1175	1300
Micaceous Tempered	171	1257	1350	1450
Plain Corrugated	76	534	950	1300
Rowe Black-on-white	67	2296	1300	1425
San Clemente Glaze Polychrome	59	326	1315	1425
Sanchez Glaze Polychrome	2	10	1350	1425
Sanchez Glaze-on-red	2	12	1350	1425
Sanchez Glaze-on-yellow	4	25	1350	1425
San Lazaro Polychrome	1	4	1470	1515
Santa Fe Black-on-white	365	2946	1200	1350
Sapawe Micaceous Ribbed	13	76	1425	1600
Smeared Corrugated	6427	35091	1250	1500
St Johns Black-on-red	5	38	1150	1300
St Johns Polychrome	2	8	1150	1300
Wiyo Black-on-white	207	1409	1300	1400
Totals Sherds	12831			
Grams		84454		
Total without Smeared Corrugated	6404	49363		

Plaza V area ceramics

The Plaza V area is the oldest sector of the pueblo, where the majority of the carbon-paint, black-on-white ceramics (50% of the plaza's datable ceramic types) are found. As will be shown below, Roomblock V was built and occupied between AD 1260 and probably 1330, and represented the only portion of the pueblo occupied until Roomblocks I, II, III, and IV were began around AD 1400. With the exception of three 14th century tree-ring dates, the massive Roomblock IV dates to the first half of the 15th century. This is the area where Glaze A predominates (84% of Roomblock IV datable ceramic types). The Midden B ceramics can be considered a proxy for the ceramics of Roomblock IV.

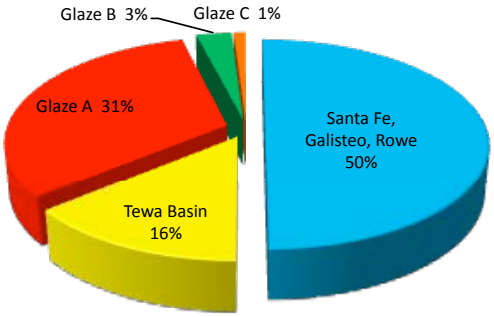


Figure 7, Table 3. Datable Ceramic Types in Roomblocks around Plaza V; Local Black-on-white (Santa Fe, Galisteo, and Rowe B/w), Glazewares, and Non-local Tewa-Basin Ceramics. Not Shown, Glaze C (<0.01)

Note: Tewa Basin ceramic category includes Biscuit A and B, indeterminate biscuit, Wiyo Black-on-white, micaceous tempered, Cordova Micaceous Ribbed, Cundiyo Micaceous Smeared Indented, and Sapawe Micaceous Ribbed.

Plaza V Datable Ceramics	Sherd Count	Weight (grams)
Agua Fria Glaze-on-red (Glaze A)	307	2,715
Biscuit A (Abiquii Black-on-gray)	196	2,621
Biscuit B (Bandelier Black-on-gray)	20	217
Chupadero Black-on-white	21	165
Micaceous tempered	163	1,211
Cordova Micaceous Ribbed	8	69
Cundiyo Micaceous Smeared Indented	5	33
Cieneguilla Glaze Polychrome (Glaze A)	23	352
Cieneguilla Glaze-on-yellow (Glaze A)	729	7,854
Espinoza Glaze Polychrome (Glaze C)	7	30
Galisteo Black-on-white	1,312	11,502
Indeterminate Glaze A (Glaze A)	4	34
Indeterminate Glaze B (Glaze B)	1	19
Largo Glaze Polychrome (Glaze B)	6	111
Largo Glaze-on-red (Glaze B)	3	20
Largo Glaze-on-yellow (Glaze B)	90	909
Los Padillas Polychrome	4	25
Rowe Black-on-white	66	2,286
Sapawe Micaceous Ribbed	8	58
San Clemente Glaze Polychrome (Glaze A)	11	85
Sanchez Glaze Polychrome	2	10
San Lazaro Glaze Polychrome	1	4
Santa Fe Black-on-white	350	2,833
St. Johns Black-on-red	5	38
St. Johns Polychrome	1	6
Wiyo Black-on-white (156,174,1143)	178	1,179
	3,521	34,386

Roomblock IV and Midden B ceramics

The proportions of various datable ceramic types from the Roomblock IV and Midden B contrast sharply with the ceramics from the Plaza V area. This highlights the temporal difference between these two sectors of the site. The midden ceramics are types with inception dates in the 14th and early 15th centuries. With the exception of three 14th century tree-ring dates, the massive Roomblock IV dates to the first half of the 15th century. This is the area where Glaze A predominates. Midden B ceramics can be considered a proxy for the ceramics of Roomblock IV.

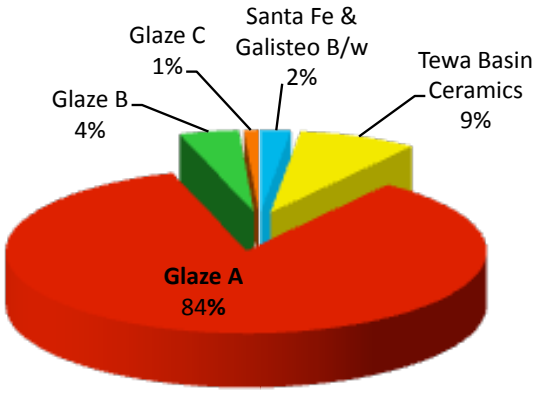


Figure 8, Table 4, Roomblock IV: Proportions of non-local Tewa Basin ceramics, local black-on-white (Santa Fe and Galisteo Black-on-white), and Glazewares.

Roomblock IV Datable Ceramics	Sherd Count	Weight (grams)
Agua Fria Glaze-on-red (Glaze A)	536	1864
Biscuit A (Abiquii Black-on-gray)	183	1149
Biscuit B (Bandelier Black-on-gray)	22	123
Biscuit Indeterminate	2	5
Micaceous tempered	6	23
Cundiyo Micaceous Smeared Indented	7	30
Cieneguilla Glaze Polychrome (Glaze A)	159	726
Cieneguilla Glaze-on-yellow (Glaze A)	1340	5298
Espinoza Glaze Polychrome (Glaze C)	15	96
Galisteo Black-on-white	35	151
Largo Glaze Polychrome (Glaze B)	9	34
Largo Glaze-on-yellow (Glaze B)	84	423
Sapawe Micaceous Ribbed	5	17
San Clemente Glaze Polychrome (Glaze A)	38	190
Santa Fe Black-on-white	2	8
Wiyo Black-on-white	5	36
Sanchez Glaze-on-yellow	4	28
	2452	10201

The Santa Fe Black-on-white (AD 1200-1350) that was present around Plaza V is almost completely absent from Roomblock IV, Kiva B, and Midden B. Santa Fe and Galisteo Black-on-white (1300-1400) represents only 2% of the datable ceramic types. In contrast, black-on-white types; Rowe, Santa Fe, and Galisteo, comprised 50% of the datable ceramic types in the Plaza V roomblocks. Another change, which may represent shifts in the social networks of the Tewa Basin and Pueblo Largo, is the decline in the proportion of Tewa Basin ceramics from 16 % to 9%. Glaze A (1315/1325 to 1425) at 84% swamps all other ceramic types from Roomblock IV and the midden, and marks the technological and aesthetic shift from carbon-paint to glaze-paint pottery that began in the Galisteo Basin in the second decade of the 14th century, as the occupation of the Plaza V area appears to have been winding down. The proportion of Glaze A ceramics around Plaza V is 33%, while 88% of the datable types from Roomblock IV and the midden are Glaze A and B.

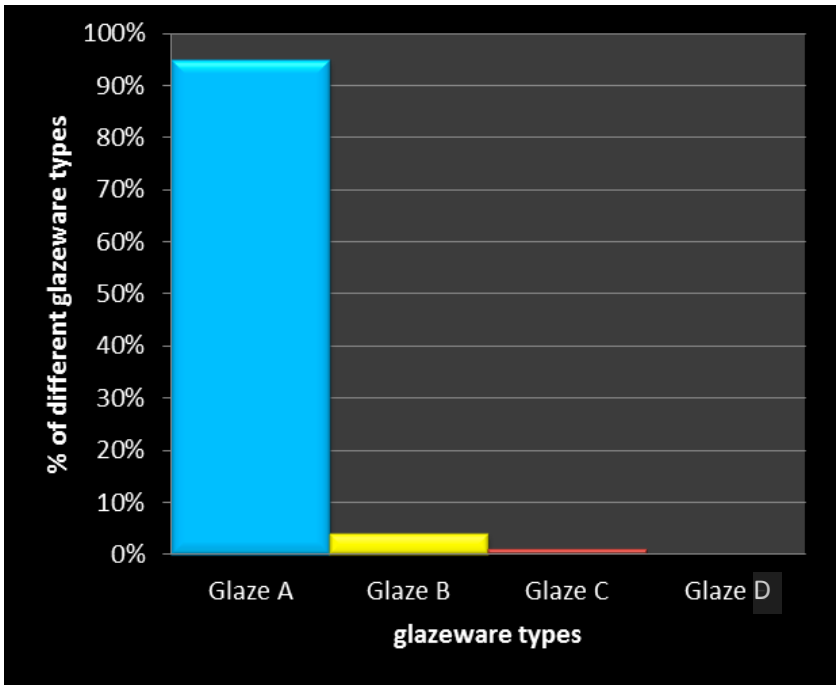


Figure 9. Proportions of glazeware types from Roomblock IV and Plaza IV

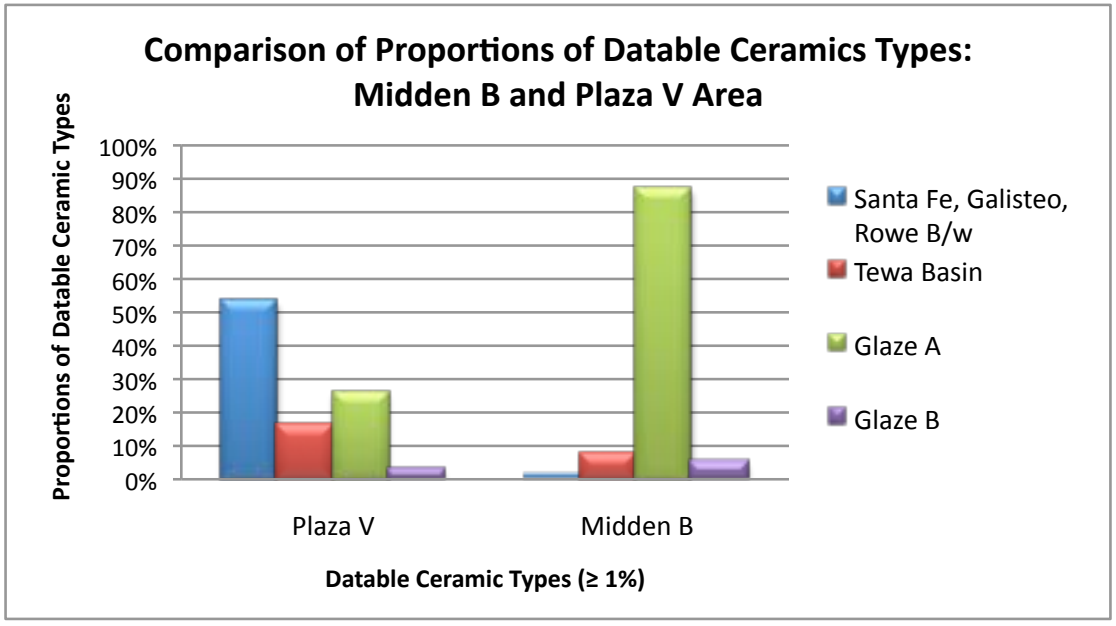


Figure 10. Comparison of Proportions of Datable Ceramic Types Midden B and Plaza V Area

Plaza A and Kiva A area ceramics

Plaza A and Kiva A, surrounded by Roomblocks I, II, and III, produced only two tree-ring dates (both 1431r), and they fit with the chronology of Roomblock IV. On the other hand, the ceramic assemblage of Plaza A has the highest proportion of glazes B and C (22% and 31% respectively of the datable ceramic types), suggesting that the southernmost portion of the pueblo was occupied for decades beyond the AD 1431 tree-ring date, somewhat later than Roomblock IV.

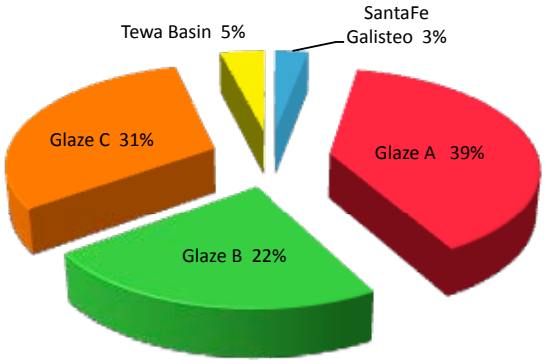


Figure 11, Table 5. Proportions of Datable Ceramic Types from Kiva A area; glaze wares, Tewa Basin ceramics, and local black-on-white types

Plaza A Dateable Ceramics		
Datable Ceramic Types	Sherd Count	Weight (grams)
Agua Fria Glaze-on-red (Glaze A)	17	72
Biscuit A (Abiquii Black-on-gray)	2	26
Biscuit B (Bandelier Black-on-gray)	2	8
Biscuit Indeterminate	1	4
Cieneguilla Glaze Polychrome (Glaze A)	4	19
Cieneguilla Glaze-on-yellow (Glaze A)	21	139
Espinoza Glaze Polychrome (Glaze C)	41	1,014
Galisteo Black-on-white	1	13
Largo Glaze Polychrome (Glaze B)	1	15
Largo Glaze-on-yellow (Glaze B)	28	233
San Clemente Glaze Poly (Glaze A)	9	37
Santa Fe Black-on-white	2	11
Washboard Corrugated	2	11
	131	1,602

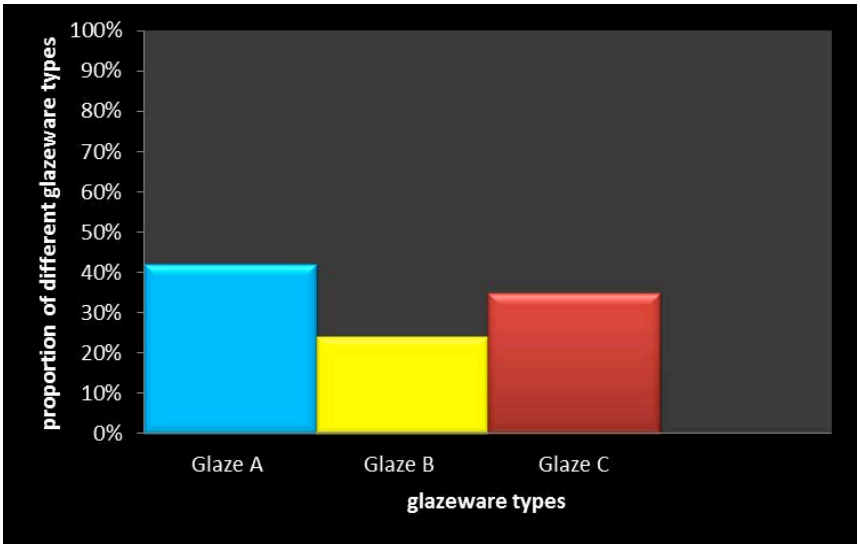


Figure 12. Proportions of glazeware types from Plaza A

Table 6. All Pueblo Largo Ceramic Types

Ceramic Type	Count	Weight (grams)
Agua Fria Glaze-on-red	888	4863
Biscuit A	401	4039
Biscuit B	56	476
Chupadero Black-on-white	21	165
Cibola Whiteware	15	205
Cieneguilla Glaze Polychrome	199	1731
Cieneguilla Glaze-on-yellow	2130	13636
Clapboard Corrugated	39	405
Cordova Micaceous Ribbed	8	69
Cream Slipped, unpainted	741	3367
Cundiyo Micaceous Smeared Indented	12	63
Espinoso Glaze Polychrome	65	1143
Galisteo Black-on-white	1383	11970
Indented Corrugated	1306	10715
Indeterminate Biscuit Ware	12	54
Indeterminate Black-on-red	12	27
Indeterminate Black-on-white	308	2849
Indeterminate Corrugated	81	574
Indeterminate Glaze A	10	66
Indeterminate Glaze B	1	19
Indeterminate Glaze Polychrome	343	2472
Indeterminate Glaze Ware	3731	18561
Indeterminate Plainware	457	1950
Indeterminate Red and White slipped	20	158
Indeterminate Polychrome	130	707
Indeterminate Slipped, unpainted	780	5049
Los Lunas Smudged	1	11
Kwahe'e Black-on-white	2	69
Largo Glaze Polychrome	18	195
Largo Glaze-on-red	3	20
Largo Glaze-on-yellow	214	1668
Los Padillas Polychrome	4	25
Micaceous Tempered	171	1257
Patterned Corrugated	1	8
Plain Corrugated	76	534
Plain Red or Grayware	572	4164

Ceramic Type, continued	Count	Weight (grams)
Rowe Black-on-white	67	2296
San Clemente Glaze Polychrome	59	326
Sanchez Glaze Polychrome	2	10
Sanchez Glaze-on-red	2	12
Sanchez Glaze-on-yellow	4	25
San Lazaro Polychrome	1	4
Santa Fe Black-on-white	365	2946
Sapawe Micaceous Ribbed	13	76
White, Red, Yellow slipped, unpainted	3974	16659
Smeared Corrugated	6458	35963
St Johns Black-on-red	5	38
St Johns Polychrome	2	8
Washboard Corrugated	2	11
Wiyo Black-on-white	207	1409
Total sherds	25372	
Total weight		152,998

Table 7. Comparison of Glazeware Ceramics versus Black-on-white by Structure

Structure	Glazewares (n)	%	Black-on-white(n)	%
Plaza V - South Roomblock, eastern section				
Kiva XX	495	45.1%	603	54.9%
V-5	173	36.4%	303	63.6%
V-11	738	78.1%	207	21.9%
V-16	174	63.3%	101	36.7%
V-20	30	28.3%	76	71.7%
V-21	81	53.6%	70	46.4%
Plaza V - South Roomblock, western section				
V-13	263	55.3%	213	44.7%
V-14	35	35.7%	63	64.3%
V-17	68	89.5%	8	10.5%
V-19	305	90.8%	31	9.2%
V-24	56	80.0%	14	20.0%
V-25	70	80.5%	17	19.5%
Plaza V - West Roomblock				
V-10	151	68.9%	68	31.1%
V-12	35	20.2%	138	79.8%
V-18	37	14.9%	212	85.1%
Plaza V - North Roomblock				
Tower	6	2.4%	242	97.6%
V-4	30	44.8%	37	55.2%
V-6	29	87.9%	4	12.1%
V-7	17	89.5%	2	10.5%
V-8	50	25.8%	144	74.2%
V-9	3	--	4	--
Roomblock I, Kiva A				
I-3	49	98.0%	1	2.0%
Kiva A	351	97.7%	8	2.3%
Roomblock IV, Kiva B, Midden B				
IV-f-2	47	85.5%	8	14.5%
Kiva B	1046	91.3%	100	8.7%
Midden B	3181	94.1%	198	5.9%

Note: This table includes indeterminate (undatable) glazeware and indeterminate (undatable) black-on-white sherds, so the counts differ from datable sherd counts. The percentages also do not include non-glazeware or non-black-on-white.

Overall, the ceramic mix is what would be expected for a multi-component Galisteo Basin site. The vast majority of the collection consists of Santa Fe Black-on-white, Galisteo Black-on-white, Glaze I, some Glaze II and a few Glaze III, some Biscuit A and B, and substantial amounts of smeared corrugated, which dominates utility wares after about AD 1300. Utility wares numbered 35.9% of the assemblage, Glazewares 30.2%, Black-on-whites 11.2%, and trade wares 3.8%. The remaining 22.7% represented indeterminate types.

Non-local or trade ceramics analyzed included Tularosa Black-on-white (AD 1175 to AD 1300), Tularosa Fillet Rim (AD 1100 to AD 1300), sherds we classified as Cibola Whiteware, and later described as perhaps a combination of Chupadero Black-on-white (AD 1150 to AD 1550) and maybe Snowflake, or so called Mogasazi (Dean Wilson, personal communicaton), Los Lunas Smudged (AD 1200 to AD 1350?), and St. John's Red-on-black (AD 1150 to AD 1300). All are indigenous to West-Central New Mexico/ East-Central Arizona except for Chupadero Black-on-white and Los Lunas Smudged, which are indigenous to the Rio Puerco and Rio Grande Valley south of Albuquerque. Biscuit A and B are found generally immediately north of Santa Fe, although it is common to find Biscuit ware in sites south of Santa Fe, presumably as trade goods with close neighbors.

The sixty-two Tularosa sherds were eliminated from the total sherd count as probably not from Pueblo Largo. These sherds refit into several partial Tularosa Fillet Rim bowls and 4 large Tularosa Black-on-white jar sherds are in the LOA Largo ceramic collection. Dean Wilson and Leslie Cohen typed the sherds. We have chosen not to include them in our analysis because the provenance of these samples is problematic. In contrast to the rest of the assemblage, there are no data on the field bags and the sherds lack catalogue numbers. Furthermore, the discovery of these obvious non-local types is not mentioned in the field notes we have reviewed. Thus early trade wares represent only 6% of all trade wares, with later Tewa types from the contiguous Tewa cultural and language area just to the north amounting to 94% of all trade wares.

Ceramic level provenience proved immaterial as actual levels excavated were of variable widths. For instance, Room V-5 had average remaining wall heights and fill of about one meter, from which the Girl Scouts recorded 12 levels of ceramics. Thus, on paper, the levels averaged 9 cm each. Dutton commented in a letter to Lyn Hargrave dated 27 September, 1960, (LOA) that "insofar as possible, levels were moderate shovel removals, thus about five to six inches each. In Kiva A, the fill was almost like cement, and so every bit of it had to be picked, and for that reason, the levels were not so deep – more likely an average of three inches." Some sherds have level provenience and some sherds do not. Some levels are missing while lower levels were found. Some plastic bags had one level on the bag and a different level marked on each sherd. In these cases, we used the sherd provenience rather than the bag provenience. In some structures, the oldest ceramics were found in the upper layers and newest found on lower layers. This reversal could have resulted from excavation of a nearby structure in antiquity with its fill and ceramics deposited in the subject structure, which is likely an example of room re-use later in the pueblo's life.

For the six years of excavations, the written record of analysis and findings is almost non-existent. It is well known that Dr. Dutton was interested in excavating sites in the Galisteo Basin which could possibly have evidence of migration or diffusion of peoples from the depopulation of Mesa Verde in the late 1200s. Perhaps, not finding such evidence at Pueblo Largo, in particular no Mesa Verde ceramic types, she did

not complete the analysis or findings. But, this conclusion would not have been known at the end of the first year or two of excavation, a time when analysis should have taken place, and no such analysis reports were found. Dutton later commented that she was finding little time to work on the Pueblo Largo collection due to her ongoing responsibilities as Curator of Ethnology and as an archaeological associate at the School of American Research, which later became the Laboratory of Anthropology. She commented in an unpublished manuscript; “For the most part, my study of the archaeological materials recovered was possible during only such periods of time when more pressing museum duties permitted, a few days or weeks now or then.” (“Prehistoric Peoples in the Galisteo Basin,” LOA; unprocessed mss; Dutton. ca. 1961).

Everything considered, the Girl Scouts moved a huge amount of fill, enthusiastically, and with intelligent and logical intent, despite periods of limited instruction and supervision, and the large collection has held together reasonably intact for fifty plus years. However, the lack of any written analysis and conclusions by Dr. Dutton is disappointing.

A Sampling of Ceramics of Pueblo Largo

Figure 13. Pueblo Largo ceramics in the MIAC/LOA collection. *Note:* image sizes are not shown relative to each other.

Top to bottom, left to right: Effigy LOA 32030/11, B1-5, level A; effigy LOA 32031/11, area xy, level 1; effigy LOA 32032/11, B1-8, level E; Cibola Black-on-white jar, Room V-5, level 2; Glaze painted utilityware jar, sherd 192, Kiva XX, level C; Espinosa Glaze Polychrome jar LOA 32006/11 (Room V-5-level 2); Animal head handle LOA ; Biscuit bowl, LOA 25311/11Room V-13.; Biscuit B bowl, LOA 32005/11 (Room I-3)

TREE RING DATES FROM PUEBLO LARGO

The second line of evidence for dating the occupation of Pueblo Largo is tree ring dates from samples taken from Pueblo Largo and compared with the tree-ring data base at the Laboratory of Tree-Ring Research (LTRR) at the University of Arizona in Tucson. “Although there are many dated samples from Pueblo Largo, very few of these are cutting dates and the sample must still be considered small relative to the great size of this site” (Robinson 1973). In actuality, the number of cutting dates from Pueblo Largo is far larger than for any other Galisteo Basin site, with the exception of Arroyo Hondo on the northern edge of the Basin and not actually within the Rio Galisteo watershed. Robinson sourced his samples from Nelson in 1912, Dutton in 1952 through 1956, and from specimens collected by W. S. Stallings Jr. of the Laboratory of Anthropology in 1931 and 1933. There have been over 1,000 wood samples from Pueblo Largo examined by the LTRR, and 410 tree ring samples produced a date of which 117 are cutting and near-cutting dates, including 35 labeled v, which we have labeled “near-cutting dates." As many of these samples are “complete charred fragment” or “charcoal fragment”, some of these samples are duplicates from the same tree.

Of the 410 tree ring samples, 117 represent cutting dates or “near cutting dates.” By “cutting dates” we mean those having the LTRR’s symbol of p (pith ring present), B (the best, but rare; bark present), G (beetle galleries present, thus indicating that the surface is present, L (bark has been stripped, but outer ring present), C (outer ring continuous), and r (part of the outer ring present). The designation “v” represents “A subjective judgment that, although there is no direct evidence of the true outside of the specimen, the date is within a very few years of being the cutting date.” We consider those with designations of “v” to be “near cutting dates.” The remaining 293 samples were identified by LTRR as a “vv” date indicating that “there is no way of estimating how far the last existing ring is from the true outside ring.” Where the LTRR has also included a “+” or “++” sign, the specimen does not extend far enough to show a cutting date or “…the outside is so congested as to be unreadable… Consequently the + can indicate that the true date of the outside ring on the specimen may be as much as five years later (sometimes more, but I don’t think so on these pieces.” (Bryant Bannister; Letter to Dutton; January 8, 1959. LOA archives.) In the table below, we include tree-rings as “cutting dates” when they have a +B or ++B, the best of all the designations, or +r. We also include dates with a “v” but not a “+v” as “near-cutting dates.”

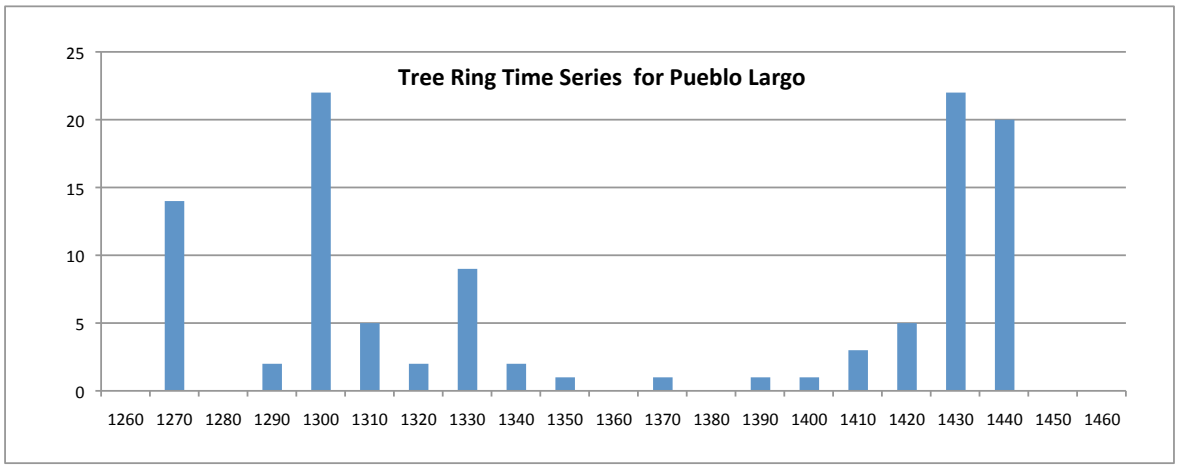


Figure 14. Cutting and near-cutting tree ring time series for Pueblo Largo.
Data is shown in 10-year periods ending with the date shown.

The range of dates represented in this collection indicates occupation of Pueblo Largo beginning about the mid-13th century and continuing into the middle and possibly late 15th century. Of the 117 meaningful dates, 65 are from the Plaza V area, the oldest area of the Pueblo, where Dutton excavated at least 22 structures or areas. She was most interested in finding archaeological evidence of Mesa Verdean migrants and concentrated on the area where the oldest ceramics were evident. Thus the tree-ring sample is unevenly distributed across the site. The data place initial construction of the Pueblo on the Plaza V promontory from between 1260 and 1330. The earliest date is AD 1230 from Plaza V's Kiva XX. Room V-21, adjacent to Kiva XX, produced the next earliest dates of 1243 and 1245. The latest cutting date is 1439, from an unknown location somewhere north of Nelson's Room 1 in Roomblock I, but there are two later non-cutting dates; 1452++vv and 1459vv. Of the 52 available cutting and near-cutting tree ring dates for the other portions of the pueblo, all but two from Nelson's Room IV-1, or the area north of that room, suggest that a second occupation may have commenced around 1415 and ended by perhaps 1460. Because Roomblocks I, II, III, and much of IV received so little attention from Dutton and Nelson, the 1439 tree-ring date may not represent the pueblo's last construction or repair episode before the inhabitants left the village. There is a notable absence of cutting dates in the mid-14th century.

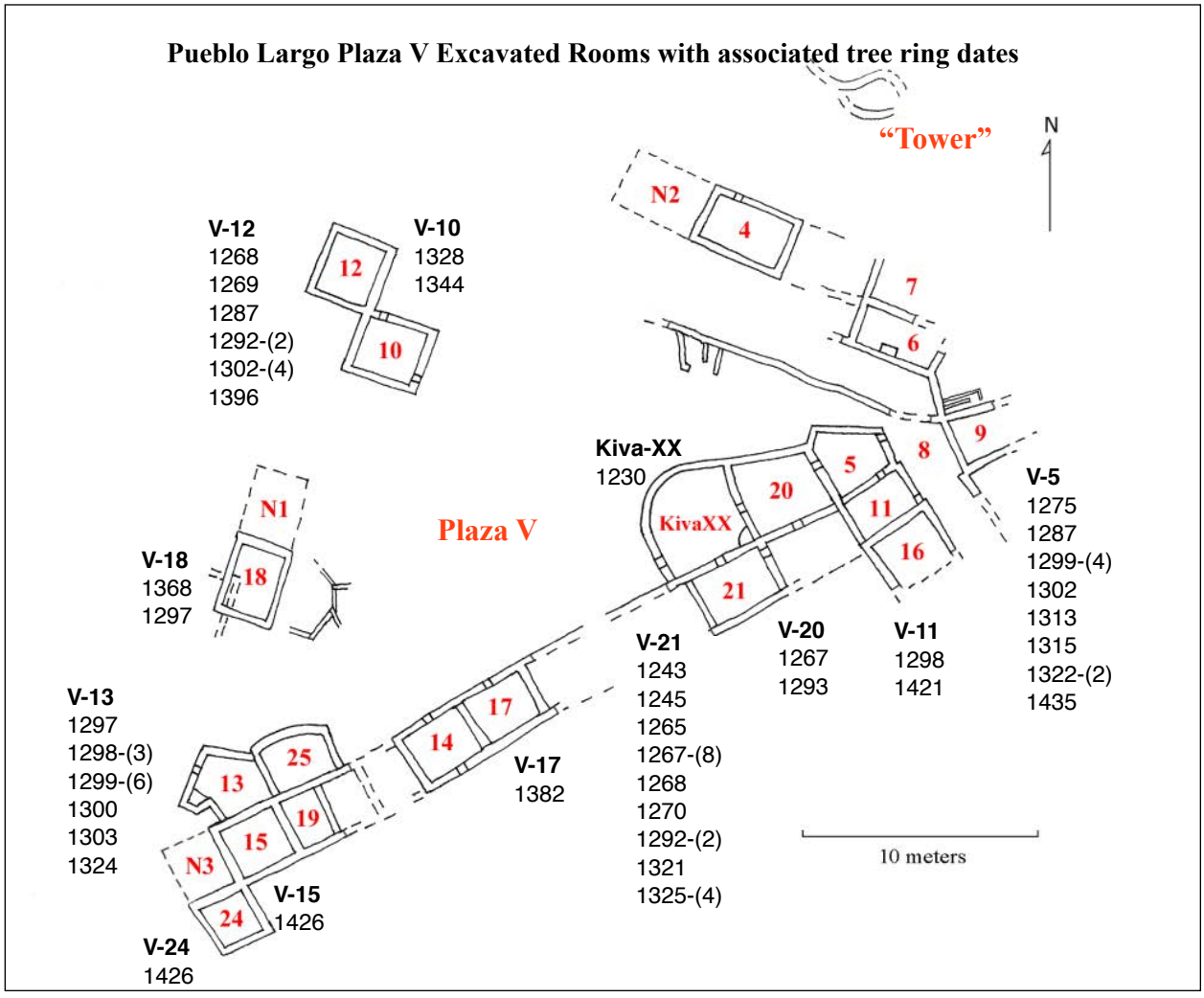


Figure 15. Plaza V excavated rooms with associated cutting and near-cutting dates. Tree-ring data from Robinson, Harrill, Warren (1973), and from records at the Laboratory of Tree Ring Research, Tucson.
Numbers in parenthesis indicate multiples of same date, from different specimens.

Roomblock V probably contains 50-60 ground-floor structures, of which three were excavated by Nelson and 20 were excavated by Dutton. There are 65 cutting or near cutting dates. Three are before AD 1250 (1230, 1243, and 1245). Fourteen are between AD 1265 and 1275. Twenty-one are between AD 1287 and 1302. Fifteen are between AD 1313 and 1328. There are none between AD 1328 and 1368, three between AD 1368 and 1396, and three more dated AD 1426 (2) and 1435. These later dates all appear to be modifications to early rooms, except for the lone AD 1426 date from room V-24 .

In Roomblock IV, Dutton's rooms IV-e-3 and IV-f-2 produced cutting dates of AD 1407, 1425, 1427, and 1435, and near-cutting "v" dates of AD 1317, 1340, 1414, and 1422. Nelson's thirty-four cutting and eight "v" dates produced one AD 1412 and one AD 1414, while all other of Nelson's dates were between AD 1426 and 1439. These dates indicate that Roomblock IV construction probably dates in its entirety to about AD 1420 to AD 1435. Interestingly, of the 132 total tree ring dates for Roomblock IV and the area North of Room 1, Building IV, only two dates are later than AD 1439; those being AD 1442++vv and AD 1459vv. Although the sample of locations is small, the lack of subsequent repair indicated by such close clumping of cutting dates possibly indicates that the roomblock was not occupied for more than 20-30 years. The latest date, AD 1459vv, mentioned above, is from the area north of Room IV-1. Ceramics confirm the late date for Roomblock IV.

Ceramic cross-dating of the Midden B and Kiva B assemblages and the proximity of the kiva and the midden to the plaza-oriented section of the Roomblock IV suggest the people who lived in this roomblock utilized the area north of the plaza-oriented portion of the roomblock to dump their trash and participate in integrative ceremonies in Kiva B. The majority of the cutting dates from adjacent areas date to the first half of the 15th century, although a few dates hint at an earlier occupation or reuse of wood from other areas of the pueblo; namely Roomblock V. The midden and the kiva probably date to this same period. The datable ceramics support an occupation that might span the late 14th and early 15th centuries. However, data for Kiva B, including whether the kiva was roofed, are incomplete because the excavators did not reach the floor, where roof fall may be located. The last area of Pueblo Largo, Roomblock I, II, and III and Kiva A produced only two cutting dates of AD 1431, both from Kiva A.

Typing of the Pueblo Largo ceramic assemblage demonstrates that temporally the types correlate well with the site's tree-ring dates. The 117 cutting or near-cutting tree ring dates provide solid evidence for the life span of the pueblo. The earliest date is 1230v from Kiva XX, which puts the initial occupation near the end of the Early Coalition Period. The latest date, 1439+r, is from an unidentified room near Nelson's Room 1 in Roomblock IV. All but three of the Early and Late Coalition period dates are from the three roomblocks surrounding Plaza V. Their range indicates the initial occupation around Plaza V was concentrated between AD 1260 and 1330. Dates from the rest of the pueblo are later, suggesting that a second, larger population began construction of Roomblock IV around 1415. There are only 3 cutting dates in the 71 years from AD 1336 to 1407, which likely indicate a hiatus in both building and occupation, followed by a resurgence of immigration by a larger number of people, during which some 680 rooms (90% of the pueblo approximately) were constructed.

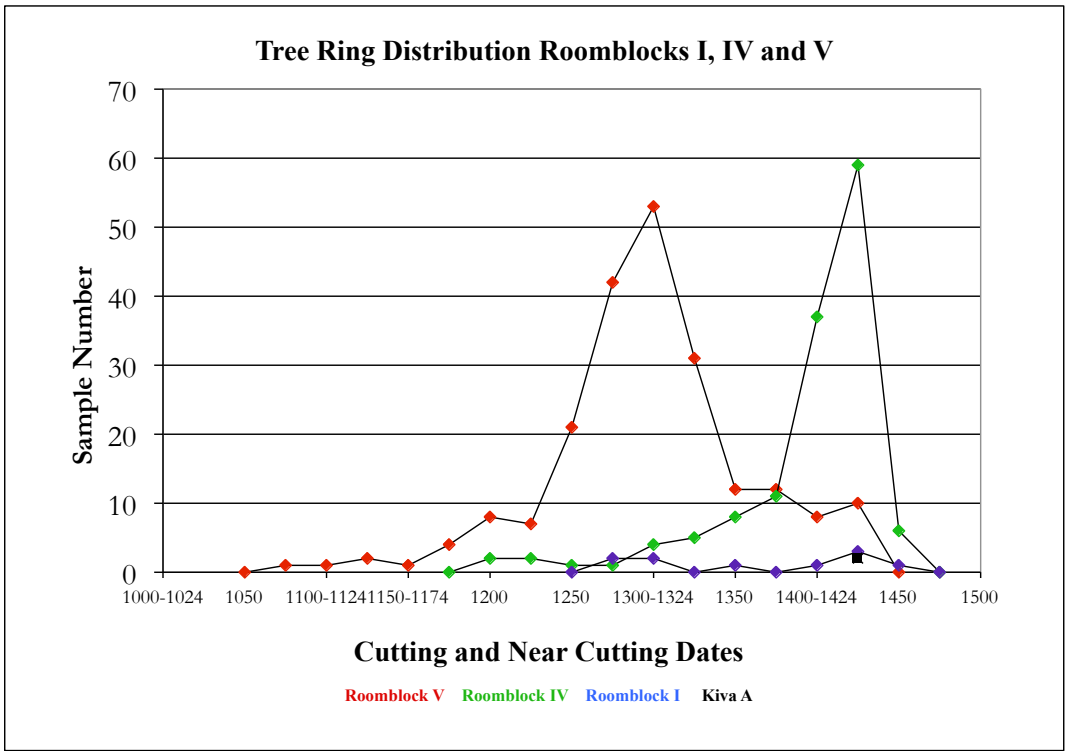


Figure 16. Tree Ring Distribution Roomblocks I, IV, and V.
Note: Kiva A represented by a black box in chart at AD1431.

Occupation of the pueblo probably ended by AD 1460. The ceramics support this hypothesized end date; we found only one Glaze D (1470-1515) and no Glaze E (1515-1700) samples. The tree-ring dates also suggest that Plaza V may have been largely or wholly unoccupied between 1340 and the beginning of the 15th century. The cutting dates indicate there was some activity, perhaps remodeling, around Plaza V after 1400. What we cannot determine from the excavation record is whether these cutting dates indicate people were again living around Plaza V, or whether they were returning to this portion of the site to conduct rituals or other activities.

The ceramics and tree-ring dates help place Largo within the chronology of the Galisteo Basin and its periphery. Largo's earliest construction phase coincided with increased aggregation in the Galisteo Basin. Several sites have chronometric and/or ceramic evidence of Developmental and Early Coalition period occupations that were initiated prior to the occupation of Largo, including Pueblo San Marcos (LA 98), Pindi (LA 1), Lamy Junction (LA 27, LA 362-368, LA 31774-31779, and LA 11239), and San Cristóbal (LA 30). The tree rings tell us that construction at Pueblo Largo accelerated around Plaza V during the last several decades of the 13th century (Late Coalition Period) when pueblo construction was ramping up throughout the Galisteo Basin. In addition to continued occupation of the earliest pueblos, building during the Late Coalition Period began at the pueblos of Manzanares (LA 1104), Burnt Corn (LA 359), Upper Arroyo Hondo (LA 76), Las Madres (LA 25), Shé (LA 239), and San Lazaro (LA 91-92). By the 15th century, a number of the pueblos, including Largo, Upper and Lower Arroyo Hondo, Burnt Corn, Chamisa Locita, Lamy Junction, Las Madres, Manzanares, Pindi, and Shé were no longer occupied.

Table 8. Pueblo Largo compared with other tree ring dated sites in the area		
Pueblo	Earliest to latest date	Number of samples
San Marcos LA 98	1153 – 1633	13
Pindi LA 1	1162 – 1348	187
Upper Arroyo Hondo LA 76	1262 – 1328	44
Arroyo Hondo LA 12	1315 – 1410	312
Galisteo Pueblo LA 309	1264 – 1333	263
Manzanares LA 10607	1269 – 1307	34
Chamisa Locita LA 4	1313 – 1333	8
Burnt Corn LA 9144	1272 – 1307	??
Pecos LA 625	1299 – 1539	99
Paa-ko LA 162	1360 –1565	62
Las Madres LA 25	1319 – 1382	171
San Cristobal LA 30	1427 – 1456	70
Pueblo Largo LA 183	1230 – 1439	410
Contemporary with Pueblo Largo in the Tewa District, 40 + miles north		
Tsiping LA 908	1314 – 1410	15
Tsama LA 301	1231 – 1249	3

Note: Information for table from (Robinson and Cameron 1991)

Table 9. Pueblo Largo cutting and near-cutting dates used in this report

(Note: A table of All 410 Largo tree ring samples is found in the appendix)

Largo Location	Tree-Ring Lab ID	Form and Condition of Sample	Excavation Level	Date
Kiva A, Plaza A	RG-3201-1	incomplete, small charcoal fragment		1431r
Kiva A, Plaza A	RG-3201-2	3 incomplete, small charcoal fragments		1431r
IV-e-3, Dutton	RG-2968-1	incomplete charred fragment		1317v
IV-e-3, Dutton	RG-2957-1	incomplete charred fragment		1414v
IV-e-3, Dutton	RG-2960-1	incomplete charred fragment		1422v
IV-e-3, Dutton	RG-2955-3	complete charred fragment		1425r
IV-e-3, Dutton	RG-2954-4	complete charred fragment		1427r
IV-e-3, Dutton	RG-2954-3	incomplete charred fragment		1435r
IV-f-2, Dutton	RG-2947	charred fragment	Level 7	1340v
IV-f-2, Dutton	RG-2948-1	complete charred fragment	Level 7	1407r
IV-Nelson's 1	RG-271-17	2 incomplete charred fragments		1412r
IV-Nelson's 1	RG-271-18	incomplete(?) charred fragment		1414v
IV-Nelson's 1	RG-271-33	charred fragment		1426+r
IV-Nelson's 1	RG-271-22	complete charred fragment		1426r
IV-Nelson's 1	RG-271-40	complete charred fragment		1429+r
IV-Nelson's 1	RG-271-12	complete charred fragment		1430+r
IV-Nelson's 1	RG-271-29	complete charred fragment		1430+r
IV-Nelson's 1	RG-271-10	incomplete charred X-section		1430r
IV-Nelson's 1	RG-271-16	complete charred fragment		1430r
IV-Nelson's 1	RG-271-39	complete charred fragment		1430r
IV-Nelson's 1	RG-271-15	incomplete charred fragment		1430v
IV-Nelson's 1	RG-271-30	complete(?) charred fragment		1430v
IV-Nelson's 1	RG-271-35	charred fragment		1431+r
IV-Nelson's 1	RG-271-41	complete charred fragment		1431+r
IV-Nelson's 1	RG-271-32	complete charred fragment		1431r
IV-Nelson's 1	RG-271-34	incomplete charred fragment		1431r
IV-Nelson's 1	RG-271-38	complete charred fragment		1431r
IV-Nelson's 1	RG-217-54	incomplete charred fragment		1431v
IV-Nelson's 1	RG-271-49	incomplete charred fragment		1431v
IV-Nelson's 1	RG-271-54	incomplete charred fragment		1431v
IV-Nelson's 1	RG-271-2	complete charred fragment,17.05mm radius		1433r
IV-Nelson's 1	RG-271-8	charred fragment, 27.2-30.0mm diameter		1435B

IV-Nelson's 1	RG-271-20	complete charred fragment		1435r
IV-Nelson's 1	RG-271-37	complete charred fragment		1436r
IV-Nelson's 1	RG-271-31	complete charred fragment		1436v
IV-north of Nelson's 1	RG-2556	rotted log, X-section, 43mm radius		1295c
IV-north of Nelson's 1	RG-493-17	charred ¼ X-section		1314c
IV-north of Nelson's 1	RG-493-15	incomplete charred fragment		1407r
IV-north of Nelson's 1	RG-493-14	incomplete charred ½ X-section		1409+G
IV-north of Nelson's 1	RG-493-20	incomplete charred fragment		1412r
IV-north of Nelson's 1	RG-493-3	incomplete charred ¼ section		1412r
IV-north of Nelson's 1	RG-493-57	incomplete charred fragment		1421v
IV-north of Nelson's 1	RG-493-26	incomplete charred fragment		1426r
IV-north of Nelson's 1	RG-493-51	incomplete charred fragment		1426r
IV-north of Nelson's 1	RG-493-9	incomplete charred fragment		1426r
IV-north of Nelson's 1	RG-493-19	incomplete charred fragment		1430r
IV-north of Nelson's 1	RG-493-58	incomplete charred fragment		1430r
IV-north of Nelson's 1	RG-493-10	complete charred fragment		1431+r
IV-north of Nelson's 1	RG-493-4	incomplete charred fragment		1432r
IV-north of Nelson's 1	RG-493-21	complete charred fragment		1438r
IV-north of Nelson's 1	RG-493-62	complete charred fragment		1438r
IV-north of Nelson's 1	RG-493-24	charred ½ X-section		1439+r
Plaza V, Kiva XX	RG-2648	incomplete charred, rotted wood X-section		1230v
Plaza V, Room 05	RG-2972-4	complete charred fragment		1287+rB
Plaza V, Room 05	RG-2557	charred log, X-section, 45mm radius		1299c
Plaza V, Room 05	RG-2561	rotted wood log, X-section, 36mm radius		1299c
Plaza V, Room 05	RG-2563	rotted wood stick, X-section, 19mm radius		1299c
Plaza V, Room 05	RG-2565	rotted wood beam, X-section, 31mm radius		1299c
Plaza V, Room 05	RG-2977-7	complete charred branch X-section		1302+B
Plaza V, Room 05	RG-2968-15	complete charred fragment		1313++B
Plaza V, Room 05	RG-2968-3	complete charred fragment		1315+rB
Plaza V, Room 05	RG-2968-12	complete charred fragment		1322+B
Plaza V, Room 05	RG-2968-4	complete charred fragment		1322+B
Plaza V, Room 05	RG-2977-2	complete charred fragment		1435v
Plaza V, Room 10	RG-2987-2	charred fragment	Level 6	1344++B
Plaze V, Room 10	RG-2987-1	complete charred fragment		1328rB
Plaza V, Room 11	RG-2995-1	complete charred fragment	Level 5	1298r
Plaza V, Room 11	RG-2999-8	incomplete charred fragment	Level 8	1421v
Plaza V, Room 12	RG-2647	incomplete rotted wood X-section		1268v
Plaza V, Room 12	RG-2645	incomplete rotted wood X-section		1269r
Plaza V, Room 12	RG-2602	complete wood X-section		1287r
Plaza V, Room 12	RG-2024	incomplete rotted wood X-section		1292+r
Plaza V, Room 12	RG-3023-1	incomplete rotted wood X-section (beam)		1292+r
Plaza V, Room 12	RG-3021	incomplete rotted wood fragment (pole)		1302v
Plaza V, Room 12	RG-3027-1	incomplete rotted wood X-section (beam)		1302v
Plaza V, Room 12	RG-3033	incomplete rotted wood X-section (beam)		1302v
Plaza V, Room 12	RG-3037	incomplete rotted wood fragment (pole)		1302v
Plaza V, Room 12	RG-3056	incomplete charred fragment		1396v
Plaza V, Room 13	RG-3082-1	complete charred fragment		1297r
Plaza V, Room 13	RG-3085-4	incomplete charred wood		1298++B
Plaza V, Room 13	RG-3068	incomplete rotted wood fragment (pole)		1298+r
Plaza V, Room 13	RG-2630	incomplete(?) rotted wood ½ X-section		1298v
Plaza V, Room 13	RG-3060	incomplete rotted wood X-section (pole)		1299+r
Plaza V, Room 13	RG-2721	complete rotted wood X-section		1299c
Plaza V, Room 13	RG-2723	complete rotted wood X-section		1299c
Plaza V, Room 13	RG-2727	complete rotted wood X-section		1299c
Plaza V, Room 13	RG-3061	complete rotted wood X-section		1299r
Plaza V, Room 13	RG-3087	incomplete rotted wood X-section (pole)		1299r
Plaza V, Room 13	RG-3069	incomplete(?) rotted wood X-section		1300v
Plaza V, Room 13	RG-3079-4	complete charred fragments		1324rB
Plaza V, Room 15	RG-3110-1	incomplete charred wood fragment		1426+B
Plaza V, Room 17	RG-3128-2	complete charred fragment		1382+B
Plaza V, Room 18	RG-2638	complete charred X-section		1297+rB

Plaza V, Room 18	RG-3137-1	complete charred wood fragment		1368B
Plaza V, Room 20	RG-2612	complete rotted wood X-section		1267c
Plaza V, Room 20	RG-2714	incomplete rotted wood X-section		1293v
Plaza V, Room 21	RG-2650	incomplete rotted wood X-section		1243v
Plaza V, Room 21	RG-2697	incomplete rotted wood X-section		1245v
Plaza V, Room 21	RG-2598	incomplete rotted wood X-section		1265v
Plaza V, Room 21	RG-2604	complete(?) rotted wood X-section		1267c
Plaza V, Room 21	RG-2599	complete wood X-section		1267r
Plaza V, Room 21	RG-2694	complete rotted wood ½ X-section		1267r
Plaza V, Room 21	RG-2605	incomplete rotted wood X-section		1267v
Plaza V, Room 21	RG-2620	incomplete rotted wood fragment		1267v
Plaza V, Room 21	RG-2700	incomplete rotted wood X-section		1267v
Plaza V, Room 21	RG-2709	complete rotted wood X-section		1267v
Plaza V, Room 21	RG-2710	complete rotted wood X-section		1267v
Plaza V, Room 21	RG-2596	incomplete rotted wood X-section		1268v
Plaza V, Room 21	RG-2601	incomplete rotted wood X-section		1270c
Plaza V, Room 21	RG-2618	complete rotted wood X-section		1292r
Plaza V, Room 21	RG-2610	incomplete rotted wood X-section		1292v
Plaza V, Room 21	RG-2701	complete(?) rotted wood X-section		1321c
Plaza V, Room 21	RG-2613	incomplete(?) rotted wood X-section		1325r
Plaza V, Room 21	RG-2668	complete rotted wood X-section		1325r
Plaza V, Room 21	RG-2698	complete rotted wood ½ X-section		1325r
Plaza V, Room 21	RG-2616	incomplete (?) rotted wood X-section		1325v
Plaza V, Room 24	RG-3153-1	incomplete charcoal fragment	Level 1	1426r

ROOMBLOCK I

Roomblock I is a substantial, rectangular roomblock that borders Plaza A. It is the southernmost roomblock at Largo. When Nelson mapped the site, he estimated that the ground floor of Roomblock I was 5 rooms deep and 15 rooms long (1914:69). There is insufficient information to assess whether this roomblock was single or multistoried. He excavated two rooms here; Room I-1 at the southeastern end of the block and Room I-2, at the northwestern end. Both rooms are one row in from the plaza. Dutton excavated a single room, I-3, which is adjacent to Nelson's Room 1. During site visits, the authors were able to identify each of these rooms as they have not been backfilled. The supporting lines of evidence, particularly ceramics and chronometric dates that would help interpret this portion of the site, are very limited. There are no cutting or near-cutting dates. Two samples of non-structural wood, charcoal fragments from near the surface of Dutton's Room I-3, produced dates of 1421vv and 1274vv. Thus, the latest obtainable date of 1421vv indicates the occupation of the southeastern sector of the roomblock was sometime after AD 1421. Over half the wood samples submitted were from unburned wood, including an undatable cross section of architectural wood from what is probably the floor. The Room I-3 fill produced 126 sherds., of which 39 were datable. There were 49 glazeware sherds to one black-on-white. Glaze C Espinosa Glaze Polychrome[1], the latest glazeware type found in size at the site, is the dominant datable ceramic type (n=28).

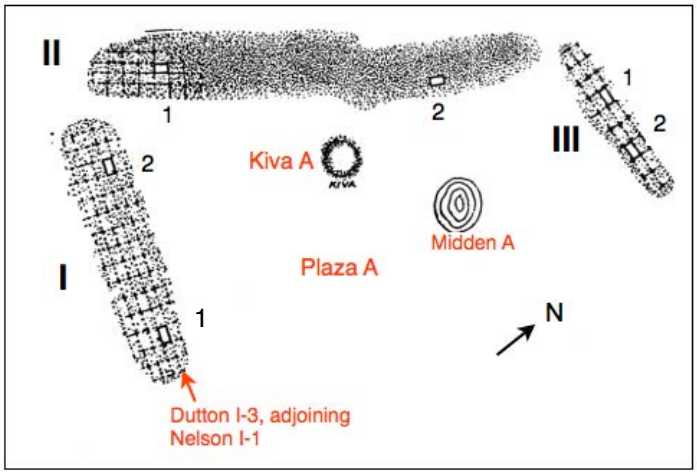


Figure 17. Roomblocks I, II, and III surrounding Plaza A. Map Adapted from Nelson 1914.

Nelson's Room I-1

Room I-1 is near the eastern end of the roomblock. The artifacts Nelson enumerated consist of an unknown number of manos, a sandstone metate, several bone awls, a large corrugated jar, and a glaze-on-red vessel. The room's single feature is a doorway in the south wall that is 30 cm wide and 80 cm high and 20 cm above the floor. When Nelson excavated the room, some plaster remained on the walls. The average height of the standing walls was 170 cm. The area of the floor is approximately 7.8 m^2.

Nelson's Room I-2

Room I-2 is situated near the northwestern end of the roomblock. The artifacts Nelson noted include a stone disc he describes as a pot cover, a pointed tool made from an antler, manos, a bone awl and a large, modified chert flake (n.d: 3). The standing walls have an average height of 180 cm, with remnants of plaster adhering to the interior masonry. This room, with a floor area of approximately 5.5 m^2, is the smallest of the three excavated rooms in the roomblock.

Dutton's Room 1-3

Room I-3 is a rectangular, masonry structure, which the Girl Scouts excavated during the 1951 and 1952 seasons. It is adjacent to Nelson's Room 1, in the southeast end of the roomblock. The ceramic assemblage of 126 sherds[2] is small for Largo. In the Plaza V roomblocks, counts of all ceramics, not just datable ceramic types, range from a low of 124 (Room 24) to a high of 2,181 (Room 11). There are no sherds from levels 2, 6, and 7 in the LOA collection. Given the low sherd count, it is also possible that these levels did not produce any ceramics.[3]

Figure 18. Dutton's Room I-3 looking west.
White cliff face at Pueblo Colorado at horizon, Author's photo.

The description of the room and the metrics are derived from Dutton's *El Palacio* article (1953:347-348) and fragmentary information from the field notes (LOA 95PLE.013). The floor is primarily packed adobe, with occasional flagstones. The room is approximately 6.7 m^2. The wall lengths are; north wall, 3.6 m, south wall, 3.4 m, east wall 1.8 m and west wall, 1.9 m. The east and west walls abut the north and south walls. Beyond a depth of 70 cm^4, there is evidence of wall plaster. Portions of the north wall, including an area below a sealed doorway, are sooted. The west wall plaster is sooted and the south wall is oxidized[5]. While Dutton's description of sooted and oxidized plaster suggests the room burned, the majority of the wood samples sent to the TRL were rotten, unburned wood, including wood fragments and an unburned cross section of architectural wood from what is probably the floor level. While there may have been a fire in I-3, it was not sufficiently intense or long-lived to burn the roof.

There are five features, consisting of two sealed doors, a ventilator, and two wall features of unknown function. The south wall contains a sealed doorway measuring 45.7 cm wide, 57.9 cm high and situated 61.0 cm above the floor. Also in the south wall is a 35.1 cm x 57.9 cm x 27.4 cm niche that has been subdivided vertically and horizontally by thin sandstone slabs. A second sealed doorway, 36.6 cm x 61.0 cm, is located in the north wall[6]. The north wall also contains two circular, side-by-side niches 42.7 cm above the floor. One has a diameter of 15.2 cm; the diameter of the other is unknown.

The room fill contained a variety of household tools. Ground stone predominated; five complete manos and seventeen mano fragments were recovered, as well as a slab metate and a metate fragment. The assemblage included two hammerstones, a polishing stone, and two thin stone discs that Dutton described as pot lids[7] (1953:348). Bone tools consisted of two awls and a spatula. There was also an antler flaker and a *Turritella* shell in the assemblage. The artifacts in contact with the floor include small animal bones, a mano, a shell fragment, a bone scraper and a metate fragment.

We sorted and typed 126 sherds from the fill, 39 of which are datable ceramic types. This datable assemblage is dominated by Glaze C Espinosa Glaze Polychrome, which represents 76% of the datable ceramics, while the proportion of Glaze A types is 14%. Temporally, the production of Glaze A in the Northern Rio Grande tapers off at approximately 1425, just as Glaze C is appearing. Espinosa Glaze C Polychrome continues to be produced until the end of the 15th century and probably into the 16th century at some sites. Given this small sample without accompanying tree-ring dates, any temporal analysis has to be tentative. That said it appears the southeast sector of the roomblock, where I-3 is located was occupied after 1425 and perhaps as late as the second half of the 15th century. While the roomblock was built in a single construction episode[8], we cannot assume all the rooms were abandoned at the same time and would have ceramic assemblages similar to Room I-3's. On the other hand, if the ceramic count is relatively close to the actual number of sherds that were in the fill, it would mean the room was not used as a midden for secondary deposits of household refuse from surrounding rooms and that this entire sector of the roomblock was abandoned at approximately the same time.

Notes: Roomblock I:

1. The production date range for Espinosa Glaze C Polychrome is AD 1425-1500.

2. This is all sherds, not just datable ceramic types.

3. There is considerable disparity between the ceramic count published in *El Palacio* (1953:348) and the count derived from our sorting of the LOA assemblage. Dutton enumerated three potentially reconstructable vessels consisting of sherds from a quarter of a Glaze II Yellow bowl (Largo Glaze-on-yellow), two-thirds of a Glaze III bowl (Espinosa Glaze Polychrome) and approximately half a Smeared Corrugated jar. In addition she listed 144 additional sherds of various types, including a single Galisteo Black-on-white sherd, 50 Glaze I Yellow (Cieneguilla Glaze-on-yellow), and 39 smeared corrugated. The only agreement between our count (126 sherds) and Dutton's is the 39 smeared corrugated sherds. We identified three Cieneguilla Glaze-on-yellow sherds (Dutton = 50) and no Galisteo Black-on-white or any other black-on-white types.

4. This metric is probably the average distance from the top of the existing walls. Without a datum consistent measurements from the modern ground surface could not be taken.

5. The extent of the sooting and oxidation are not quantified in Dutton's article. She uses terms like "considerably blackened" (1953:347) and "largely reddened from heat" (1953:347).

6. The field notes describe a ventilator in the north wall with the same dimensions. Dutton appears to have reinterpreted this feature as a doorway.

7. There are no dimensions for these two artifacts.

8. Dutton's description of the room construction, with abutted rather than bonded cross-walls, indicates the roomblock was probably built at one time. It was a common construction technique also evident in Component I of Arroyo Hondo (Creamer 1993:16). In the case of Roomblock I, the long north and south walls would have been constructed first, and then the short east-west walls.

ROOMBLOCK II

This large masonry roomblock is located in the southernmost sector of the site. It is approximately 30.5 m x 121.9 m west and north of Roomblock I, and it articulates with Roomblock I at an angle of approximately 70º. Nelson's depiction of this roomblock on his site map indicates this roomblock, like Roomblock I, is five rooms deep. A gap between the western end of Roomblock I and the southern tip of Roomblock II connects the Plaza A with the open space beyond the roomblocks. The northern end of the roomblock articulates with Roomblock III at an angle of approximately 90°. In a manner similar to the southwestern end of the roomblock, there is a passage linking the plaza with the outside at the northern end of Roomblock II. These two roomblocks, along with Roomblock III to the east, form the three sides of the open plaza that contains Kiva A and Midden A. Nelson excavated two rooms in Roomblock II both of which are still visible as they were not backfilled. Dutton did not excavate in this area.

Nelson's Room II-1

Room II-1 is located near the southern end of the roomblock, at the top of the rubble mound. Nelson reported an assemblage that included six manos, a pointed bone tool 18 cm long, a 46 cm square stone slab, and several polishing stones (n.d., 5). The average height of the standing walls was 1.7 m when Nelson visited the site (1914:119). Some plaster remained on the interiors of the walls. Wall lengths are; north wall 2.0 m, south wall 2.2 m, and the east and west walls are 4.0 m long; the floor area is approximately 8.2 m^2.

Nelson's Room II-2

Room II-2 is located in the northern sector of the Roomblock II in a row of rooms close to the plaza. The fact that Nelson extended his excavation below the base of the room's corner walls suggests he spent more time in this room than any other of the Largo structures (Nelson n.d., 5-6). The average height of the walls was 1.8 m and they retained a considerable amount of plaster. The floor area is approximately 5.1 m^2 and of adobe construction. Nelson recorded two features, a doorway in the east wall and a slab-framed opening of unknown function in the west wall. The door measured 40 cm wide and 80 cm high with a sill that was flush with the floor. The 40 cm wide, 15 cm high opening in the west wall was located 40 cm above the floor. The top and bottom of this feature were framed with rock slabs.

The artifact inventory is the most extensive description in Nelson's Largo notes. The ground stone items include: a worn basin metate measuring 28.0 cm x 43.2 cm x 5.0 cm; and an unused metate measuring 12.7 cm x 27.4 cm x 43.2 cm; a 30.5 cm x 43.2 cm sandstone slab blackened on one side; a partial axe; two sandstone discs Nelson identifies as pot covers, and a ground stone fragment he called a muller. The assemblage also includes a "monument stone" (Nelson n.d., 5) that is 22.9 cm high, with a base measuring 7.6 cm x 10.2 cm. In addition, he reported two stemmed projectile points, hammerstones, and approximately a quart of miscellaneous sherds. Deer and turkey bones were also present, along with eggshell fragments.

ROOMBLOCK III

Roomblock III is northeast of Roomblock II. The dimensions are approximately 7.6 m x 61.0 m. It considerably smaller than Roomblocks I and II. Nelson's site map indicates the roomblock is comprised of three rows of rooms. The map shows passages at the western and eastern ends of the block. The eastern passageway connects with the western corner of Roomblock IV, and the northern rooms of Roomblock III form one side of a square-shaped plaza between the two roomblocks.[1]

Nelson excavated two rooms in Roomblock III and noted some of the rooms were large in comparison to the other rooms at Largo. He also observed that the walls were low, and speculated that building materials may have been reused in other parts of the site. Another possible explanation would be that the roomblock was originally one story high. It is also possible that Roomblock III was never finished, or that it may have been another wing of Roomblock IV.

Nelson's Room III-1

Room III-1 is in the western sector of Roomblock III. The average wall height was 1.2 m. The north wall is 4.7 m long, the south wall 4.5 m, the east wall 2.1 m, and the west wall 2.3 m. The floor area is 9.9 m^2. The only artifact noted was a red vessel with a red design outlined in glaze paint, perhaps Glaze C Espinosa Glaze Polychrome.

Nelson's Room III-2

Room III-2 is in the eastern sector of the roomblock. The average wall height is 1.1 m. The north wall is 4.1 m long, the south wall is 4.0 m, the east wall is 2.6 m, while the west wall is 2.5 m. The floor area is 9.6 m^2. The artifacts Nelson enumerated included three human heel bones, and a fragment of a glazeware vessel with a description that matches Cieneguilla Glaze-on-yellow.

Notes: Roomblock III:

1. This roomblock's proximity to Roomblock IV raises the question of whether III is part of Plaza A or Roomblock IV. A more complete survey of the site, and perhaps test excavations would be required, including determining if the areas are contemporaneous.

ROOMBLOCK IV

Nelson describes Roomblock IV as a building situated on the "higher portion of the mesa rim . . . the disposition of the different wings conforms to the topography" (n.d.: 8). This large roomblock has six contiguous sections of rooms (wings a through f), three plazas, and three plaza kivas; Kiva B and two unnamed probable kivas. The wings are several rooms deep and many were probably multiple stories, although neither Nelson nor Dutton discussed this possibility. Four of the six wings were sampled. Nelson excavated one room in each of four wings (c, d, e, and f) and later Dutton excavated one room in the e wing and the f wing.

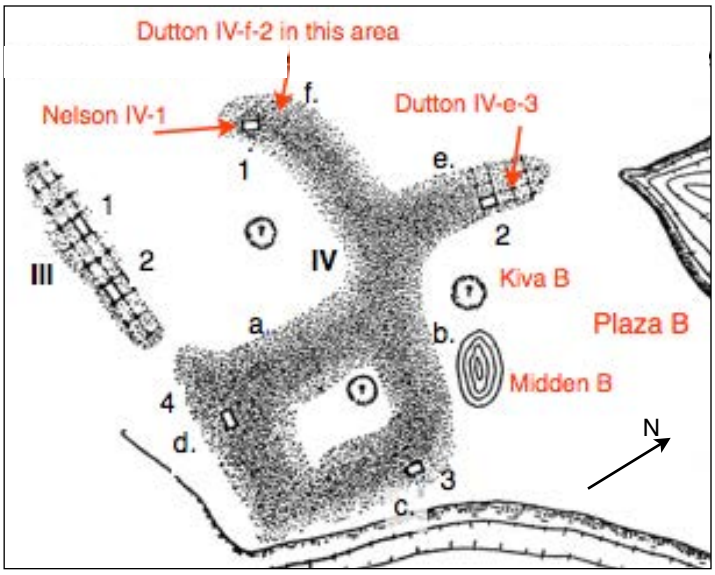


Figure 19. Roomblock IV. Map Adapted from Nelson 1914.

In addition to the data from the six excavated rooms, which includes numerous tree-ring dates, W. S. Stallings collected wood samples from Nelson's Room 1 and a room or area north of IV-1 in 1933; his dates are included in our discussion. There are 143 tree ring samples from Roomblock IV and from an unknown area designated by Stallings as "IV-north of Nelson's 1." We do not know if this is a room or an open area north of the f wing of the roomblock. Of those 143 samples dated by the LTRR, 50 are datable cutting and near-cutting dates that concentrate in the third and fourth decades of the 15th century. Three earlier dates hint at a previous construction phase around the end of the first decade of the 14th century[1]. The latest cutting dates are 1438r and 1439 +r.

While 143 is an impressive number of chronometric dates, three things should be kept in mind. First, the dates are derived from two rooms in the f wing, one room in the e wing, and an unknown location that is probably another room in the f wing. The second issue is that, while there are 143 dates, only seven are clearly from architectural wood; the remainder are charcoal fragments that might be from latillas or are remnants of wood from neighbors' hearth clean outs. Finally, a letter from Ted Smiley of the LTRR to Dutton indicates samples were not being prepared properly for shipment and were arriving at the LTRR as fragments (Smiley 1956). Some of the charcoal fragments may have been structural wood, but they had crumbled into small pieces during transport to Arizona. The chronological history of the remainder of this massive roomblock, which includes two unexcavated kivas remains unknown. On the other hand, the only excavated midden at Largo, Midden B, is here in Plaza B, directly north of the b wing and east of Kiva B.

Nelson's Room IV-1

Room IV-1 is near the northwestern edge of the f wing (Nelson n.d.:8). Of the 13 rooms Nelson excavated, this is the only one that has solid evidence of burning. It is also the only identifiable Nelson room with tree-ring dates collected about 20 years later by Stallings. Average wall height was 0.8 m. The north wall is 2.1 m long, the south wall 2.0 m, the east wall 3.6 m, and the west wall is 3.5 m long. The floor area is 6.3 m^2. Nelson noted that some of the plaster was oxidized to "a brick red" (1914:72). A half bushel of burned, shelled corn was noted, along with burned wood. Ground stone artifacts included a large and a small metate, two mullers, and a stone artifact that Nelson identified as a pot cover. The ceramics consisted of fragments of several vessels that appear to have been glazewares, along with "much fired clay" (Nelson n.d.:8). The distal end of bone awl, measuring 10.2 cm long was also reported.

This room was built around 1431. The wood samples collected by Stallings in the 1930s produced 25 cutting or near-cutting dates. The earliest dates are 1412r and 1414v. The remaining 23 dates cluster at 1430 and 1431 and are likely to represent the room's actual construction date. There is no later cluster of dates to suggest that the room was occupied long enough to need repairs and replacements of structural wood.

North of Nelson's Room IV-1

Stallings collected 17 cutting or near-cutting dates from a room, rooms or area in the f wing, north of Nelson's Room 1 (Warren 1969:3-7). We are limited in our interpretation of these dates because, without additional research, it is not clear whether all the dates are derived from one or several rooms. The early Largo files at the LTRR describe the collecting area as "Room N of R. I, Building IV" (1933), while Warren's later reanalysis of all Largo dates, including the Stalling's dates, are vaguer, indicating merely a direction (north) rather than a room[2]. The cutting dates from Stallings' work provide the earliest and the latest cutting dates for Roomblock IV, 1314c and 1439 +r, respectively. The sequence includes a date of 1314c, one of three 14th century dates from this roomblock. After the 1314c date, there is a gap of almost a century. Then the dates produce a small cluster at the beginning of the 15th century followed by a cluster that looks like construction in the third decade of the 15th century. There is a final cluster in the fourth decade of the 15th century, which could be construction (if the sample comes from more than one location) or repair work (if all the dates are from a single room). Four of the dates appear to be from structural wood, 1295c, 1314c, 1409+G, and 1439+r.

Nelson's Room IV-2

This room is located in the e wing of the roomblock; Dutton excavated a room to the east of IV-2. The roomblock is the northernmost sector of Roomblock IV, in the second row of rooms up from the plaza. Dutton's adjacent room has evidence of a second story; Nelson did not report evidence of a second floor in his room. The e wing forms the western boundary of Plaza B and is approximately 15 m west of Kiva B. The average wall height was 1.8 m when Nelson recorded the site. The north wall is 2.3 m long, the south wall is 2.2 m, and the east and west walls are 3.5 m. The area of the floor is 8.1 m^2. Nelson's artifact inventory included five mullers, a pot cover fragment, and a 15 cm long bone awl, along with an "upright

fireplace stone" (Nelson n.d.:9). Nelson also described a fragment of a corrugated vessel "with toe" (n.d.: 9) – which may refer to a lug handle – and a portion of a possible Cieneguilla Glaze-on-yellow bowl.

Nelson's Room IV-3

Room IV-3 is situated in wing c, the eastern portion the roomblock. This wing is part of the architecture that forms a four-sided, enclosed plaza (Dutton's wings a through d). Nelson identified a depression in the plaza that he believed might be a kiva. The standing masonry walls had an average height of 1.7 m. The north wall is 2.3 m long, the south wall 2.5 m, the east wall 2.2 m, and the west wall is 2.5 m (Nelson n.d.:9). The floor area is 5.5 m^2. The artifacts Nelson noted include a stone fragment he identified as a cooking slab, worked quartz/chalcedony, a vessel fragment that fits the description of Cieneguilla Glaze-on-yellow, and a flat, oblong ground stone object of indeterminate function that measured 8.3 cm long.

Nelson's Room IV-4

Room IV-4 is located in the d wing of the architecture around the enclosed plaza in Roomblock IV. This wing forms the southern boundary of the unnamed plaza that includes an unexcavated kiva. The room's one feature is a 0.3 m square opening 10.2 cm above the floor in the west wall, which Nelson identified as a "small door" (n.d.:10). The average height of the walls was 1.8 m when Nelson worked at the site 100 years ago. The floor area is 6.5 m^2. The artifacts Nelson recorded consist of a quartz "firestone", an obsidian fragment, and a sandstone metate measuring 25.4 x 44.5 x 7.6 cm (n.d.:10).

Dutton's Room IV-e-3

Room IV-e-3 is immediately north of Nelson's Room 2, and is located in the e wing of Roomblock IV. According to the Girl Scout field notes (LOA 95PLE.012), Nelson's room served as a convenient receptacle for the back fill from Room IV-e-3. The room is significant because it is one of the few rooms with evidence of a second story. There is also evidence of burning. Work was conducted during the summer of 1954. Regrettably, we could not locate the ceramics associated with this room in the LOA Archives. On the other hand, 27 wood samples produced 6 cutting or near-cutting dates that range from a possible "old wood" sample dating to 1317v, and then produced a sequence that begins in 1414v, a short cluster in the 1420s, and ends with a date of 1435r. All the samples that dated were fragments of charcoal. The room fill consisted of masonry and burned adobe, which suggests a second floor and perhaps a burning hearth, had collapsed into the ground-floor room the Girl Scouts excavated. Burned corn and corncobs were present throughout the fill, with discrete concentrations in the fill close to the walls. The actual amount of corn was not quantified, but it was sufficient to impress the excavators.

Figure 20. Dutton's Room IV-3-e, east wall with opening, Author's photo

Room IV-e-3 is rectilinear with one, possibly two doorways and a niche. The average height of the masonry walls at the corners is 2.2 m. The roof level, where the viga sockets are located, is 1.9 m above the floor. The additional masonry above the vigas indicates this may have been a two-story structure. The floor is adobe and the masonry walls were plastered. Some of the remaining plaster has impressions of corncobs and portions are blackened. A single sandstone slab was on the floor. The excavators determined it was not a cist cover; it may have been a hatchway cover or a grinding slab. The amount of rubble the excavators encountered, given the height of the standing walls, suggests the second story had collapsed into the first floor room. The north and south walls are 2.1 m long, the east wall is 3.9 m, and the west wall is 4.1 m. The floor area is 8.4 m^2. The sealed doorway in the east wall is 0.9 m high, 0.5 m wide, and 0.5 m above the floor. The north wall may also contain a door. There are no dimensions for this feature, but other room measurements indicate this opening would be approximately 0.7 m wide, 1.2 m high, and set 0.4 m above the floor. An empty niche, 25.4 cm high, 24.1 cm wide, and 15.2 cm deep is located in the west wall.

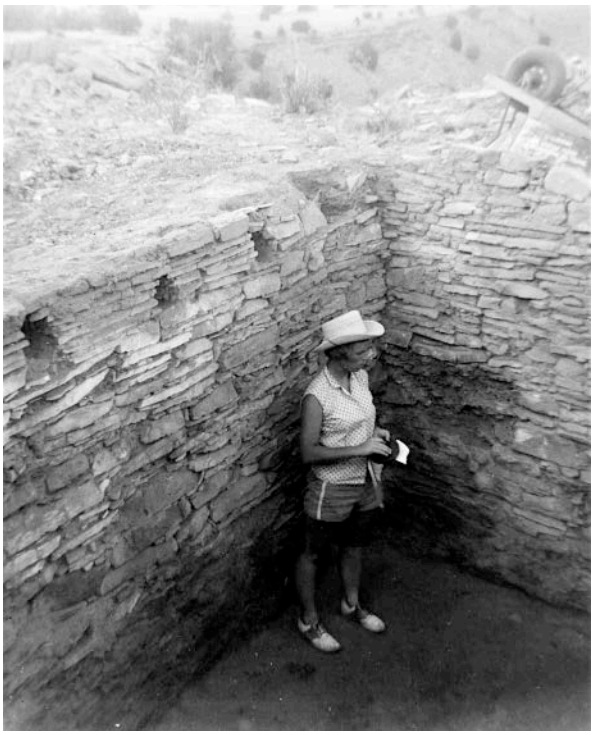


Figure 21. Photo believed to be Dutton's Room IV-e-3 showing viga holes described as located on the west wall. (Dutton Collection, MIAC/LOA, Cat. #G1-022)

Artifacts listed (but not always collected) in the field notes include animal bone, charcoal, burned adobe, and burned corn. Some of this material is likely to have come from the second floor. Over 20 complete or partial manos were present, along with several metates. Other artifacts include several projectile points, bone scrapers, bone and turquoise beads, and a "fetish." The excavators' descriptions of the ceramics suggest the glazeware in the room fill was Glaze A, Cieneguilla Glaze-on-yellow.

Dutton's Room IV-f-2

Room IV-f-2 is located in the f wing, near Nelson's Room IV-1. The work was conducted in 1951 (LOA 95PLE.012), during the first summer at Pueblo Largo. Dutton published a brief description of the room in the October 1953 volume of *El Palacio* (1953:345-346). Field notes in the LOA Archives are very sparse and we could not locate the ceramic assemblage for the room, so we relied on the published report. The two cutting or near-cutting dates include an early date of 1340v, which may represent "old wood" or an occupation date prior to the building episode in the 1420s and 1430s. The second date (1407r) is close to the two earliest dates (1412r and 1414v) from Nelson's nearby Room IV-1. There is evidence of fire in this room. The fill contained burned adobe and Dutton describes the masonry walls as "almost completely covered with red adobe and gypsum plaster about a half-inch thick" (1953:345). However, at least part of

Figure 22. Dutton's Room IV-f-2, author's photo 2008.

the roof did not burn; rotted beams, along with burned timbers, were uncovered in the southern sector of the room, just above the floor.

The walls in this rectilinear room are, on average, 1.9 m high, 36 cm thick, and covered with 1.3 cm of plaster. Some of the plaster had corncob imprints. The 6.5 m^2 floor area is adobe. The north wall is 2.6 m long, the south wall 2.8 m, the east wall 2.3 m, and the west wall is 2.1 m long. The only feature is a sealed doorway in the east wall that is 0.5 m wide, 0.8 m high and 0.7 m above the floor.

Dutton considered the first meter of room fill to be "relatively sterile" (1953:346) due to the absence of ceramics. The non-ceramic assemblage includes seven polishing stones, eight mano fragments, a projectile point, mica, and three bone awls. Dutton described the assemblage (1953:346) as consisting of two Santa Fe Black-on-white sherds, two Galisteo Black-on-white sherds, four Biscuit A sherds, 21 Cieneguilla Glaze-on-yellow sherds and 26 Agua Fria Glaze-on-red sherds[3]. The production date range for the glazewares is AD 1325 to AD 1425, which overlaps to some degree with Biscuit A (AD 1375-1450), Santa Fe Black-on-white (AD 1185-AD 1350), and Galisteo Black-on-white (AD 1300 – AD 1400). These ceramic dates are consistent with the two tree-ring dates from the room.

Notes: Roomblock IV:

1. This may be a case of "old wood." One of these dates, 1314c appears to be from structural wood. Two additional early dates are charcoal fragments and cannot be identified as latillas or beams; they date to 1317v and 1340v.

2. Although through the years, the LTRR drops the reference to a room, it is unlikely that Stallings would have been able to collect datable samples from a location other than a room. The number of datable samples suggests he either (1) excavated a room or (2) located Nelson's backfill and was able to extract good wood samples from the remains of that early excavation. It is also possible Stallings came upon rooms that had been excavated by people other than Nelson and was able to pull wood samples from their digging.

3. We assume there were also various types of utility wares in the room fill that Dutton chose not to list.

MIDDEN B

Midden B is the only midden that has been excavated at Largo. Nelson identified a second midden in Plaza A, southeast of Kiva A but he did not explore it, nor did Dutton. No midden has been identified in the Plaza V area. In addition to the two middens, it is clear from the excavations that Largo residents also deposited their secondary refuse in nearby abandoned structures. In addition, for Dutton's Dirty Diggers, as well as the people living around Plaza V, dumping refuse over the edge of the promontory was a quick and easy way to dispose of unwanted materials.

The Girl Scouts excavated Midden B during their first and second field seasons (LOA 95PLE.031). This feature is located in Plaza B, the easternmost plaza in Roomblock IV. Midden B is directly north of the b wing of Roomblock IV, and approximately 10 m east of Kiva B. Its proximity to the b wing and the e wing, 15 m north, suggests the residents of these two nearby wings probably created this midden over time. The excavation trench was 17.5 m long and the work proceeded in 0.3 m levels. We sorted and typed 7,738 sherds from a sample of four excavation units; 1,793 of these sherds represent datable ceramic types.

Figure 23. Trench B through Midden B during excavation 1954. View looking northwest. (Dutton collection, MIAC/LOA, Cat. # G1-025, B.Bauer photo)

There are no tree-ring dates from the midden, but the dates from the e and f wings suggest a short occupation, perhaps no more than 50 years. With an occupation of such a short duration, it cannot be expected that there would be chronologically meaningful midden stratigraphy: Largo midden's are the polar opposite of the Pecos middens. The ceramic cross dating of the midden assemblage does produce a clear difference between the ceramics from Plaza V and the small sample of ceramics from Plaza A. In addition to ceramics, the midden yielded several miniature vessels, pipe fragments, projectile points, flaked and ground stone, along with bone and shell artifacts (Dutton 1953:351). Thirteen burials were also recovered from the midden trench.

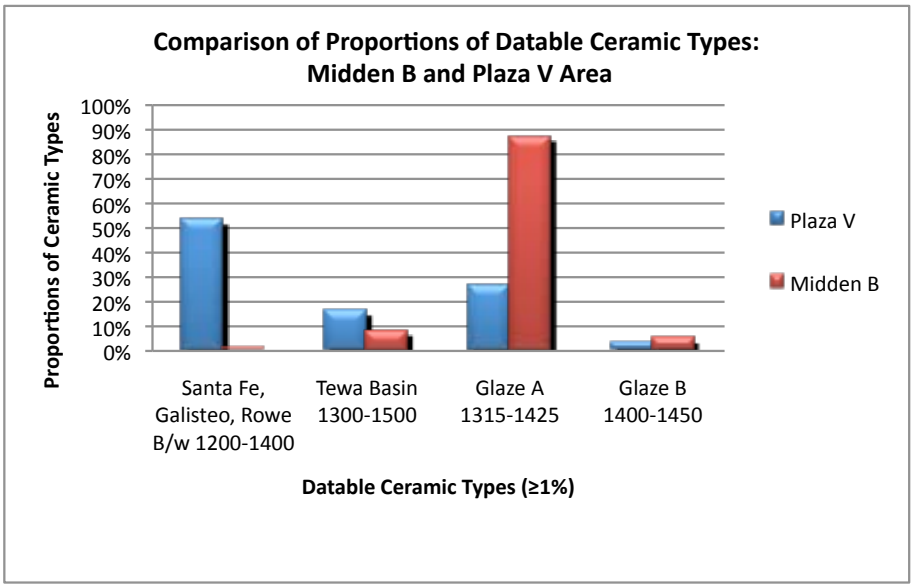


Figure 24. Comparison of Proportions of Datable Ceramics Types: Midden B and Plaza V Area

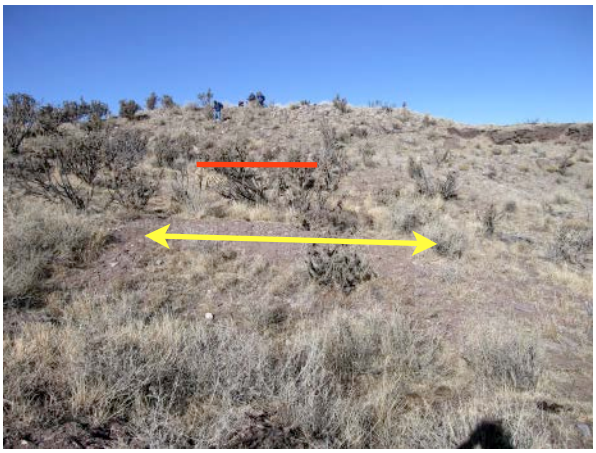


Figure 25. Midden B Trench, approximate location shown by yellow line. Red line is location of Kiva B. The "e" wing of Roomblock IV is at the horizon. Author's photo 2008.

Figure 26. Girl Scouts excavating Trench B in 1954, (Dutton collection, MIAC/LOA, Cat. # G1-045, B.Bauer photo)

SITE MAP FOR PLAZA V
and Introduction to Plaza V and Associated Roomblocks

We expected to find a site map produced by Dutton and the Girl Scouts when we searched for Pueblo Largo records in the Archives at the Laboratory of Anthropology. However, we were unable to locate such a map, although it is possible that a map was made and never curated. We did discover an artist's three-dimensional representation of Pueblo Largo prior to its abandonment. Although unsigned, the similarity between the style of this drawing and one Alice Wesche did for Dutton of Las Madres (LOA), suggests she also drew Largo for Dutton. Wesche's inclusion of a double tower northeast of Roomblock V, which is not on Nelson's map (Nelson 1914, Plate 11), suggests her reconstruction was derived from Dutton's interpretation of the site's architecture.

Nelson published his Galisteo Basin excavations, including maps of the sites, in 1914. That map, curiously, has the north arrow incorrectly placed, pointing more northeast, rather than north.[1] Aside from this directional problem, the Nelson map is a relatively accurate, broad representation of Roomblocks I through V. The absence of a detailed map for Roomblock V, where Dutton did most of her excavating, made it difficult to envision this crucial, early portion of Largo.

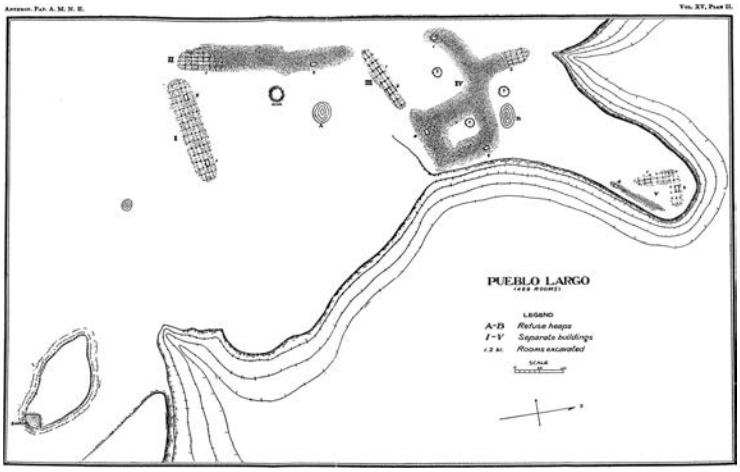


Figure 27. Pueblo Largo Map, Nels Nelson 1914, plate 11.

To remedy this problem, we decided to develop our own map of Roomblock V that would be based on a careful review of the Girl Scout field notes. In addition to descriptions of individual rooms and lists of the artifacts recovered, the excavators often produced hand-drawn sketches that showed horizontal wall dimensions, orientations, and a room's spatial relationship to surrounding rooms. Field notes occasionally included information about wall bonding and abutments. Vertical dimensions were sometimes noted, but the excavators measured from the tops of standing walls rather than a datum set at ground level. Some of these vertical dimensions helped to locate wall features in relation to floors. Descriptions of doors were insufficient in detail for us to determine whether these openings had been closed intentionally, with masonry, or left open and filled over time with sediment, roof-fall, and trash.

Figure 28. Conceptual drawing of Plaza V roomblocks, attributed to artist, Alice Wesche, ca. 1956, (Dutton collection, MIAC/ LOA, no cat. #)

The sketches provided enough identification and locational information about adjacent rooms that we were able to construct a map of Roomblock V. After an initial rough map was developed, we made a site visit to do some ground truthing. Neither Nelson nor Dutton backfilled rooms, so most rooms could be identified. While we did not take measurements, we were able to determine that our map was relatively close to what is visible some 50 years after Dutton's project. We compared the photographs we took with the few archived photographs from the 1954-1956 excavations. Later, we were fortunate to locate a few photographs of Pueblo Largo that had been stored in the Laboratory of Anthropology Archives with photographs taken of other nearby ruins.[2] These negatives are aerial photographs commissioned by Dutton in 1956, when Roomblock V was still being excavated.

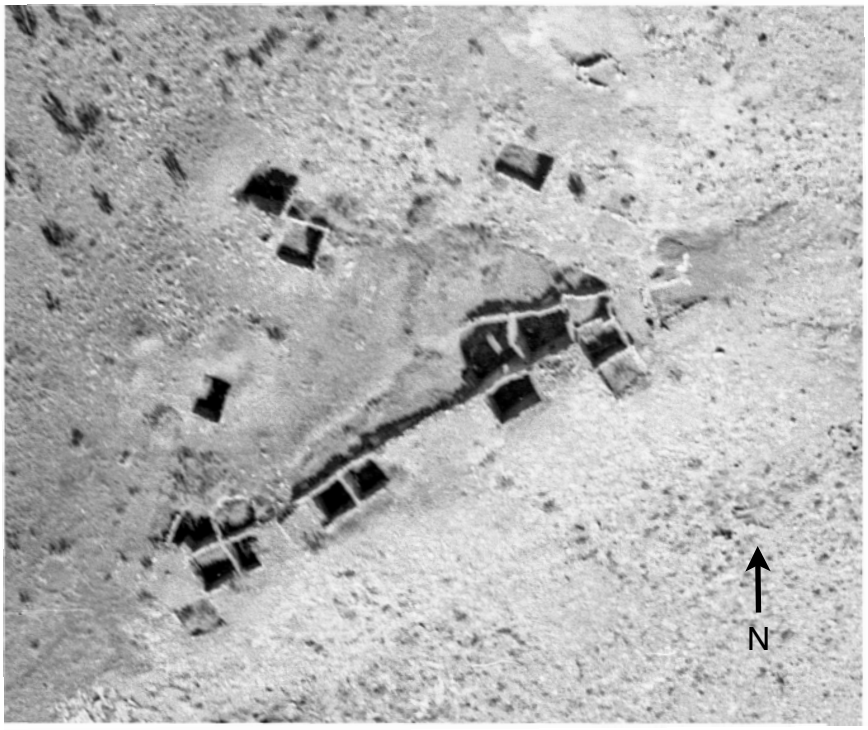


Figure 29. Pueblo Largo Aerial Photograph, Plaza V with associated roomblocks., 1956. (Dutton collection, MIAC/LOA Cat. #18)

Using one of these prints enlarged to the same scale as the map we made, we were able to reconcile our map with the aerial photograph. Only one cluster of rooms needed to be moved slightly to the west in order to line up with the aerial photograph. Finally, using Google Earth and overlaying a transparent image of our map, (Figure 30) we compared both the satellite information with our map, the aerial photographs from 1956, and Nelson 1916 map. The result is a very useable map of Roomblock V. (Figure 31)

Notes: Site Map Plaza V Roomblocks:

1. The correct location of north is depicted in Toll and Badner (2008:73), the map produced by Nelson has an incorrect north arrow (Nelson 1914, plate 11).

2. The Largo film negatives #13 through # 19 were in a box in the LOA Archives labeled Las Madres LA 25. This box included LA 3333, and LA 183 (Pueblo Largo) negatives. Negative #18 is used in this report.

Figure 30. Transparent site map drawing overlay of Google Earth image, by G. Stuart Patterson.

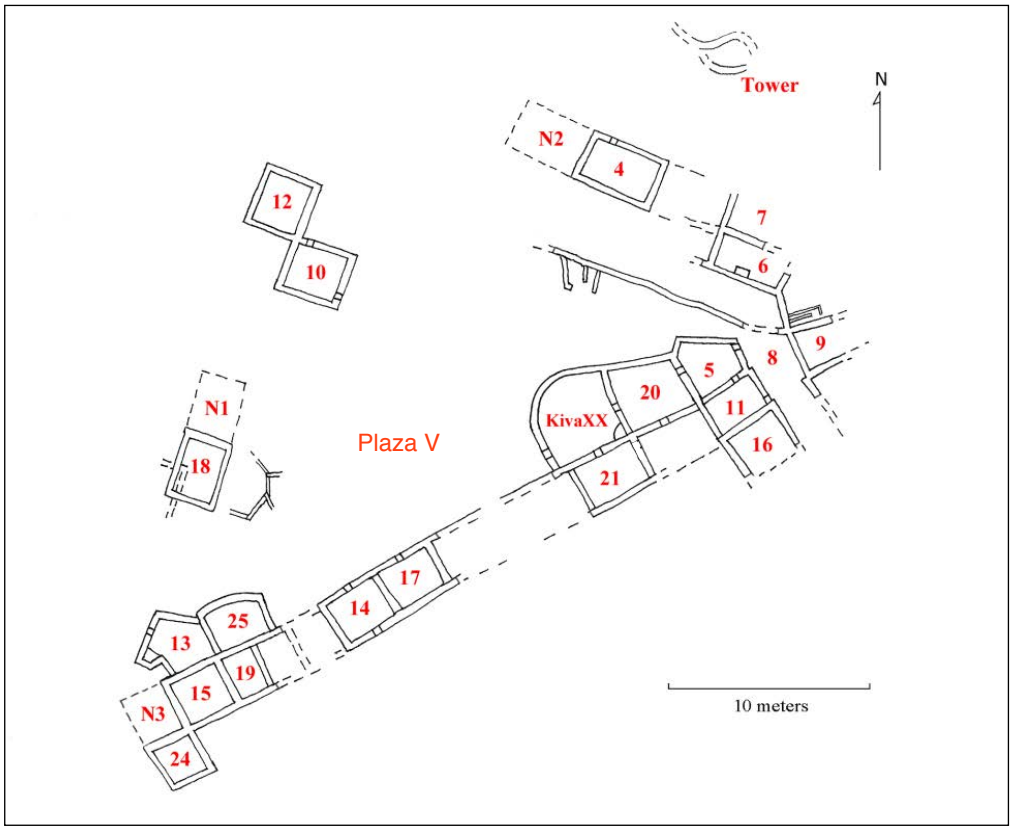


Figure 31. Pueblo Largo LA183, Map of Plaza V with associated roomblocks, by Carole Gardner.

Figure 32. Pueblo Largo LA 183 Plaza V Roomblock on the escarpment rim overlooking Escavada Wash. Photo by Wolky Toll

INTRODUCTION TO PLAZA V ASSOCIATED ROOMBLOCKS

Three clusters of roomblocks surround the triangular-shaped Plaza V on the northernmost section of Pueblo Largo. The east, north, and west sides of this triangle are perched on the rim of the escarpment, above Estacada Wash, some 50 meters below. Twenty-five structures or areas in Roomblock V were excavated by Nelson and Dutton, and can still be observed from surface features. We estimate that the roomblock in total contained about 50 to 60 surface rooms, one or two of which have evidence of being two-storried. One structure, described by Dr. Dutton as a "tower" is beyond the probable outside wall of the north roomblock. Only one structure, described as "Kiva XX",[1] may have evidence that it was a kiva, but we could not find the Girl Scout excavation notebook. A drawing shows one curved wall and two straight walls at a 90^{o} angle on the plaza side of an above-ground, average-sized structure, which is otherwise embedded within the east roomblock. If this structure is not a kiva, then there is no evidence of any communal architecture within or associated with the Plaza V area, the only part of the Pueblo Largo in existence for about the first hundred years of the pueblo.

Notes: Introduction to Plaza V:

1. This report refers to this room as "Kiva XX" to be consistent with the Girl Scout notebooks and Dutton's articles. However it seems apparent that the room may have been a habitation room, and not ceremonial.

PLAZA V - SOUTH ROOMBLOCK, EASTERN SECTION

Plaza V's south roomblock is a linear, northeast-southwest trending series of rooms that form the southern boundary of Plaza V. Immediately to the southeast is the edge of the promontory. Nelson excavated a room (N3) at the southwestern end of the block, while the Dirty Diggers completely or partially excavated 13 rooms in the south roomblock. At least 6 rooms were not excavated; there may be more. The vast majority of Dutton's work was focused on this block of rooms. The roomblock is approximately 55 m long and varies in width. In places, it is clear that the roomblock is three rooms deep; in some places, it appears to be only one or two rooms deep because of the topography of the promontory or mesa. The edge of the mesa is only 2 m from the back of the roomblock. Access to the mesa edge is through a passage at the northeast end of the roomblock that Dutton originally identified as Room 8. The roomblock contains approximately 20 rooms, including a room with a curved corner and a flue that Dutton identified as a plaza kiva (Kiva XX). According to the field notes, there are two rooms with unusual shapes; Room 5, which is an irregular pentagon and Room 13, a structure that appears to have seven sides of different lengths.[1] Of the 13 excavated rooms, 9 produced cutting or near-cutting dates. They range from the earliest date in the pueblo (Kiva XX, 1230v) to a date in the third decade of the 15th century (Room V-24, 1426r) that falls approximately 15 years before the last date we have for the site (North of Nelson's IV-1, 1439+r).

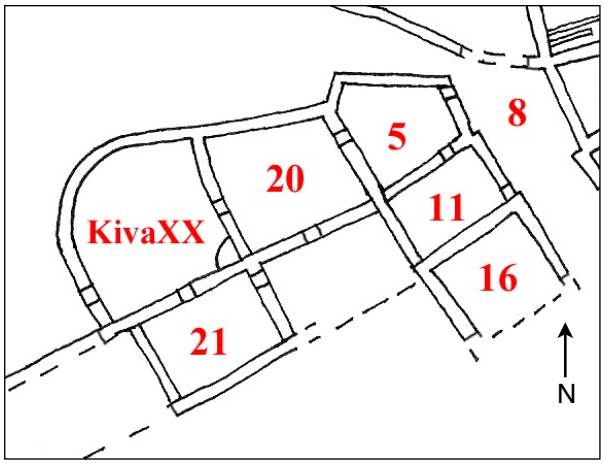


Figure 33. Plaza V South Roomblock, eastern section

Figure 34. View of Plaza V South Roomblock during excavation in 1956. Angled wall at left is Room V-5. The long wall fronts the Plaza forming the north walls of rooms V-20 and Kiva XX. (Dutton collection, MIAC/LOA , Inventory #2-8-31)

Room V-5

Room V-5 is a five-sided room in the southern roomblock of Plaza V. It fronts the plaza and is located in the northeastern corner of the roomblock. Its northeastern wall forms part of the southwestern wall of the passageway from the plaza to the mesa's edge. Excavation of this room commenced in 1952 and continued through 1956 (LOA 95PLE 006, LOA 95PLE.014, 95PLE.015). Room 5 shares its southwest wall with Room 20 and its southeast wall with Room 11. Features consist of three sealed doorways. We typed 1,453 sherds from room fill and 295 met our criteria for datable ceramic types. The stratigraphy of the room fill is problematic. The glazewares do not appear until the lower four levels (9-12), a reverse of what would be expected. The ceramic assemblage is notable for the relatively high proportion of non-local types (23% of datable ceramic types and 5% of all the ceramics). Black-on-white types account for 63.6% versus 36.4% glazewares. Ten dates in the late Coalition Period range from 1287 +rB to 1322+b. There is also one Classic Period date (1435v). It appears that the room was built around 1300, with some repairs in the 1320s. The dates from this room are derived from "wood beams and represent construction dates" (Smiley, Stubbs, and Bannister 1953:25). There is only one date after 1336vv, which is 1435v; not enough evidence to indicate either a continuous occupation, or a later re-occupation.

There is no information in the field notes on file at the LOA that would help to explain the irregular pentagonal shape of this room. The east wall is part of the wall forming V-8, a probable passageway between the plaza and the area south of the roomblock, is 1.5 m long. The southeast wall that is shared with Room V-11 is 2.4 m long. The southwest wall, which is also Room V-20's northeast wall, is 2.1 m long. The short, northwest wall, which forms part of the plaza's southern border, is 0.4 m long; and the northeast wall that also borders the plaza, is 2.3 m long. The floor area of the room is approximately 5.3 m^2. The average wall height, as measured in the room corners, was 1.1 m. Beams from roof fall were concentrated in the area from the floor to 0.3 m above the flagstone floor.

Features in the room consist of two, possibly three, doorways. The excavators describe them as "filled" and it is unclear whether this means filled with rubble from the adjoining room, or sealed with masonry. One is located in the northeast corner of the northeast wall and presumably opened into the passageway. The opening is 0.5 m wide and located 0.4 m above the floor. A filled door in the southeast wall opened to Room V-11 (no metrics), and a third door, in the southwest wall led to Room V-20. The excavators described a beam that extended into the doorway of Room V-20 and yielded a 1275+v date. There is no reported information to suggest that this was a two-story room.

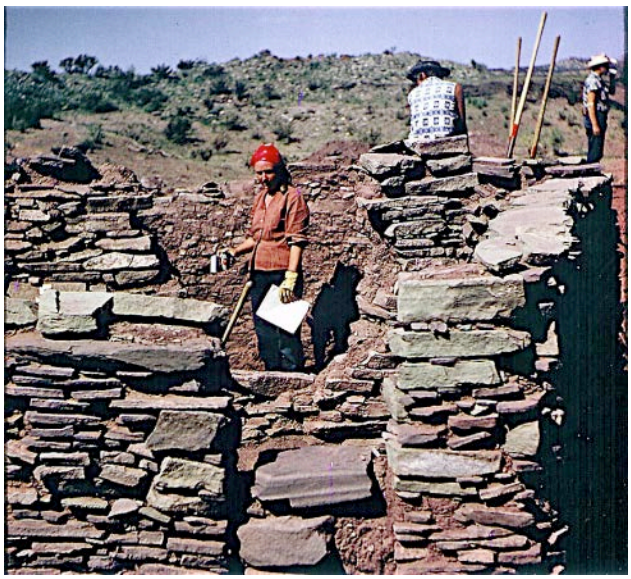


Figure 35. View from V-8 corridor into room V-5. The filled door opening between is visible. Stein and Martin photo, 1955.

The field notes do not specify the levels where artifacts were located. In some instances, the depth from the top of a wall is included. The following brief discussion of the non-ceramic artifacts in the fill has to be taken as a general description, until the floor level is reached. It

Figure 36. Room V5 showing opening in southeast wall leading to Room V11, during excavation in 1956.
(Dutton collection, MIAC/ LOA , Cat. # E4-020, B. Bauer photo.)

appears that throughout the room fill the excavators encountered burned and unburned adobe fragments as well as burned and unburned wood fragments and architectural wood. Several human bones were noted in the fill. Charred corn was also present, along with stone milling tools, bone tools, axes, hammerstones, and projectile points. The artifacts in association with the floor included, animal bones, pieces of mica, obsidian and chalcedony, a metate fragment, mano fragments, and lumps of clay (as opposed to adobe). Although there was no formal hearth in this room, the floor contained an ash lens and with a partial utility ware vessel.

The 12 excavation levels represented in the ceramic assemblage do not display a clear stratigraphic pattern. Using the criteria for datable ceramic types, the room has the second highest proportion (18%) of non-local types. This can be attributed to the 38 Wiyo sherds from the Tewa Basin. In addition, the assemblage included a single Saint Johns Black-on-red, and three Chupadero Black-on-white. Ceramics from the north consist of 38 Wiyo Black-on-white (AD 1300-1400) and nine Biscuit A sherds (AD 1375-1450). The floor assemblage is a mixture of a few early glazewares, local black-and-white – Galisteo and Santa Fe Black-on-white – along with two Tewa Basin types, Wiyo Black-on-white, and Biscuit A. This is not a surprising mix of types for a room in an area of the plaza that was constructed at the end of the Coalition Period and appears to have continued in use for several decades in the 14th century.

Room V-11

Excavation of this room began at the end of the 1954 field season and was completed in 1955 (LOA 95PLE.012, LOA 95PLE.020). The room shares its southeast wall with Room 16. Its northwest wall is also the southeast wall of Room V-5. To the northeast is the V-8 passageway that connects the plaza with the edge of the mesa. The southwest wall of the room is also the northeast wall of an unexcavated and unnumbered room to the southwest. This is one of the few rooms where field notes make it clear that the

Figure 37. Room V16 left, Room V11 right. View looking southwest along the Plaza V south roomblock. Author's photo, March 2008.

excavators screened the fill.[2] Features in this room include viga sockets, a sealed doorway, and four upright flagstones of unknown function set in adobe. Chronometric dating is limited to two dates (AD 1298r and 1421v), despite the fact that 75 samples from this room were sent to the LTRR. The majority of samples were small, undatable charcoal fragments rather than architectural wood. We sorted 2,232 sherds from 13 of the 14 excavation levels; level 11 is either missing from the LOA collection or the level did not contain ceramics. Datable ceramic types amounted to 501 (22.4% of all sherds), ranging from black-on-white carbon paint types to the Biscuits A and B. There were 290 Glaze A, 45 Glaze B, and 2 Glaze C sherds. The types appear to be thoroughly mixed, with the majority of the latest sherds (Largo Glaze-on-yellow and Espinosa Glaze/polychrome) in the lowest three excavations levels. Thus this collection may have been excavated from an adjacent room and dumped into Room V-11 in antiquity.

The room is rectangular, with abutted rather than bonded cross-walls. Butted walls are displayed on the Roomblock V map. (Figure 33) Features include a doorway and a small sealed opening, viga sockets, and four upright sandstone slabs. The floor is flagstone, suggesting this room functioned as a storage room at one time. The southeast and northwest walls are 2.5 m long. The southwest wall is 2.2 m long and the northeast wall is 2.0 m long. The floor area is 5.3 m^2. Standing wall heights varied from 1.0 m in the southwest corner to 1.9 m in the southeast corner. The sealed door in the northwest wall may have opened into Room V-5 at one time. It measures 0.6 m wide and 1.4 m high. The small, sealed opening in the northeast wall is 0.4 m wide and 0.4 m high and opened into the V-8 passageway. An unknown number of circular holes in the northeast and southwest walls, with diameters that ranged from 0.2 m to 0.6 m were identified as viga sockets. At level 10, the excavators encountered four upright sandstone slabs leaning against the southwest wall and embedded in burned adobe. There are no dimensions for this feature of unknown function.

Fill in this room is artifact-rich, perhaps in part due to the fact that the excavators screened the fill rather than picked through it with trowels. Artifacts extended throughout the fill and were particularly numerous below level 9. Human remains were located 0.30 m below the surface and animal bones were encountered throughout. Evidence of possible burning consists of numerous chunks of burned adobe and burned corn. The fill also contained sherds, bone beads, burned and unburned wood fragments and domestic tools, including bone awls, projectile points, hammerstones, and numerous mano fragments.

The 501 datable ceramics from the room fill are dominated by Glaze A (58%), primarily Cieneguilla Glaze-on-yellow. Eleven percent of the sherds are local black-on-white types and 21% are non-local ceramics from the Tewa Basin. Glaze B (n=45) is also present (9%) and there is a trace amount of Glaze C (<1%). Glazewares in total, including undatable, amount to 78.1% versus 21.9% black-on-white. The two tree-ring dates, one from the Coalition Period (1298r), and the other from the Classic Period (1421v) bracket the ceramic dates and fit well with the temporal overlap between Galisteo Black-on-white (1300-1400) and Cieneguilla Glaze-on-yellow (1325-1425). Room V-11 had a steady progression of vv tree ring dates; 1298, 1332, 1345, 1365, 1375, 1376, 1386, 1391, 1400, 1410, 1430, and the single 1421v. This likely indicated that the room was constructed early, along with Kiva XX, and rooms V-5, V-20, and V-21.

Figure 38. Room V-16 showing flagstone floor and remnants of adobe plastered wall. Each room was marked with white numbers during the excavation. (MIAC/LOA Cat. # Q4-068)

Room V-16

Room V-16 is located in the southeast corner of the south roomblock with the mesa edge to the southeast. The room was excavated in 1955 (LOA 95 PLE.020 and 95 PLE.026). The northeast wall of the room forms a portion of the southeast wall of the passageway that connects the plaza with the mesa's edge. The northwest wall is shared with Room V-11. There does not appear to be a room to the southwest, although additional excavation work might uncover a room or an outdoor work area. The room's southeast wall, the wall that faced the mesa edge, has collapsed. There are five tree-ring dates from this room, the samples were one 1423+v and four vv dates; 1193, 1199, 1348, and 1392. The ceramic assemblage of 820 sherds yielded 191 datable ceramics.

The field notes contain contradictory information about directional labels. The original wall labels correctly identified the location of north. However, a second hand over wrote some of these labels, using the north arrow on Nelson's map, which is incorrectly placed.[3] Wall lengths indicate a rectilinear room with the following wall lengths, east and west walls 2.1 m, south wall 2.4 m and north wall 2.3 m. The area of the flagstone floor is approximately 5 m^2. A field map included in the notes identifies a sealed door in the southwest corner of the southwest wall (no metrics). We do not know whether this door connected to another room or an outdoor work area similar to the space between Plaza V's rooms V-8 and V-9.

Ceramic cross dating places the ceramic assemblage in the 14th century. The LOA ceramic assemblage for Room V-16 is incomplete; we were unable to locate the sherds from levels four and five. The eight levels that are represented are well mixed with Agua Fria Glaze-on-red or Cieneguilla Glaze-on-yellow appearing in all levels along with Galisteo Black-on-white and/or Santa Fe Black-on-white. When the proportions of the datable ceramic types (n=191) and the datable corrugated utility wares are considered (n=379) together, the assemblage dates to the 14th century. Local black-on-white types constitute 38% of the datable types. The proportion of Glaze A (Agua Fria Glaze-on-red and Cieneguilla Glaze-on-yellow) is also 38%. Twenty Glaze B sherds were present (10%) and Tewa Basin ceramics represent 5% of the datable types. In addition, 96% of the corrugated utility wares are smeared corrugated, which became common around AD 1300 (Wilson et al. 2006:17).

Room V-20

Room V-20 is northeast of Kiva XX and southwest of Room V-5, in the row of rooms that border Plaza V. The Girl Scouts excavated the room during the last week of August 1956. It is one of the last rooms of the last year of the Largo project (LOA 95PLE.024). The field notes are minimal and the ceramic assemblage for the room fill consists of 390 sherds. A sample of 123 sherds met our criteria for datable ceramic types. The two cutting dates, from cross-sections of vigas or latillas, are Coalition Period dates of 1267c and

Figure 39. Left to right: Room V5, V20, Kiva XX with V21 behind, 1956, Photo, Mary Ann Stein and Sue Martin.

1293v. Specimens with vv dates are 1209, 1186, 1270(2), 1272, 1292, 1287, and 1351. The small 390 sherd assemblage is mostly black-on-white, a small proportion of Glaze A and B, and Tewa Basin ceramics. Three floors indicate this room was occupied long enough to warrant repairs. In addition to ceramics and household tools, the excavators recovered human remains from the fill.

Room V-20 was two stories high. The heights of the standing walls and the extent of surviving wall above the viga holes points to a second story. The presence of three floors suggests the room had required repairs, although an extended life is not confirmed by tree-ring dates or the ceramics. Room dimensions indicate this is a slightly irregular rectilinear room. The northeast wall, which is also the southwest wall of Room V-5, is 2.4 m long. The southwest wall, which is the northeast wall of Kiva XX, is 3.2 m long and was 1.8 m high.[4] The southeast wall, which is shared with an unexcavated room to the southeast, is 3.2 m long and stood 1.8 m high at the time of the excavation. The 2.9 m long and 1.9 m high northwest wall fronted Plaza V. The floor area is approximately 8.7 m^2.

Features include three doors, although none opened onto the plaza, and viga sockets. The northeast wall, which has partially collapsed, has evidence of one viga socket and a door to Room V-5. The southwest wall contains an unsealed 0.5 m wide door that connects Room V-20 with Kiva XX and several viga sockets. Corner kivas in the Santa Fe/Galisteo Basin area were entered through the roof. The presence of a connecting door between Kiva XX and Room V-20 would indicate that at some time the purpose of Kiva XX changed from religious to secular activities. Another unsealed door is located in the southeast wall. This door leads to an unexcavated room to the southeast that is situated between rooms 11 and 21. The height of the surviving walls in relation to the placement of the viga sockets in the northeast and southeast walls, suggests the room had a second story; preserved walls extend 0.5 - 0.6 m above the sockets.

The excavators report that the room had three floors. The first two are described as rough and uneven, while the lower floor is smooth and even, and in some places bedrock. The distance between floors is approximately 0.3 m. There is no information about whether there were artifacts sealed between these floors nor is there documentation that clearly ties the lower excavation levels to the floor fill.

The datable ceramics constitute a small sample of 76 sherds. Black-on-white, including Tewa Black-on-white, is the predominant type representing 85% of the datable ceramics in the room fill, 8% of the ceramics are Tewa Basin types, while Glaze A is 6% and 1% are Glaze B. The early tree-ring dates and the large amount of Santa Fe Black-on-white and Galisteo Black-on-white suggest two things; first, this room went out of use relatively early in the life of Plaza V, and second, the residents of the surrounding rooms did not use the abandoned room as a midden.

Room V-21

Figure 40. Room V21 at rear, Kiva XX in front. Author's photo 2008.

Room V-21, a two-storied room, is situated in the group of rooms to the southeast of the rooms that front onto the plaza, Kiva XX, RoomV- 5, and Room V-20. Room V-21 is immediately south of Kiva XX; its northwest wall, is Kiva XX's southeast wall. To the northeast and southwest of Room V-21 are unnumbered and unexcavated rooms. The Girl Scouts excavated the upper (V-21) and lower (V-21a) stories during August of 1956. (LOA 95PLE.024). Because of the partial preservation of the second floor, the field notes include the best description of roof construction in the Largo material. There is no ceramic assemblage for an upper room in the LOA collections.[5] The structure has multiple features and several floors. Regrettably, for a complex structure such as this, the field notes are quite limited.

However, there are 20 cutting or near-cutting dates from architectural wood, that range from 1243v, which is one of the early dates for the site, to a cluster of dates at the end of the Coalition Period (1325r and 1325v). Only 4 of the 20 cutting or near-cutting dates are later than AD 1292.

The dimensions of the ground floor, rectilinear Room V-21a, are approximate because the length of the base of the southeast[6] wall in the field notes map is 4.6 m, while the northwest wall's length is 3.5 m. Neither field sketches nor photographs of the room show this type of irregularity, so we decided to assign the southeast wall a length of 3.4 m. The length of the southwest wall's base is 2.2 m and the length of the northeast wall is 2.0 m. The floor area of the ground floor room is 7.3 m^2. The floor was constructed of adobe laid directly on bedrock.[7] The dimensions of the second story (Room V-21) cannot be determined due to poor preservation. It is possible that this second story was a walled but unroofed work area, or a roofed second story room. It is evident that this second story had had at least two adobe floors.

Features consist of a thermal feature on the second floor and five architectural features on the ground floor. Although neither Dutton nor Nelson reported formal hearths in habitation rooms, Room V-21 is one of several rooms with large ash deposits directly on floors that indicate people did build fires for heat, light, and/or cooking inside their residences. The excavators reported a large ash deposit, covered by unburned architectural wood, along the second story's northwest wall. The remains of the second story were concentrated along this northwest wall, where the preserved height of the masonry was 0.6 m. On the ground floor, the features consisted of a sealed doorway in the northwest wall that connected Room V-21a with Kiva XX, two viga sockets, also in the northwest wall, and two niches in the southeast wall. The door that opens to Kiva XX is 0.5 m wide and 1.6 m tall. The two empty niches in the opposite wall are rectangular and of similar dimensions. The eastern niche measures 11.4 cm x 16.5 cm x 17.8 cm. The western niche is 14.0 cm x 19.1 cm x 17.8 cm. A second door opens into the unexcavated area between V-21 and V-11.

The roof between the first and second stories was relatively well preserved. Below the second adobe floor on the second story was the roof of Room V-21a, which consisted of two layers of flagstone, followed by a thick layer of mixed adobe and rock. This thick layer would have been supported by vigas and contained by latillas. The fill in Room V-21a included numerous beams and latillas. There is no information in the excavation notes that suggests the rooms had burned. All the architectural wood that dated was unburned and described by the LTRR as "rotten" (Warren 1969).

Artifacts in the fill are the domestic tools that are typical of Largo rooms. The second story (Room V-21) artifacts include two complete manos, seven mano fragments, a hammerstone, and several worked sherds. This small assemblage suggests primary refuse deposits related to activities on the second floor that included food processing and preparation. This would be consistent with the presence of the thermal feature. The ground floor artifacts (Room V-21a), which may well include artifacts from the second floor, consist of bone tools, percussion tools (hammerstones), a projectile point, two mauls, and grinding tools, including a complete metate. Because of the presence of a second story, which to some extend would keep the first floor from being used for the disposal of neighbor's secondary refuse, the artifacts in Room V-21a's fill probably reflect the activities of daily living that were carried out on the second story. The only artifact in contact with Room V-21a's floor is a complete mano.

The ceramic tally sheet that Dutton analyzed shows 229 sherds; we found 212. The datable ceramics (n=80) were predominantly Glaze A-types (55%), with a smaller proportion of black-on-white (20.2%). Dutton's notes indicate that Alfred Dittert identified one sherd as Mesa Verde Black-on-white. We do not doubt Dittert's identification, but we cannot confirm it because that sherd could not be identified in the LOA assemblage. The 28 cutting and near-cutting dates are Coalition Period. These samples came from below the roof fall of masonry slabs and adobe. The absence of samples from the upper story means that it cannot be stated with certainty that the first and second floors were built at the same time. Room V-21 could be a later addition. Room V-21a was constructed in the 1240s to 1260s. The six 1320s dates could represent repairs to the existing structure, with or without the addition of a second floor. The preponderance of Glaze A ceramics are inconsistent with 15 of 20 cutting and near cutting dates below 1293 and all eleven vv dates below 1295.

Figure 41. Kiva XX, Bertha Dutton with flagstone floor pieces. Mary Ann Stein photo 1956

Kiva XX

Kiva XX is a surface room in southern roomblock associated with Plaza V. Dutton identified the room as a "corner kiva" (1980:88). The northwest corner of the room, which fronts the plaza, has a curved rather than an angular wall. The excavators did not encounter any other structures in or around the plaza that could be considered kivas; it is very unlikely that, given Dutton's focus on Plaza V, that the excavators would have missed a plaza kiva. Kiva XX is enigmatic because of the missing data that would support Dutton's contention the room is a kiva. Regrettably, there are no field notes in the LOA Archives for Kiva XX. Dutton briefly

describes the structure in her 1980 Journal of the Illinois State Academy of Science (Dutton 1980:85-96) article and includes a photograph of the room's flue or ventilator. There is no supporting photographic evidence of the kinds of floor features, and no mention of a deflector or a bench that are associated with Northern Rio Grande corner kivas. Without these data, one could argue that Kiva XX is a habitation room with a ventilation problem the residents solved by building a flue.

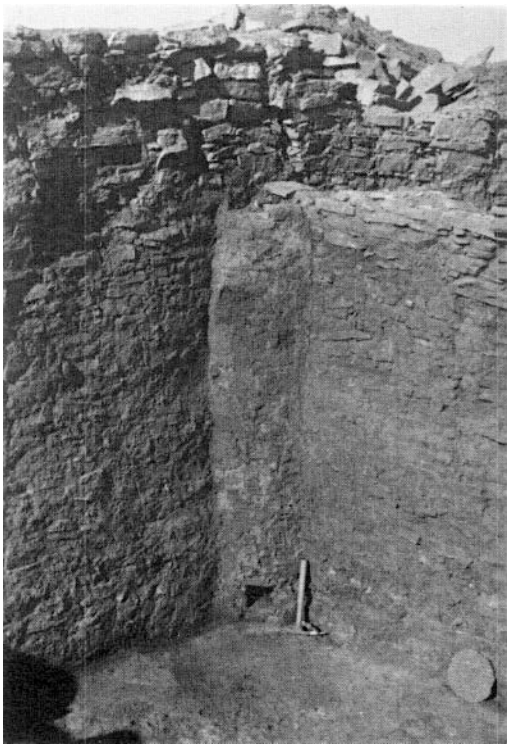


Figure 42. Flue in corner Kiva XX, (Dutton 1980:88)

Corner kivas embedded in roomblocks have been documented at nearby Pindi and Arroyo Hondo (Creamer 1993, Figure 5.4 Creamer 1993, Table 5.1; Stubbs and Stallings 1953:37-40, Figure 33). However, these structures are D-shaped, with only one straight wall. Kiva XX has two straight walls connected at a 90^{o} angle, and a curved corner that borders the plaza; the curve incorporates portions of the northwest and southeast walls. The scanty documentation we were able to locate describes a number of architectural features in the room; not all of the features could be verified. The room has three doors: the one in the northeast wall is shared with Room V-20, the door near the southwest corner of the curved wall opened onto the plaza, and a sealed door in the southeast wall connected to Room V-21. These entrances are at odds with the traditional kiva entrance, whether the structure is a corner or a plaza kiva. In the Northern Rio Grande and elsewhere in the American Southwest, people enter kivas through a hatchway in the roof. The Pindi and Arroyo Hondo corner kivas conform to this traditional architectural template. The ventilators in kivas elswhere are unlike the masonry flue that Dutton described in the southeast corner of Kiva XX. Ventilators associated with hearth complexes are built into east walls; in corner kivas, the ventilator is located in the curved wall that faces the plaza. In contrast, the Kiva XX flue or ventilator shaft is built on the exterior of the corner where the two straight walls meet at a right angle. A Wiyo Black-on-white (AD 1300-1400) bowl, that may have been part of a closing ceremony, rested on top of the flue. (Dutton 1980:88) No bowl of this description has been found in the MIAC collection.

Dutton interprets one feature along the east wall, for which there is no photograph or description, as a turkey pen. She argues this feature was built after the room went out of use as a kiva. Several other structures around Plaza V have evidence of turkey dung in room fill but there are no other mentions of turkey pens. At Pindi and Arroyo Hondo, turkey pens were built along exterior, plaza-facing room walls (Creamer 1993:70-71). Erik Reed's report (see Appendix, this volume) on Largo burials lists two adults and a nine year old interred under the turkey pen in Kiva XX[8]. There are references to additional features in the marginalia of ceramic tally sheets that describe ceramics that were collected from a floor pit and a firepit, but there are no supporting photographs[9] or excavation notes.

Plaza V structures produced a multitude of tree-ring dates, and Kiva XX, with a 1230v date from architectural wood, provides the earliest construction evidence at the pueblo. If this is not "old wood," the date places this structure in the Early Coalition Period. In contrast, the majority of dates for Plaza V fall in

the late Coalition Period. The LTRR data indicate the 1230v sample has a diameter of 3.8 cm, too small to be a beam but large enough for roofing material. The next earliest cutting dates in Plaza V are 1243v and 1245v from beams or latillas in the adjacent Room V-21. There are 749 datable ceramic sherds and 2476 total sherds from Kiva XX. Dutton noted that the dominant datable ceramic types in Kiva XX were black-on-white types that date from 1200 to 1350, which would be consistent with the one tree-ring date. However, the ceramic assemblage in the room fill includes the biscuit wares, Glaze A, a low proportion of Glaze B, along with the Wiyo, Santa Fe, and Galisteo black-on-white noted by Dutton. The high proportion of local black-on-white versus glazewares (54.9% vs. 45%) in the fill indicates Kiva XX was in an area of early occupation. At the floor level, which may have been disturbed by the turkey pen[10] and its residents, Galisteo Black-on-white (1300-1400) constitutes 85% of the datable ceramics. While there are no glazewares on the floor, 5% of the assemblage is Biscuit A, with a production range from 1375 to 1450. In addition to the 1230 date, there are four non-cutting dates (1219v, 1242vv, 1293+v, 1298vv) from beams which suggest roof repairs during the Late Coalition Period. These are the latest obtainable dates for the samples but cannot be treated as cutting or near-cutting dates. Two of these dates are vv-dates[11] that fall near the end of the Late Coalition Period (1219vv and 1242vv). The other beams have non-cutting dates of 1292 +v[12] and 1298 vv. There are also charcoal fragments with vv non-cutting dates mostly in the 1100s and 1200s with four of 1302, 1305, 1332, and 1354. These additional four non-cutting dates, along with the ceramics, suggest that although the room was early, it was repaired and used into the 14th century. Because we do not have the field notes, we cannot know what led Dutton to identify this structure as a kiva. While we give her the benefit of the doubt about the identification of Kiva XX, we hope that in the future, if more Dutton archival material becomes available to researchers, supporting data in the form of field notes and photographs of floor features will be located.

Notes: Plaza V - South Roombock, eastern section:

1. These may be the rooms' true shapes; on the other hand, excavation methods may have obscured walls and corners, particularly in Room V-13 where there was an immense amount of roof fall to work through.
2. In many instances the excavators sorted through fill with trowels. Notes suggest that if small objects were recovered, the excavators switched to screens.
3. Our guess is that some of the Girl Scouts, being well prepared, had compasses and some relied on Nelson's map.
4. This metric is from the Girl Scout excavation, over 50 years ago. Dutton did not back fill and the wall has partially collapsed into the excavated room.
5. We are not handwriting experts but the handwriting on these tally sheets appears to be the same as identifiable Dutton notes from other site reports in the LOA Archives.
6. We have corrected the locational information for walls and features. The excavators were generally following the north arrow on Nelson's map, which is incorrect.
7. It appears that excavation often stopped when a floor was uncovered, so we do not know how much of the Plaza V area is directly on bedrock.
8. Formal burials under a kiva floor would be extremely unusual. Creamer (1993:94-94) notes that the human remains, with and without formal burial, were found in kivas at nearby Arroyo Hondo and at sites in the Rio Chama area. All were in fill or roof fall, none were buried beneath floors.
9. There are photographs of Kiva XX in the LOA Archives, but they do not show floor features.
10. Turkey pens were also noted at Pindi (Stubbs and Stallings 1953:47) and Arroyo Hondo (Creamer 1993:70-71).
11. A "vv" date indicates there is no way to estimate how far the last existing ring is from the true last, outside ring.
12. A "+" prefix to another symbol representing the level of confidence for a date indicates that one or more outside rings may be missing from the sample.

PLAZA V - SOUTH ROOMBLOCK, SOUTHWESTERN SECTION

Room V-17

Room V-17 is in the southwest section of Plaza V's south roomblock. To the northeast of the room are at least two unexcavated and unnumbered rooms. Immediately to the southwest is Room V-14. To the northwest, the room fronts Plaza V. The area to the southeast of the room may contain additional architecture or be an open space. This area terminates at the mesa rim. The Girl Scouts excavated Room V-17 in 1956, the last year of fieldwork for the Dirty Diggers. The LOA Archives contain a brief summary of the excavation, with what appears to be an incomplete list of the artifacts that were assigned catalogue numbers (LOA PLE.026). Wall measurements and locational information are sometimes contradictory in the notes.[1]

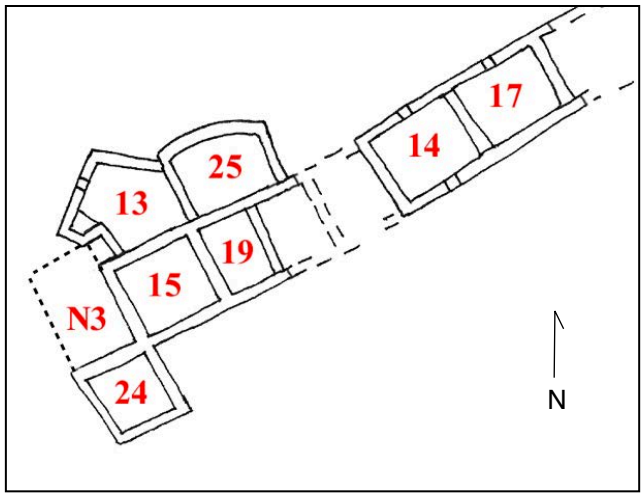


Figure 43. Plaza V South Roomblock, southwestern section.

The ceramic assemblage is small and consists of only 227 sherds. Of these, 31 were datable ceramic types. Levels had been combined at some point, making any attempt at stratigraphy pointless. 81% of the datable types were Glaze A, Cieneguilla, Agua Fria Glaze-on-red, or San Clemente Glaze Polychrome. Fully 89.5% of the datable sherds are glazeware. There were also two Santa Fe Black-on-white sherds and one Galisteo Black-on-white specimen. Tewa Basin ceramics consisted of a single Wiyo Black-on-white and a single Biscuit A sherd. There was also one Glaze B sherd. The single tree-ring date of 1382+B fits well with the dates for the majority of the ceramics.

Room construction is similar to other Largo rooms and consists of sandstone walls mortared with adobe. While the north, south, and west walls appear to have been built with similar, tabular sandstone, the east wall (shared with an unexcavated room to the northeast) is made of larger rocks. The interior of the room appears to have been plastered and the floor is flagstone with adobe mortar. The room is almost square. The walls have the following dimensions: the northwest wall is 2.3 m long, the north east wall is 2.2 m long, the southeast wall is 2.3 m long and the southwest wall measures 2.1 m long.[2] The area of the floor is approximately 5.1 m^2. A possible thermal feature, described as a "well organized [and] localized . . .fire area" (LOA 95PLE.026) was located on the floor. Due to confusion in the notebooks about the location of north, it is not clear which corner contained this possible thermal feature. Yucca and sinew cordage were associated with this feature. A second possible feature is an opening in the northwest wall, which would have led to Plaza V. The excavators describe the opening as "rudely fashioned" and "patched-in." The field sketch does not appear to depict a formal opening. It is possible that the Girl Scouts may have mistaken a place where the masonry had collapsed for a doorway.

Figure 44. Room V-14 foreground, V-17 rear, looking northeast. Author's photo, 2008.

The room produced a single, near-cutting date 1382+B. The sample is without provenience and it does not appear to be a viga or latilla. The sample that produced the one date (1382+B) cannot be securely identified as structural wood. The 1382+B date is one of only three dates from Plaza V that fall in the second half of the 14th century. Non-cutting vv dates included AD 1228, 1260, 1382, 1387, 1391, and 1418. Descriptions from the field notes and the LTRR report describe architectural wood that was rotten but not burned, which suggests this room did not burn. In all, 24 samples were sent to the LTRR; most were actually small containers filled with charcoal fragments that did not date. This late fourteenth century date may indicate that this room was occupied later than the majority of rooms around Plaza V, but there is not enough evidence to tie the date to a construction episode.

The fill of Room V-17 represents the usual household refuse and includes a distinct area of roof fall. The most common catalogued artifact type was mano fragments. Other artifacts included an antler tool. It was common for the room fill at Largo to yield numerous bone awls and a few objects of personal adornment, but these artifact types are absent from Room V-17.

Room V-14

This room is immediately southwest of Room V-17 and northeast of two unexcavated, unnumbered rooms. Room V-14 fronts Plaza V to the north-northwest. To the southeast is an area that may be open space or unexcavated architecture that ends close to the mesa edge. The excavation took place in 1955 (LOA 95PLE.023 and LOA 95PLE.023). There are no cutting dates from this room. Twenty-four wood samples were sent to the LTRR, including 11 unburned piñon and ponderosa beams and latillas. Only two charcoal fragments produced dates, and these were neither cutting nor near-cutting dates of AD 1166+v v and 1332vv.

This rectilinear masonry room contains three possible features; one, or perhaps two doors, and a possible thermal feature. The excavators used Nelson's incorrect north depicted on his published map, which skews the architectural information. We have corrected for that error. The area of the adobe-covered flagstone floor is approximately 5.1 m^2. At their bases, the northeast wall is 2.3 m long, the southwest wall is 2.0 m, the southeast wall is 2.2 m, and the northwest is 2.3 m. The northeast and southwest walls retained remnants of plaster. The door in the southeast wall that opens to either unexcavated architecture or an open area near the mesa edge, measures 0.7 m x 1.2 m and is situated 0.5 m above the floor. The opening in the northwest wall, which connects the room with Plaza V, is narrower and taller than most Largo doors but is sufficiently wide for people to pass through; it measures 0.3 m x 1.4 m. The labeling of

this feature in the field notes suggests the excavators were not sure what it was. Notes and a map refer to it as an "opening" and a "filled crevasse" but it is not identified as a door. Unlike the door in the southeast wall, this feature is set on the floor rather than elevated a half meter. The field notes identify what may be the remnants of a masonry thermal feature and a comal in the northwest corner of the room. There is no additional information about this possible hearth. Room fill, besides architectural wood from roof fall, contained the usual refuse associated with Largo residences, including charcoal, animal bone, adobe fragments, obsidian flakes, sherds, comals, manos, and hammer stones. Near the floor, if not in contact with the floor, was an unknown amount of turkey dung.

The multiple samples of architectural wood did not date. However, they are described by the LTRR as "rotten", indicating they did not burn. The presence of ponderosa is unusual; the vast majority of Largo samples were piñon, while a small proportion was juniper. The small, undatable charcoal samples may have been associated with hearth cleanouts.

The ceramic assemblage for Room V-14 contains 182 sherds, 87 of which are datable ceramic types. Because there are no cutting or near-cutting tree-ring dates, this small assemblage becomes crucial for assigning a temporal span to the room. The dominant, datable ceramic type is Galisteo Black-on-white (49 sherds or 56%), which conservatively begins in the Galisteo Basin around AD 1300 and ends by AD 1400. Santa Fe Black-on-white (9 sherds), again a conservative estimate, begins around AD 1200 and goes out of production by AD 1350. Fourteen percent or 12 of the datable assemblage is Glaze B Largo and 17 or 20% is Glaze A Cieneguilla or Agua Fria series. The ceramics, dominated by Galisteo Black-on-white, but with a significant amount of Glazeware, suggests the room was occupied during the mid to late fourteenth century, perhaps into the 15th century, based on the presence of the Largo Glaze B glazeware.

Further southwest again, two unexcavated rooms are followed by five adjacent excavated rooms including one dug by Nelson.

Room V-13

This is an irregularly shaped seven-sided room that may have been difficult to excavate and even more difficult to interpret. The Girl Scouts worked in Room V-13 during the summers of 1955 and 1956 (LOA 95PLE.021, 95PLE.023). The room is located at the southwest end of Plaza V's southern roomblock, near a natural causeway that connects the promontory with Roomblock IV and the mesa where the rest of the much later portion of the pueblo is located. This causeway is the only way to reach Plaza V without climbing and scrambling. This is a strategic location, protecting the entrance into the defensive location of the Plaza V area and its surrounding roomblocks. Given the topography of the promontory and the passages into other plaza areas, it is likely that the area to the north/northwest of Room V-13 is a passage from the causeway into Plaza V. Room V-25, a numbered but unexcavated room, is to the northeast of Room V-13; its southwest wall is Room V-13's northeast wall.

The LOA archival material consists primarily of lists of catalogued artifacts and information about the numerous beams that were encountered (some were preserved by Dutton's Girl Scouts with a mixture of gasoline and paraffin). Information about the excavation of the room is limited, which is unfortunate given the structure's non-conforming dimensions. The lack of meaningful excavation levels was

attributed to problems dealing with the abundance of beams and latillas in the fill.[3]

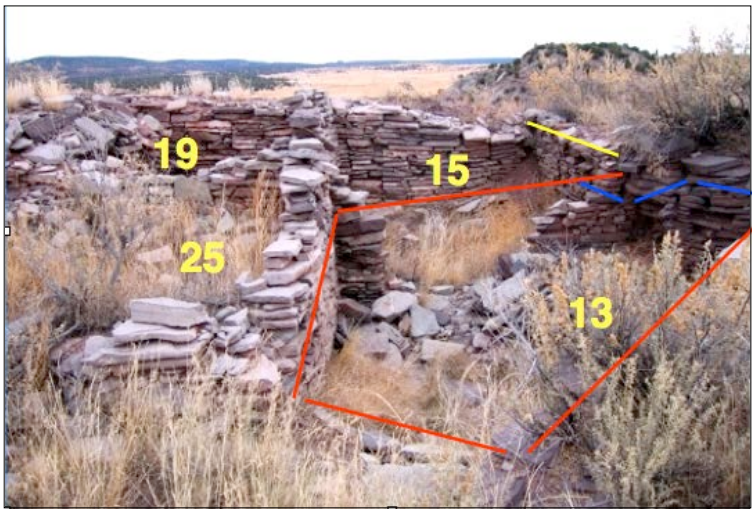


Figure 45. View looking southeast. Blue lines show the wall extension into V13 visible in 1956. Today, the walls have fallen, and the SW wall of V13 (blue) is aligned with the SW wall of V15 (yellow). Authors' photo, 2008.

Figure 46. Room V-13 during excavation in 1956. The extension into the room is clearly visible at top left. Photo by Mary Ann Stein.

Room V-13's metrics are murky because the lengths of the seven walls differ significantly in the 1955 and 1956 field notes and sketch maps; there was also confusion about the location of north. Like the other rooms at the site, Room V-13 was constructed of sandstone slabs and held together by a combination of gravity and adobe mortar. Several wall interiors retained some plaster at the time of the excavation. Notebooks indicate the excavators unknowingly blew through the floor, continuing to dig until they reached bedrock. There is one feature, a partially walled-in door in the room's northwest wall (labeled wall "F" in sketch maps). There is an extension of the room at the southwest end of wall "F" that is 13 cm higher than the bedrock. It is described as containing an indeterminate amount of burned corn and a darkened floor that we think might have been burned. There is nothing to suggest this area was a formal hearth or served a special purpose. Because the notes do not describe the actual excavation, it is unclear whether this extension is part of Room V-13, or a feature that possibly belongs to Nelson's Room 3.

The tree-ring samples from this room are interesting for several reasons. A total of 88 samples were sent to the LTRR.[4] Thirty were dated and twelve of these samples produced cutting or near-cutting dates that clustered tightly between dates of 1297r and 1300v. There was also one later 1324rB date, which is a charcoal fragment, not architectural wood. At least nine of these dates come from structural wood; none had burned. An additional 58 samples did not date. The majority of unburned samples in this undated category also appear to be structural wood, probably latillas rather than beams. Based on this information, it appears Room 13 slowly collapsed and was never burned.

Provenience information for the sherds is limited. Of the 950 sherds, 355 were datable ceramic samples and only 110 can be tied to an excavation level. Apparently the excavators had difficulty with this room

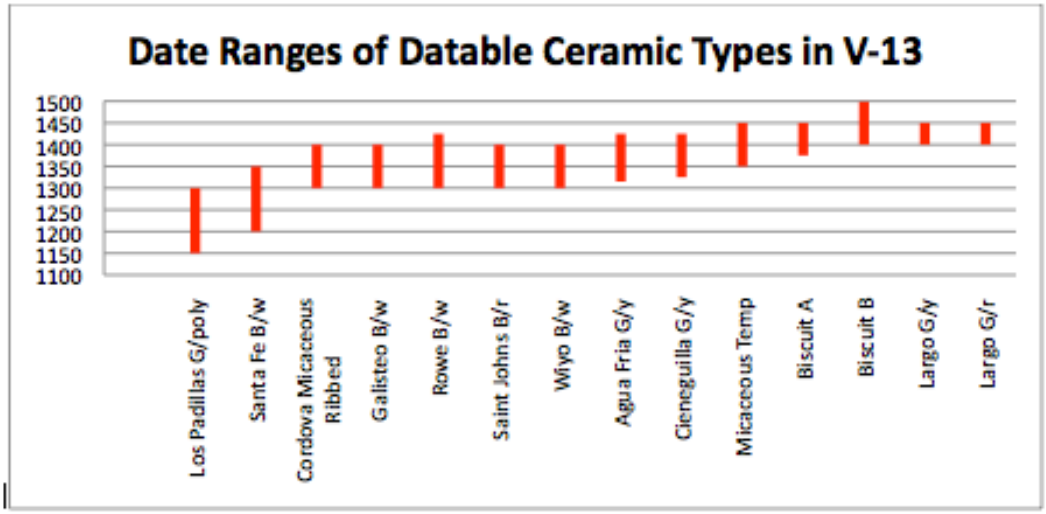


Figure 47. Room V-13 Date Ranges of Datable Ceramic Types

because of the amount of wood they had to pick through as well as the irregular floor (which may have conformed to the bedrock). All the glazeware, which comprises 33% of all datable ceramics was either from surface Level 1 or not provenienced. The vast majority was Glaze A. The remaining four levels are Black-on-white and dominated by 141 Galisteo Black-on-white.

Of the datable 355 sherds, one was St. Johns Black-on-red, 4 were Los Padillas Polychrome, 26 were Santa Fe Black-on-white, 2 were Rowe Black-on-white, 13 were Wiyo Black-on-white, 11 were Biscuit A, 1 was Biscuit B, 141 were Galisteo Black-on-white, 99 were Glaze A, and 18 were Glaze B. Tewa Basin ceramics represent 8% (25) of the datable types. Including indeterminant glazeware sherds, all glazeware accounted for 55.3% versus 44.7% black-on-white. Chronologically, the ceramics, with the dominance of black-on-white types, fit with a room that was constructed around AD 1300 and probably occupied until at least AD 1325 with a continuous occupation or second occupation in the AD 1400s as shown by the Glaze B.

The artifacts reported from room fill suggest this structure may have been utilized as a midden. A variety of domestic artifacts were recovered throughout the fill besides ceramics, including an indeterminate amount of burnt corn, turkey dung, a considerable amount of faunal remains, charcoal and ash (no structure to these deposits was reported), and adobe identified as roof fall. In addition, the fill produced a number of mano fragments, hammer stones, and at least two projectile points. The excavators also recorded five animal heads (unidentified) and a conch shell in the fill of the northwest corner. This might be an offering, but without more information about context and the types of animals represented, we prefer not to speculate.

Room V-15

There is very little information about this room aside from the metrics of the wall lengths. The room is near the southwestern end of Plaza V's southern roomblock. Immediately to the northeast is Room V-19, its southwest wall is Room V-15's northeast wall. To the northwest is Room V-13. Part of Room 1V-3's southeast wall is Room V-15's northwest wall. Nelson's Room 3 is to the southwest. The area to the

southeast of Room V-15 is unexcavated so it is not known whether this area contains additional structures. However, there are no surface manifestation of buildings between Room V-15 and the southeast edge of the promontory. We found no ceramics in the collection from Room V-15.

It is interesting to note that in the single page[5] of field notes we have, the excavator correctly oriented the room to north but someone crossed out these directions and wrote in Nelson's incorrect orientation. The room is almost square and the wall lengths are: the northeast wall 2.5 m, the southeast wall 2.6 m, the southwest 2.5 m, and the northwest wall 2.6 m long. The area of the room is 6.5 m^2. No ceramics were located that would help date the structure. The single near-cutting date of 1426+B date was derived by a charcoal fragment with no level information. It is late for the Plaza V area. There is another 1426+B date from the surface, or near the surface, of Room V-24, which is just to the southwest of Room V-15. The only later date around Plaza V is a 1435v date from a charcoal fragment with no level, from Room V-5. Other 1426 dates (or later) are from rooms around Plaza A and B, to the southwest of the promontory.

Room V-19

This room is located in the southwestern section of Plaza V's southern roomblock. To the northeast are two unexcavated rooms. Room V-19's northeast wall is shared with one of these rooms. To the southeast is an unexcavated and untested area that may be an open space or may include additional architecture. Beyond this area is the southeast edge of the promontory. Room V-19 shares its southwest wall with Room 15, while its northwest wall forms part of Room V-25's southeast wall. The room was excavated in 1956, the final year of the Dirty Diggers' project (LOA 95 PLE.028). As with many of the other rooms in Plaza V, the excavators relied on Nelson's incorrect north designation; this text corrects that error[6]. Field notes and the LTRR material indicate that no wood samples from Room 19 were sent for dating.

The room appears to have been excavated in 12 levels of about 15 cm each. There is a single feature, a niche in the southwest wall[7]. Room V-19 is one of the smallest rooms in the pueblo and roughly rectangular. The northeastern cross wall is abutted rather than bonded to the two northeast-southwest and trending walls. Measurements, taken from the bases of the walls, are: the northeast wall is 2.1 m long, the southeast is 1.4 m, the southwest wall is 2.3 m and the northwest wall is 1.6 m long. The floor is adobe and approximately 3.3 m^2. Although there are no wood samples to confirm that the room burned, the excavators describe the northwest half of the southwest wall as burned. The absence of any references to beams in the field notes suggests that the architectural wood was recycled for use in another structure. Human remains consisting of unidentified bones and a jaw fragment with a tooth were found in Level 7. These remains are not identified in Reed's analysis of Largo burials, and the absence of a catalogue number in the field notes indicates the remains stayed at the site. The presence of turkey dung in Levels 9 and 10 is evidence that after the room went out of use as a habitation, it was repurposed as a turkey pen.

Aside from the absence of structural wood, the artifacts are typical room fill. The excavators uncovered wall fall, charcoal fragments, animal bones, sherds, corn, and ground stone implements. Ceramics, which total 839 sherds, with 219 datable ceramic samples, are overwhelmingly Glaze A, dating from approximately AD 1315 to AD 1425. In the assemblage of datable ceramic types, 71% are Glaze A types. The proportion of Tewa Basin ceramics is 20% and there is a small amount of Glaze B (6) and C (2), along with one Santa Fe and 11 Galisteo Black-on-white samples. For dating purposes, since there are no

chronometric dates, the best that can be determined is that the room was occupied sometime in the 14th century. Given the paucity of black-on-white types, it is likely occupation was in the second half of the 1300s. The absence of black-on-white on the floor and the presence of Glaze A (55%) and Tewa Basin ceramics (45%) on the floor supports this chronology.

Room V-24

This is a rectilinear room located at the rim side of the southwest end of Plaza V's southern roomblock. Immediately northwest is Nelson's Room 3. There does not appear to be any architecture to the northeast or the southwest and thus the room projects outside of the line of the southern roomblock stretching east and north on this side of the triangle which makes up the roomblocks surrounding Plaza V. The edge of the mesa is near the southeast wall of the room. Room V-24 was excavated during the summer of 1956. Information in the LOA is limited to four pages of field notes, including a sketch of the interior walls (LOA 95PLE.028). The room was excavated in two 50 cm levels because of the limited number of artifacts in the fill. The ceramic assemblage consists of only 129 sherds; 31 of the samples met our criteria for datable ceramic types. The one chronometric date of 1426r comes from a fragment of charcoal rather than architectural wood recovered in Level 1.

The room has no features. The walls were collapsing when the Girl Scouts worked in the room, which may have obliterated evidence of wall features such as doors and niches. The northwest and southeast walls are 2.6 m long, the southwest wall is 2.2 m, and the northeast wall is 2.3 m. The area of the floor is 6.0 m^2. In contrast to the other floors in the pueblo, which are either flagstone or adobe, or a combination of both, this floor is unmodified bedrock.

The majority of the artifacts were recovered in the first 50 cm of fill, although there were animal bones, charcoal, sherds, and ashes in both levels. Absent from the fill were the usual flaked and ground stone tools. Of the 129 sherds in the fill, 31 were datable ceramic types. 51% (n=16) are Glaze A sherds (Agua Fria Glaze-on-red (AD 1315 to 1425) and Cieneguilla Glaze-on-yellow (AD 1325-1425) and 29% (n=9) are biscuit Tewa Basin ceramics (8 Biscuit A, (AD 1375 to 1450) and 1 Biscuit B (AD 1400 to 1500). The assemblage includes two Galisteo Black-on-white sherds (AD 1300-1400) and two Santa Fe Black-on-white sherds. The ceramics indicate the room was occupied in the mid to late 1400s. The single tree-ring date of 1426r falls within the general temporal range of the ceramic types in the fill, however 1426 is the second latest date obtained from the Plaza V area and it would be expected that Glaze B types would appear in the fill. Its Level 1 location suggests this was not architectural wood but may have been refuse from elsewhere on the site.

With the late date, AD 1426, preponderance of glazeware, and location outside of the line of rooms on this side of Plaza, there is the possibility that Room V-24 was constructed during the second occupation of the Plaza V area, but there is too little data to do anything more than ponder this possibility.

Room V-25

V-25 in an interior room facing Plaza V, near the presumed opening from Plaza V to a causeway and towards the northwest to what was much later Plaza B. One of the last cartons we analyzed produced our

first ceramics from Room V-25. There were 144 sherds, of which 43 were datable; 3 Santa Fe Black-on-white, 8 Galisteo Black-on-white, 1 Wiyo Black-on-white, 4 Biscuit A, 7 Biscuit B, 24 Glaze A, 1 Glaze B, 45 indeterminate glaze, 25 slipped unpainted, 1 micaceous, 1 plain grayware, and 24 smeared corrugated. There were no tree-ring samples. We did not look for excavators' notebooks.

Nelson's Room 3

The third room Nelson excavated in Plaza V is situated at the end of the southwestern end of the southern roomblock. To the northwest there may be another room whose architecture became conflated with Room V-13 when it was excavated by the Girl Scouts. Because of the confusion in directions, it is possible that Nelson's room 3 may share a wall or a feature with Room V-13. To the southwest there does not appear to be any additional architecture, but this picture might change if the site were to be re-excavated. The southwest wall of Room V-15 is the northeast wall of Nelson's Room 3.

There do not appear to be any features in this room. The average wall height when Nelson worked here was 0.8 m. Entrances may have been lost in the general collapse of the walls. Wall lengths are: northeast wall 2.1 m, southeast wall 3.5 m, southwest wall 1.9 m and the northwest wall 3.8 m. Nelson noted a stone axe on the floor, which was catalogued and probably shipped to the Museum of Natural History. In addition, the notes list a sooted corrugated pot, some red sherds, and a gray bowl with an indistinct painted pattern; however these items were not catalogued.

Notes: Plaza V - South Roomblock, southwestern section:

1. This is another room where the project seemed to have trouble locating north. Someone who reviewed the field notes went on the assumption that the north arrow on Nelson's map was correct, while someone else working in the field and writing the notes appears to have had an actual compass.
2. We selected these dimensions as likely to be the most accurate, primarily because they occurred twice in the field notes (LOA Archives 95 PLE.026).
3. Clearly, there was a lot of wood in the fill. Ninety-three samples were sent to the LTRR but only 12 produced cutting or near-cutting dates. Another interpretation is that the crew, including whoever supervised the work, did not have enough experience to excavate this room properly.
4. Twenty five of these samples were bags with multiple specimens of small charcoal fragments; none of these samples dated.
5. This page is part of some diggers' field notes. The protocol was that the notes went with the girl, like a diary. When she moved from one location to another, she recorded the new location in the same diary. At times, the girl did not even begin a new page. The notes followed the excavator rather than staying with the room that was being excavated. It made untangling excavation notes extremely difficult.
6. The wall identified as the north wall is the northwest wall. The east wall is actually the southeast wall. The south wall is the southwest wall, and the west wall is the northwest wall.
7. There is no additional information about this feature.

PLAZA V - WEST ROOMBLOCK

This northeast-southwest trending roomblock, which we call the west roomblock, received minimal attention from Dutton compared to the extensive work done in the southern roomblock. The Girl Scouts excavated three rooms, V-10, V-12, V-18, and they partially excavated a fourth room with no name, which we will call "Room Y" after the Y-level that led the excavators to conclude there was another, earlier room partially below Room 18. Nelson also excavated a room in this block, N-1, which is immediately to the northeast of V-18. There is also architectural evidence that Room V-12 is either built on top of an earlier room or represented a significant remodeling episode and the construction of a second story. We cannot be certain of the scope of this roomblock but it appears that rooms N-1, V-12, and V-18 were back rooms, while Room V-10 represents the row of unexcavated rooms that fronted Plaza V. Some walls are abutted rather than bonded. Our site map indicates the walls that were clearly identified in the notebooks. This west roomblock was probably a ladder-like construction with two continuous and parallel northeast-south west walls built first and then cross-walls put in to delineate individual rooms.

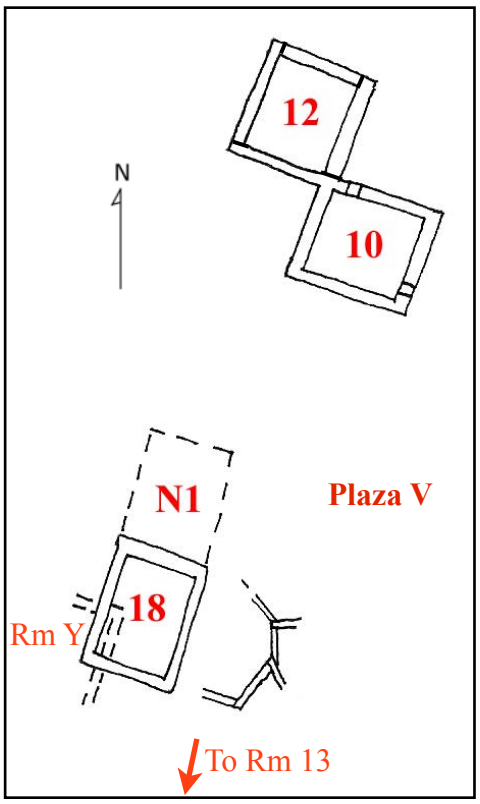


Figure 48. Map of Plaza V West Roomblock.

We assume that the unexcavated area between Rooms V-10 and V-12 and the cluster that contains Room Y, N-1 and V-18 contains additional rooms. We also assume that somewhere between Rooms V-13 and V-18 there was a passage way that led to the natural causeway which connects the promontory with the rest of the mesa where the majority of Pueblo Largo's roomblocks and plazas are located. The majority of cutting or near-cutting dates cluster around AD 1300; two dates are close to the middle of the 13th century, and four fall in middle of the 14th century, and one falls in the last half of the 14th century. The ceramics are primarily Galisteo and Santa Fe Black-on-white and Glaze A.

Room V-10

Room V-10 is located southeast of Room V-12, on the plaza side of the West Roomblock. To the northwest is Room 12, which was also excavated by Dutton. There is at least one unexcavated room to the northeast and more architecture to the southwest. A door in the southeast wall of the room may open into the plaza, another room, or a roofed work area. The Girl Scouts excavated this room in 1955 (LOA 95PLE.006 and 95 PLE.016). A total of 494 sherds were recovered but this does not represent all the room's ceramics; levels 2, 3, and 5 could not be located in the ARC collection. 93 sherds met our criteria for datable ceramic types. For dating purposes, the room produced two cutting dates of AD 1328rB and 1344++B from charcoal fragments that cannot be securely identified as structural wood.

This is a masonry room with a flagstone floor. The excavators estimated the average dimensions of a building stone were 15.2 cm wide by 30.5 cm long. Small stones were used for chinking and interior walls were plastered. Wall dimensions indicate this room was almost square. The northeast wall is 2.4 m long, the southeast wall is 2.5 m, the southwest wall measures 2.3 m and the northwest wall is 2.5 m. The area of the floor is 6.0 m^2. Seven flagstones were on the floor but the excavators did not consider them to be features. The speed with which the excavators moved through the fill, (the floor was located on day two) indicates there was minimal wall fall, and perhaps no roof fall to slow down the diggers. There is no report of sooted or burned walls. Room fill was consistent with the activities of daily living. There was ash, animal bone, ceramics, charcoal, and corn, but the amounts were not given in the field notes. The majority of the artifacts are tools such as pot fragments, manos, polishing stones, hammerstones, and awls. The fill also contained several bone beads.

The 93 datable ceramics in the Room V-10 assemblage (levels 2, 3, and 5 are missing) are dominated by Tewa Basin types (49.5%), primarily Biscuit A[1] (AD 1375-1450). Glaze A ceramics are next, representing 37.6% of the datable types. Non-Tewa black-on-white comprises 10.7% of the datable types, with a smattering of Santa Fe, Galisteo, and Rowe.

Room V-12

Room V-12 is immediately northwest of Room V-10. We assume there are additional rooms to the northeast and southwest, but they are unexcavated. Room V-12 would have been a backroom, with the unexcavated room to the northeast probably fronting Plaza V. This room is notable for the amount of unburned, datable architectural wood the excavators encountered throughout the fill, and for the fact that this is one of the few rooms where there are multiple lines of evidence that the residents built Room V-12 upon an earlier room. What we do not know is whether the lower story was razed before an upper was built or whether it continued in use as a two story structure. There are three sets of human remains in the lower room.[2] The data for this room include copious field notes from the 1955 and 1956 seasons (LOA PLE095.022). We have 13 of the 14 levels[3] for the ceramics (although the excavators note they never seemed to reach the floor of the bottom story). The ceramic assemblage consists of 384 sherds, 139 of which meet our criteria for datable ceramic types. Of these 130, 93% are Black-on-white, dominated by 79 Galisteo Black-on-white and 38 Santa Fe Black-on-white. Only 8 Glaze A sherds were recorded. Based on the distribution of wood samples and the field sketches from 1956, it appears that Level 7 represented the floor of the second story and the roof of the lower story. The room produced 8 cutting or near-cutting dates ranging from AD

Figure 49. Room V-12 center foreground. Girl Scouts working betwen V-13 and V-18 at back of pickup truck in 1956. Photo by Mary Ann Stein.

1268v to 1396v. Aside from the single late-14th century date, the dates cluster in the second half of the 13th century with four from 1302v. Non-cutting vv dates include 1315, 1327, 1346, and 1372.

The only features in the room are four viga sockets. However, the underlying structure upon which Room V-12 was built was not excavated to its floor. Walls are masonry with adobe mortar and chinking. Wall lengths are: northeast wall, 2.4 m; southeast wall, 2.3 m; southwest wall, 2.6 m and northwest wall, 2.7 m. The absence of bonding between any walls and the presence of southwest and the northeast cross-walls that continue beyond the room's southeast and northwest walls is evidence that multiple rooms were built in a single episode in this portion of the roomblock. The four viga holes are located in the west wall, at a point where the masonry style shifts from what the excavators described as "thin" to "thick" stones (LOA PLE95.022). Below the point where the vigas are situated, the masonry consists of large, roughly shaped rocks. In contrast, above the vigas the masonry is thin, tabular, regular, and relatively uniform in size and shape. A similar pattern is present in the south wall. Parallel to the east wall is a second wall that is 2.1 m long, 0.4 m, wide and standing 1.7 m high. The east wall, built on top of an old room, may have been unstable, and the additional wall represented an effort to prevent this side of the building from collapsing.

There are several lines of evidence in support of the hypothesis that Room V-12 was built on top of an earlier room. The change in masonry style suggests the lower room was constructed at a different time by different builders with different ideas of what constituted an acceptable masonry wall. The viga holes would represent the roof of this early room. The room may have been two-stories high based on the presence of four horizontal viga holes in the west wall. These holes were located 2.44 meters from the top of the northwest corner of the room. The floor of this room was not reached prior to the end of this last excavation season, but continued below the viga holes by approximately 0.53 meters.

The notebook states that the four walls of this room show different methods of masonry work. The lower part of the south and west walls were made of thicker, rough stones and not well worked. The upper part of the south wall and above the viga holes on the west wall were made of thin, well-worked stone. The east wall was in poor condition with portions of it caved-in. A second wall 0.4 m wide ran parallel to the east wall at 1.65 m below the top of the wall.

The north wall was noted as leaning inward from the pressure of the hill on the north side and two-thirds of the bottom of the wall was built on fill, and this wall abuts both the east and west walls. The east wall and west walls abut the south wall. A possible caved-in doorway on the east wall was located 0.91 meters from the north wall.

The notes also suggests three periods of occupation, with no data to support this conclusion, except for an unusual comment that the viga holes on the west wall "indicate an earlier period of occupation". A large amount of wood was identified and marked by letters A through M with a rough map of the locations.

A burial was located partially under the north wall at approximately the same depth as the viga holes on the west wall. Single sherds of St. Johns Polychrome and corrugated were under the burial.

Nelson's Room 1 (N-1)

This room (N-1) is immediately northeast of Dutton's Room V-18. Its southwest wall is also the northeast wall of Room V-18. The excavators of Room 18 dumped their backfill in this room. The alignment of Room V-18, N-1, and V-12 are along the same axis and probably represent the back rooms of a two room-deep roomblock. The north wall is 1.6 m long, the opposing south wall is 1.8 m, while the east wall is 3.6 m and the west wall is 3.4 m. The area of the floor is approximately 6.0 m^2. It appears there were no features in this room. Nelson was very parsimonious in his enumeration of artifacts. He listed three manos, a pot lid fragment, some worked quartz, a core, a worn stone axe, and six sherds that appear to be from a black-on-yellow glazeware bowl.

Room Y

This is an intriguing room for which we have little information because the Girl Scouts only excavated a small portion of it. Interpreting the scant information we have about Room Y is particularly difficult because the notes for this room and Room V-18 are narratives written after the fact rather than actual field notebooks. Whether these descriptions were done from memory or the actual field notes is not specified. Its presence suggests there are early, unexcavated rooms in the vicinity of the west roomblock. The room was identified as a bench in 1955 and partially excavated in 1956 (LOA 95PLE.026). The remnants of the room's northeast and southeast walls were located approximately 20.3 cm below the floor of Room V-18. Half a meter of Room Y's northeast corner is under the southwest corner of V-18. The small portion of the room that was excavated did not contain any doorways. And this appears to be the portion of the room the Girl Scouts excavated. The floor may have been comprised of sandstone slabs. The uncovered portion of the northeast wall is 0.5 m long and the partial southeast wall is 1.8 m long. These wall fragments appear to be oriented along the same axis as the walls of Room V-18.

Due to the partial superpositioning, it is evident that Room Y is earlier than Room V-18. There is conflicting information about whether any architectural wood was present. If there was no wood, this suggests the beams and latillas were removed and reused elsewhere. None of the 28 wood samples sent to the LTRR distinguish between Room V-18 and this structure. Dating is not possible because in addition to lacking wood samples, the ceramics have become mixed with those of Room V-18. Although the narrative states that the sherds from Room Y and V-18 were kept separate, by the time we looked at this assemblage, they had been merged and could not help us with room chronology. The description of the Room Y excavation results states that the painted ceramics from below the floor of Room V-18 were exclusively black-on-white.[4] If so, this would indicate one of the earliest rooms in Plaza V. Other artifacts recovered include several bone awls and several hammerstones. In addition, a possible thermal feature that may have been associated with an outdoor work area to the east of Room Y was uncovered.

Room V-18

Room V-18 is located at or near the south end of the west roomblock. Immediately to the northeast is Nelson's room N-1. The Girl Scouts used N-1 as a midden for their backdirt from Room V-18. Immediately to the southeast is an area the Girl Scouts called Area V-yy (LOA 95PLE.025), which contains wall fall that may indicate additional architecture. This may be the remnant of a front room along

the plaza. But this is speculative because Area V-yy was not thoroughly investigated. The southwest corner of Room V-18 is superpositioned over the earlier structure, Room Y. At some point, this earlier room caused structural problems for Room 18.[5] Ceramics for this room are a problem because it appears that originally the Room Y and Room V-18 sherds were separated, but when we typed the assemblage they had either been merged or the Room Y sherds had been lost. The tally sheets (LOA 95PLE.027) indicate that the ceramics were separated when the Girl Scouts typed them in the field. Therefore, the discussion of the ceramics will be limited because their value for dating is highly suspect. For the collective Rooms V-18 and Y, there are 496 sherds, 236 of which are datable. Twenty-eight wood samples were sent to the LTRR, but only two dated and neither has provenience within the room.[6] A 1297+rB date is probably from a latilla that was 3.8 cm in diameter. The 1368B date was obtained from a charcoal fragment.

The excavation was difficult for the Girl Scouts because a half meter into their digging they encountered a combination of roof fall and wall fall that continued until they reached the floor at a depth of approximately one meter. Some of the beams and latillas burned and there may have been a fire in or on the roof, but there is no mention of interior walls reddened or blackened by fire. The room is masonry and the floor, which preserved poorly, is adobe. The northwest and southeast walls are 1.8 m long; the northeast and southwest walls are 3.1 m long. The floor area is 5.6 m^2. The only feature is a 15.2 cm thick ash lens in the southeast corner of the floor that extends 61.0 cm along both the east and south walls. Immediately below the floor, and apparently following the room's northwest wall for 2.5 of its 3.1 meters, is a row of vertical slabs that may have served as footing for the northwest wall of Room V-18.

Figure 50. Room V-18 being excavated in 1956 by Girl Scouts. Photo by Mary Ann Stein.

We cannot distinguish between Room Y sherds and Room V-18 sherds in this assemblage, so it is prudent to consider the following brief discussion describing a sample from the southwest corner of the roomblock, rather than ceramics that can be associated with a specific room. A third of the 228 datable sherds were from bags without level information. Besides two rooms being mixed, sherds are probably missing because the sherds with provenience represent levels 1 through 4 in a room where approximately one meter of roomfill was excavated. Local black-on-white, primarily Galisteo, represents 80.3% of the datable ceramic types. 6% are from the Tewa Basin, either biscuit or Wiyo, while 5.7% are Glaze A types. The AD 1297 +rB date from structural wood is consistent with the black-on-white and early glazeware while the later, AD 1368B partially burned wood fragment indicates activity in this area of the roomblock during a period when there were very few other dates for the pueblo.

Notes: Plaza V - Western section:

1. Frank Harlow reconstructed a quarter of a Biscuit A bowl that was recovered from level 4 (LOA 95 PLE.010). Not enough of this vessel was available for it to be accepted into the MIAC collection.
2. The Girl Scouts note two sets of human remains, 56-4 and 56-5 in their field notes but Erik Reed lists a third set, 56-6, which is not recorded in the field notes we reviewed.
3. Level 10 is missing, which is also one of the levels involved with the two burials the excavators reported.
4. An incomplete ceramic tally sheet of rooms 18a and 18b contradict the field notes, which enumerate several Glaze A ceramics (LOA 95 PLE.027). This summary sheet was preserved and located in the collection archives, showing the following: Above floor X, 1 Chupadero Black-on-white, 1 St. John's Polychrome, 15 Santa Fe Black-on-white, 24 Galisteo Black-on-white, 42 utilityware, 3 Biscuit A (Abiquiu), 1 Biscuit B (Bandelier), 1 Rowe?, 11 Glaze -1 Red, 1 Glaze A Polychrome, 9 Glaze -1 Yellow, and 1 unidentified Glaze-1. Below Floor Y, the summary sheet shows: 31 utility, 2 Santa Fe Black-on-white, 20 Galisteo Black-on-white, 7 Wiyo Black-on-white, 1 Biscuit A, 6 Glaze A Red, 1 Glaze A Polychrome, 1 Glaze A Yellow, and 1 Glaze A indetermined.
5. It is unclear when the crack in the floor occured that runs above the walls of Room Y, or the cracks in the southwest and northwest walls above where the Room Y walls cross under the walls of Room 18. There is no mention of evidence that the occupants of Room 18 repaired these cracks; they could have occurred long after the room was abandoned.
6. The narrative of the Room V-18 excavation indicates that some structural wood was found on the floor, but the field numbers for these specimens appear to have been lost when they were sent to the LTRR.

PLAZA V - NORTH ROOMBLOCK

The northern segment of Roomblock V includes two or three tiers of rooms on the slope leading to the northern terminus of the mesa where Plaza V and its associated roomblocks are located. It also includes Nelson's Room 2, and a detached structure the excavators called "Tommy's Tower." We have placed quotation marks around "tower" because we want to retain the original language of the field notes while registering our skepticism for this designation. The majority of the rooms in this segment have not been excavated. The Girl Scouts completely or partially excavated Rooms V-4, V-6, V-7, V-9, a space named V-8, and an unnamed space between Rooms V-6 and V-9. The function of space V-8 is ambiguous. It may have been a room or a series of rooms, but it is somewhat more likely that it was a passageway from Plaza V to the eastern rim of the mesa, and in other years, possibly functioned as a midden area. Nelson's Room 2 is located at the western end of the excavated rooms.

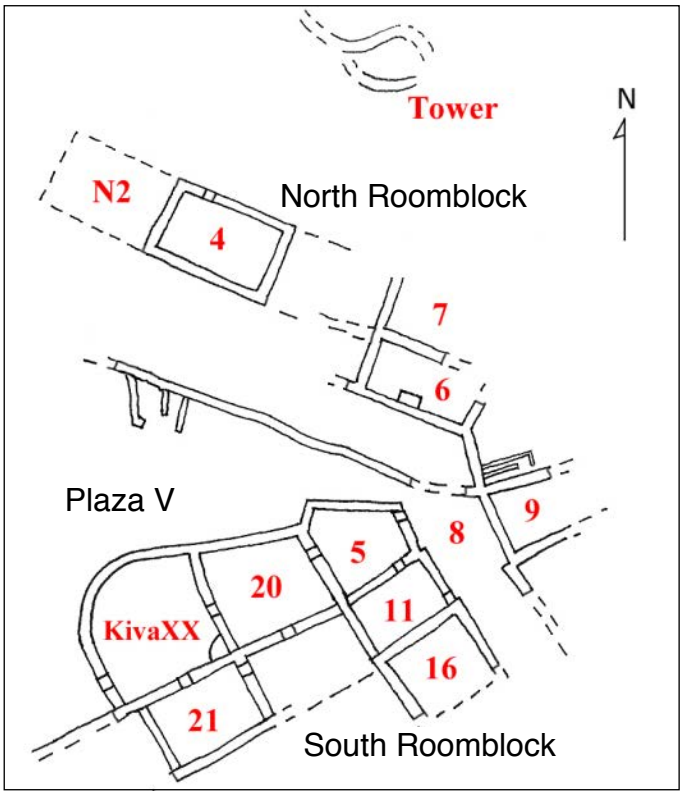


Figure 51. Plaza V - North Roomblock, shown in relationship to Plaza V and South Roomblock.

Our knowledge of this northern segment of rooms in Plaza V is limited because the excavation data, field notes and maps, ceramics, and tree-ring dates, are sparse. The ceramics we were able to locate were 122 sherds from V-4, 69 from V-6, 24 from V-7, 724 from V-8, 10 from V-9, and 556 sherds from the "tower." Tree-ring dates for this roomblock consist of four early vv dates from V-8 and 10 "vv" dates from the "tower." There are photographs and sketches that provide some insight into the locations of the excavated rooms in this segment. A photograph of the excavation in progress (Figure 52), probably taken with the photographer standing in V-8 and looking almost directly north, shows Rooms V-6 and V-7, marked with white numbers. The view includes the masonry walls of these rooms on the slope from the floor of Plaza V to the highest point in Roomblock V. This photograph and the 1956 aerial photographs (Figure 29) of Largo show a number of unexcavated rooms in the north segment. A rough perspective sketch dated 24 August 1955 in one of the Girl Scout notebooks lays out the relative locations of rooms V-4, V-6, V-7, V-9, area V-8, and the "tower" (LOA 95PLE.026).

Nelson's Room 2

Nelson's Room 2 is immediately west of Dutton's Room V-4; its east wall is V-4's west wall. The room was not excavated to the floor; he stopped digging at 1.5 m (Nelson n.d. 12). The exposed portions of the room's masonry walls have an average height of 1.4 m. The north and south walls are 3.5 m long, the east

wall is 2m long, and the west wall is 2.3m. Artifacts Nelson noted included fragments of worked slabs, a mano, a stone axe and a bone identified as an "infant limb bone" (n.d. 12).

Room V-4

Room V-4 was excavated in 1951, the first year of Dutton's Largo project. Information for this room is limited. There are no details of the excavation because the LOA archives do not contain a notebook dedicated to this room and no ceramics could be located in the ARC collections. Room V-4 is a rectilinear room with a sealed doorway in the north wall. It is located on the slope that rises north of Plaza V. There are no cutting dates and only 122 sherds of which 37 are datable. The flagstone floor suggests the room was a storage facility. The following description is extrapolated from sparse Girl Scout notes that we found in a notebook (LOA 95PLE. 012) amongst information on other excavated rooms. With no tree ring dates, the entire ceramic collection of 30 indeterminate glazeware, 3 Santa Fe Black-on-white, 34 Galisteo Black-on-white, 46 Smeared Corrugated, and 9 slipped unpainted sherds indicate an early construction.

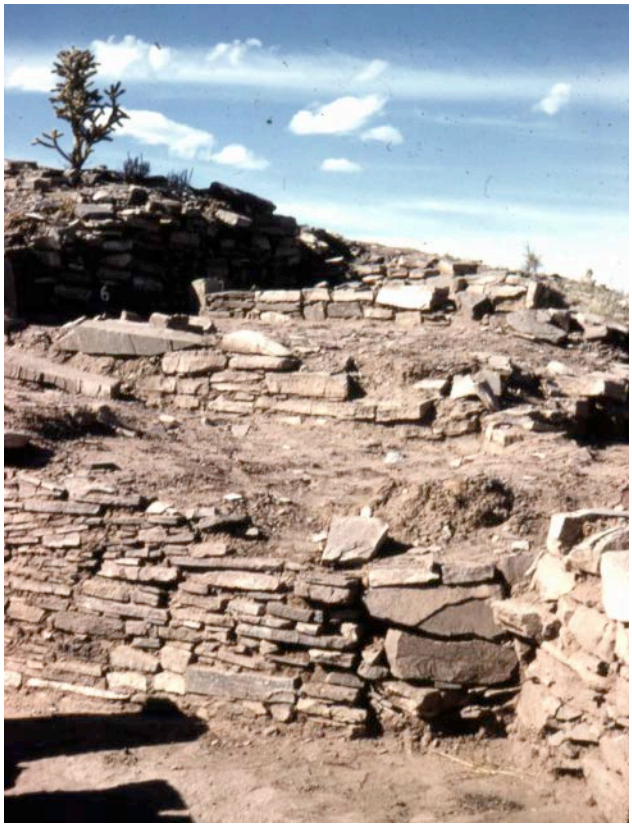


Figure 52. North Roomblock. View from V-8 looking north at the tiers of rooms. Barely visible In the shadow on the wall below the cholla next to V-4 is a white painted 6 and 7.
(Dutton collection, MIAC/LOA, Cat. # R3-071, B. Bauer photo)

The room is located near the highest point on the north-trending outcrop that contains Roomblock V. Standing masonry walls are between 1.0 and 1.4 m high. The room is rectilinear, with a sealed opening in the north wall. No other features were reported. The west wall is also the east wall of Nelson's Room 2. The Room's east wall is shared with an unexcavated, unnumbered room to the east. Our interpretation of Dutton's 1956 aerial photo of Largo and Nelson's site map suggests there is at least one, and perhaps two additional rows of rooms south of V-4. There is no written information regarding evidence of rooms north of Room V-4. The 1956 aerial photographs do not show any wall alignments north of Room V-4. The north and south walls are 3.0 m long, the east wall is 2.2 m long and the west wall measures 2.0 m. The north and south walls continue east and form the walls of the adjacent unexcavated room. The room's only feature is a sealed opening in the north wall that is 0.4 meters wide, 0.5 meters high and 0.6 meters above the floor.

This opening probably was a doorway. Exterior, ground floor entrances, as opposed to roof hatches, are not common in Ancestral Puebloan architecture; doorways usually connect interior rooms (Creamer 1993:22, but see Stubbs and Stallings 1953:31 for early exterior doors at Pindi). Exterior entrances, when they are present, usually open into plazas. V-4's floor is flagstone and the walls appear to have been

covered with 1.3 cm of plaster; it is unclear how much of this plaster remained when the room was excavated. Flagstone floors are often associated with storage facilities, because if the floor is well-made, it prevents animals from burrowing into the room. Some burning occurred; the plaster is described as red, indicating oxidization. No ceramics from this room are listed in the ARC database. The 1951 field notes mention the presence of a few large sherds without indicating context, type, or vessel form. Other artifacts mentioned in the 1951 field notes include four partially burned wooden awls, a bone awl, a bone flute, a maul, 15 mano fragments, and three polishing stones. There is no information indicating whether these objects were located in room fill or on the floor.

Room V-6

This is a rectilinear, masonry room to the southeast of V-4 and immediately south of V-7. The room's northeast wall is also V-7's southwest wall. V-6 is a rectilinear room with an ash-filled slab-lined hearth. The presence of the hearth indicates this was a living room. Ash was also present in the room fill, but there is no mention of charcoal or charred wood. The room cannot be dated due to the absence of tree-ring dates, although 69 sherds with no level provenience included; 10 Glaze A, 2 Glaze B, 2 Galisteo Black-on-white, 2 Biscuit A, 17 indeterminate glaze, 2 micaceous utility, 1 Sapawe Micaceous Ribbed, 15 slipped unpainted, 1 clapboard corrugated, and 18 smeared corrugated. However, the majority of the cutting dates and datable ceramics from Roomblock V indicate the primary occupation was from the Late Coalition (AD 1290) through the Early Classic (AD 1410), and it is likely this room falls somewhere within this date range. There is insufficient data to determine whether this area is another room or an outside work area. Possible rooms to the west and south of V-6 are unexcavated. There are also no tree-ring dates for the adjacent Room V-7, and only 24 sherds, including 2 Galisteo Black-on-white and 3 Glaze A.

Figure 53. Room V-6 showing slab-lined feature.
(Dutton collection, MIAC/ LOA, Cat. # E2-018)

All or a portion of the room was excavated in 1953, but the field notes (LOA 95PLE.012) describing the work are minimal. The room's only dimension is the west wall, which measures 2.0 m. The most significant aspect of V-6 is the slab-lined hearth (Figure 53). Nelson had not located any hearths during his brief work at Largo (1914:72). The ash-filled hearth is located along the room's south wall, 1.1 m east of the west wall. It measures 50.8 cm east-west and 45.7 cm north-south. We have added the hearth to our site map. Ashy deposits were present in the room fill. Two artifacts were noted in the fill, a bone tool fragment and a complete Pueblo side-notched projectile point.

Room V-7

This rectilinear, masonry room was excavated in 1953 (LOA 95PLE.012) and is immediately northeast of Room V-6. An unexcavated room lies to the west. The extant evidence is insufficient to determine whether there are also unexcavated rooms to the north and east. The only dimension that can be gleaned from the field notes is the length of the room, which is approximately 3 meters. The standing walls in the room's southwest corner are 78.7 cm high. The walls in the northwest corner are 66.0 cm high. There are no tree-ring dates and only 24 ceramics in the ARC collection for this room: 2 Galisteo Black-on-white, 3 indeterminate Glaze A, 14 indeterminate glazeware, 1 indeterminate plainware, 3 slipped unpainted, and 1 smeared corrugated. The room does not contain any features. The floor is constructed of flagstones. Burned adobe and wood, including beam fragments, were noted in the fill. Some or all of this material may be roof fall. One concentration was located 17 cm above the floor. The locations of the other concentrations in relation to the floor are unclear because their placements in the fill were not measured from the southwest or northwest corner. Artifacts in the fill include several mano fragments, a hammerstone, and sherds.

The flagstone floor indicates this room was a storage facility. A tight-fitting flagstone floor could prevent burrowing animals from entering and eating food supplies. The presence of a burned beam in roof fall is the only evidence that V-7 burned. Without tree-ring dates or a larger ceramic assemblage, it is not possible to accurately date this room. The majority of the cutting dates and datable ceramics from Roomblock V indicate the primary occupation was from the Late Coalition (AD 1290) through the Early Classic (AD 1410), and it is likely this room falls somewhere within this date range.

Area V-8

This space, identified as Room V-8 in Girl Scout notebooks, was excavated in 1953 (LOA 95PLE.014). The overarching question about this space is whether it was room, a midden, or a passageway from the plaza of Roomblock V to the rim of the escarpment. As the Girl Scout excavator worked through this unusually configured space she came to suspect that is was not a room but a passageway. Although the escarpment is very steep at this location, any passageway would have been just to the rim where perhaps trash was thrown over the side. As we were wrapping up our analysis of Pueblo Largo ceramics, one of the last previously unidentified cartons of material from Dutton's excavation produced 724 sherds from eight levels of V-8. These included 93 Galisteo Black-on-white, 38 Santa Fe Black-

Figure 54. View from Plaza V looking toward V-8 passageway or midden. Room V-5 at center with shadowed wall, Stein & Martin photo 1956.

on-white, (both of which, together, accounted for 54% of datable ceramics) 83 micaceous (34%), 55 indeterminate slipped, 26 Glaze A, 24 indeterminate glaze, 2 Wiyo Black-on-white, 2 clapboard corrugated, and 388 smeared corrugated. Eight levels of ceramic collection would argue for a somewhat deep cultural area for V-8, and therefore that V-8 perhaps was a room or a midden. Although eight levels were recorded on ceramic bags and sherds, the Girl Scout notebooks only mention three floor levels, each approximately 5 cm thick, that were uncovered in the east sector of the space. It is not known whether these surfaces were adobe or packed earth, or whether the west sector of the space also had three floor levels. Four tree-ring dates were non-cutting, vv dates ranging from AD 1285 to AD 1300.

V-8 is located in the northeast corner of Roomblock V, between V-9 and the north trending walls of V5, V11, and V16. Room V-8 measures approximately 5 m north-south, and the east-west width varies from 1.4 m to 1.8+ m because the walls of the adjacent rooms jut into the space. Room V-9 and an unnumbered room form the east wall. The space terminates near the steep, southern edge of the escarpment; there was no evidence of an escarpment wall. The east walls of rooms V-5, V-11, and V16 (north to south) form V-8's south wall. "Fallen rocks," not a formal wall, were located at the northwest end of the space, adjacent to Plaza V. There is minimal information about the construction of this space. It is not possible to determine whether V-8 was roofed; there is no description of fill that would suggest roof fall.

V-8 has two, possibly three features. Doors from V-5 and V-11 are located along V-8's west side. The "sealed" door from V-5 is 34.3 cm wide and 36.8 cm above the floor of V-5. The original height of the door is unknown. A "filled-in" door leading to V-11 is 36 cm wide and 40 cm above V-11's floor (LOA 95PLE.020). The excavators of V-8 did not record this feature; it appears in 1954 and 1955 notebooks for V-11, after V-8 was excavated. V-8 may also contain the remains of a hearth. The section of V-8's floor that is bounded by V-11 on the west and V-9 on the east had an ash concentration with "baked adobe." The Scouts excavated a "depression" of unknown dimensions, probably located somewhere in the southern sector of the space. The description of a layer of "water-deposited mud" above sterile soil suggests this may be the remains of a looter's hole or a prehistoric borrow pit.

In addition to ashy deposits, the fill contained wood fragments, animal bone, charred corn and a bone that is described as a human rib. Some artifacts were assigned catalogue numbers in the field, including four bone beads, two bone awls, three worked sherds, a maul, a polishing stone, three mano fragments, three hammerstones, and two metate fragments. Provenance is not always clear, but it appears most of the catalogued items were in the fill rather than in contact with the floor of the depression.

Given the available data for V-8, no definitive functional assignment can be made. However, there are several lines of evidence that suggest it was not a room, despite ceramic notation indicating eight levels of unknown measurements. Our interpretation of this space is tentative because feature details, descriptions of the excavation, artifact provenance, and architectural information (floor construction) are limited. The four "vv" tree-ring samples indicate V-8 is no earlier, and perhaps no later, than the Late Coalition, but they do not help refine the chronology of this space. And, there is no indication as to whether these samples were derived from beams or charred debris in the fill.

The ceramics in the ARC collection are consistent with Roomblock V's early black-on-white dominance along with limited Glaze A. Black-on-whites are almost 75% versus 25% glazewares. Unfortunately, the ceramics would also be consistent with both a room or a midden/passageway. There are tree-ring dates

and ceramics from the rooms to the west that form V-8's west wall (V-5, V-11, and V-16). Some cutting dates fall during the Late Coalition period and the ceramics include both early glazewares and carbon paint black-on-white ceramics. If V-8 is a room that shares its west wall with the east walls of these three rooms, the following might be expected: (1) evidence of bonded or abutting east-west walls with V-5 and V-16 and (2) tree-ring dates that show a range similar to the date ranges of V-5, V-11, and V-16.

The evidence we have for the southern segment of Roomblock V and V-8 indicates that neither of the expectations can be satisfied. One of the details that many of the Girl Scout notebooks provided was a plan view or a description of whether walls were bonded or abutted. The plan view of V-8 and the field notes indicate the absence of a south wall at the rim. The northern terminus of V-8 is depicted as "fallen rock" (LOA 95PLE.014), which suggests the excavators did not find any evidence of a wall. Thus, there is direct and indirect information that V-8 did not have north and south walls that abutted or bonded with adjacent rooms to the west. If V-8 functioned as a passageway to the escarpment rim, no large ceramic assemblage would be expected because it is unlikely that people would have thrown their trash in a passageway. The 724 sherds, excavated from V-8 might better be explained by V-8 being both a midden and, at a different time, a passageway.

The expectation that the tree-ring dates would be similar to those in the adjacent rooms to the west was also not met. This can be partially attributed to the fact that V-8 has only four dates, all "vv", or latest obtainable, dates of AD 1284, 1291, 1295, and 1300, in the Late Coalition period. On the other hand, V-5, V-11, and V-16 produced tree-ring dates and ceramics with production date ranges into the 15th century while V-8s ceramics are all late 13th and early 14th century. V-8 has no late tree-ring dates, even latest obtainable dates, in the 14th or 15th centuries. However, V-8's latest obtainable dates are early, while the adjacent rooms to the west include later dates.

Adjacent Room V-5 has seven tree-ring dates that cluster around AD 1300 and a total of 11 cutting dates from AD 1275 to 1322, the Late Coalition. This could be consistent with the V-8 dates. The ceramics from lowest levels of V-5 include a high proportion of early glazeware and black-on-white with production dates that span the 1200s to the mid 1400s. V-11 produced one cutting date of AD 1298 and two near-cutting dates, v and +v of 1421, along with 29 vv dates ranging from AD 1069 to 1440. The proportions of datable ceramics from V-11's lowest levels (levels 13-14) are consistent with the tree-ring dates. They suggest an occupation that may have commenced as early as the Late Coalition and continued (interrupted or uninterrupted) into the 15th century.

Other evidence that V-8 is not a room is that its non-conforming shape and dimensions are unlike any other room in the roomblock. Some other rooms appear to have more than four walls, although this may be a reflection of how remodeled rooms were excavated and interpreted, or their location relative to adjacent rooms or passageways. Two in this roomblock are somewhat D-shaped. However, V-8's narrow, roughly rectilinear space is approximately 5.2 m long and averages 1.3 m wide. In contrast, the dimensions of a sample of other rectilinear rooms in Roomblock V averages 2.1 m by 2.6 meters. V-8 is between 1.5 and 2.4 times as long as other rectilinear rooms. This space is narrower and longer than the rooms that functioned as living and storage facilities. Said differently, the ratio of width to length in rectilinear rooms does not exceed 1:1.67 (V-21) and can be as low as 1:1 when the room is very close to square (V-24). However, V-8's ratio of width to length is 1:3.25, which captures the non-conforming nature of its dimensions. V-8 is also significantly larger than other rectilinear rooms, with an area of 9.1

m^2. The rooms associated with Plaza V range in size from 3.3 m^2 (V-19) to 7.4 m^2 (V-21) and they average 5.6 m^2. The non-conforming shape of V-8 is produced by the rooms to the east and west. The irregularities of the east-west dimensions, which create three or four separate room segments, are also unlike other spaces where walls are not impinged upon by adjacent rooms. The north-south walls of V-8 reflect the variable lengths of the rooms to the east and west and V-8 becomes progressively narrower as it trends south toward the edge of the escarpment. There is no indication in the plan view or the field notes that this space was once separate small rooms that conformed to the dimensions of the rooms that impinge on this space from the east and west. Thus, when all is considered, the authors tentatively conclude that V-8 was most likely a passageway and at a later date, a midden.

Un-numbered Space, between Rooms V-6 and V-9

This is an unnamed architectural space with a feature that is defined by the east wall of V-6, the west wall of V-9, and the east wall of a row of unexcavated rooms described as "the north wall of Plaza V." The north and east walls of this space are not defined. In 1955, an excavator drew a feature in this space (LOA 95PLE.026) and we have added it to our site map. There is insufficient information to determine whether it is a room or an outside work area. The description of this space suggests the excavation did not reach the floor. A rectilinear rock-slab feature of unknown function is located in the southwest corner of the space. It measures 2.0 m long, 0.4 m wide and between 0.4 and 0.5 m deep. The feature's irregular depth indicates it was not completely excavated. One possible interpretation is that this is a mealing bin large enough to accommodate several metates. Two surface artifacts were collected, an axe and a hammerstone. Two additional artifacts were located in the feature, a bone awl and a mano fragment. More artifacts that were identified at unspecified levels in this partially excavated space include animal bones, sherds, and charcoal.

Room V-9

Room V-9 is the northeastern-most room that was identified during the Dutton excavations, and only the southwestern wall and portions of the perpendicular walls were identified before the excavation ended in 1953. A hard-packed adobe level was noted in the southwest corner of this partially exposed room. There were ten ceramic sherds from Room V-9 in the Dutton collection with no level provenience; 4 Galisteo Black-on-white, 3 Largo Glaze-on-yellow, 1 slipped unpainted, and 2 smeared corrugated. No tree-ring samples were found.

"Tommy's Tower"

The Girl Scout notebooks and original artifact field bags identify a structure in the northernmost sector of Roomblock V as "Tommy's Tower". (LOA 95PLE.0025) The Diggers excavated this room in 1955. Documentation consists of a rough plan view sketch and a comment that the room had fallen rocks, a charcoal deposit, and some black-on-white sherds, along with black-on-red ceramics indicative of trade. Based on the sketch map and a 1956 aerial photograph of the site that shows a similar feature north of Roomblock V, we have placed on our site map a curvilinear structure north of Room V-4. There are no chronometric dates; however, the calculation of the mean ceramic date represented by the sherds in the fill yields a date of AD 1326.

Figure 55. "Tower" feature. Image from Bertha Dutton article, "An Overview of the Galisteo Archaeology", Illinois Academy of Science, 1980, p. 95.

Although the "tower" designation in the notebooks and on the artifact bags suggests the feature is unlike the other architecture at the site, there is no evidence to support the interpretation. During this period, the primary goal of Dutton's research was the identification of archaeological evidence for a late 13th century migration, presumably from the Mesa Verde region, into the Galisteo Basin. The presence of a tower, an architectural hallmark of the northern San Juan area, would have provided some support for her hypothesis, but she does not mention this structure in her El Palacio publications on the Largo excavations or subsequent papers on southwestern migration. What the existing data do suggest is a small masonry room with an interior diameter of 3.9 m and an adobe floor with a hearth. The hearth, located 53 cm north of the south wall, is 10 cm deep and measures 64 cm east-west by 46 cm north-south. Three non-contiguous, curved walls define the space; there is no evidence of an east wall, and south of the in-curving south wall there are two additional wall segments the scouts identified as "extensions" of the structure's walls. There is no evidence the excavation extended beyond the walls to determine whether these extensions indicate the presence of additional rooms. The very rough plan view sketch in the Girl Scout notebook (LOA 95PLE.0025) describes the south side of the south wall as a swale, suggesting a depression (natural or cultural).

The Diggers excavated this structure in 1955. The current evidence of a tower or structure of any kind is quite ephemeral. We returned to Largo in 2010 to attempt to locate the "tower" and assess Dutton's claim that it was a tower. There is a low masonry wall located northwest of the terminus of the north roomblock associated with the Plaza V. It is down the escarpment, approximately 15 feet east of Room V-4, on a relatively level bench that ends in an abrupt (and extremely steep) drop off. The surface of the escarpment and the bench contain numerous fragments of architectural stone (sandstone), as well as pieces of unmodified sandstone. There is a light scatter of artifacts, ground stone fragments, sherds, and lithics, some of which, including a two-hand mano, have washed into the structure. It is difficult to pick out this possible structure, given the amount of sandstone in the area. The single feature that appears to be cultural consists of several courses of stacked, tabular sandstone on the southwestern side of the structure. However, these courses have the appearance of being recently stacked and may represent the results of the excavation rather than an original wall. The other walls are questionable and may be natural alignments of rocks that slid down the escarpment and came to rest in this area. Today, over fifty years after the project, there is no evidence of the rectilinear rock alignments to indicate the presence of the hearth described and sketched by the excavators. No charcoal is present on the surface, but the inventory of charcoal and wood fragments suggests a hearth may have been present (LOA 95PLE:011). There is no indication of a burial excavation associated with the structure. In fact, there is no evidence that an excavation took place here. Aeolian sands have filled in any trenches dug by the Girl Scouts.

The artist's rendering of Pueblo Largo by Alice Wesche, (Figure 56) shows a double tower in the general vicinity of this structure, but the area lacks any significant rubble piles that might be associated with a multi storied, double tower such as those found at Hovenweep National Monument and Sand Canyon Pueblo in the Four Corners area. As noted by the Girl Scout who wrote up the excavation of the burial and the structure, there is insufficient stone here to be the remains of substantial walls, although it could be argued the building had been jacal, or a ramada, or that the stone was recycled for construction in the Plaza V area, or that it could even have been a shrine.

Figure 56. Conceptual drawing of Plaza V roomblocks, attributed to artist, Alice Wesche, ca. 1956. (Dutton collection, MIAC/ LOA, no cat. #)

Dating information for the "Tower" is based mainly on ceramic cross-dating because all 12 tree-ring dates were vv dates and therefore not helpful. An inventory of wood samples by an unknown author (LOA 95PLE.001) indicates that 12 "charcoal fragment" samples were sent to the LTRR. All the samples were deemed to be "incomplete" and "vv" with outside rings dating to 1200 to 1333, with most samples dating from AD 1238 to 1259 and to AD 1287 to 1291. 11 of the 12 samples had tree rings dating to AD 1291 or before.

We analyzed a total of 556 sherds from this room, of which 214 are datable. The field bags lacked provenience information other than "Tommy's Tower." Utility wares, primarily indented or smeared corrugated jars, constitute the majority of the assemblage (50%). Because we suspect selective collecting of utility ware sherds, it is more informative to look at the painted ceramics from the structure. Most painted ceramics (95%) are 55 Santa Fe Black-on-white, 137 Galisteo Black-on-white, and 19 Wiyo Black-on-white. The low proportion of glazewares (1% of datables) reflects the early 14th century mean ceramic date for this assemblage. Only one glazeware sherd, a rim from an Agua Fria Glaze-on-red bowl, could be securely typed. The glazeware category includes 5 additional, indeterminate glazeware body sherds and one indeterminate glaze polychrome sherd; two sherds with yellow or cream slip but no paint, probably represent additional glazeware examples. As Dutton and her Diggers noted, there is some evidence of trade or contact with people beyond the Galisteo Basin in the St. Johns Polychrome (1), Chupadero Black-on-white (1) and Wiyo Black-on-white (19) sherds. These non-local types constitute 3.8% of the total assemblage.

The location of the "tower" raises the question as to whether the ceramics that were collected were originally associated with this structure or represent trash thrown over the mesa top by the people living in the north roomblock of Plaza V. The level area where the "tower" is situated is a natural resting place for artifacts tumbling down the slope. This combination of very limited excavation information, and limited provenience for the sherds, makes it impossible to assess what was washed down and what might have been associated with the structure. The only connection between a feature and ceramics is mention of "mostly culinary ware in the carbon deposit" (LOA 95PLE.025 p. 6) in the field notes. The excavated thermal feature is 10 cm deep, which may represent the depth of the structure given the fact that the

surface of the shelf is a combination of bedrock and shallow aeolian soils. It is possible that the vast majority of the artifacts the excavators associated with the "tower" were washed down from the north roomblock of Plaza V. The ceramic assemblage from the surface collection and the excavation is dominated by black-on-white sherds with lesser percentages from Glaze A, indicating that the "tower" material compares closely to the ceramic material in the large collections from area V-8 and Room V-5.

In summary, "Tommy's Tower", is a masonry room in the northernmost sector of the Roomblock V area that dates to the late 13th or early 14th century at the end of the Coalition Period. Black-on-white sherds (n=242) versus glazware (n=6), and the fact that eleven of the twelve "vv" tree ring dates are before AD 1300, makes this one of the oldest structures in Roomblock V and the Pueblo. Despite the name conferred on the structure by the Diggers and the inclusion of a tower in Weshe's drawing of the site for Dutton, this room probably represents the most visible remains of a small roomblock built early in the occupation of the mesa. The vast majority of the decorated ceramics are Santa Fe, Galisteo, or Wiyo Black-on-white, with a very low proportion of the glazewares that Rio Grande potters were beginning to produce. Interaction between the Largo residents and people to the north is suggested by the Wiyo Black-on-white, while the Chupadero Black-on-white may represent contact with middle Rio Grande Pueblos.

PLAZA V ROOMBLOCKS: CONCLUSIONS

We speculate that Pueblo Largo was established in a few decades, and that it had a second wave of building during which about 90% of Pueblo Largo's rooms were built, mostly in the AD 1420s and 1430s, perhaps after a hiatus of occupation of many decades. (Figure 57) This later wave resulted in the construction of Roomblocks I, II, III, and IV, and repopulation or reuse of at least some of Roomblock V. The roomblocks forming the three sides of the triangular-shaped Plaza V were likely started in the mid-1250s on the defensive promontory of Pueblo Largo, some 50 meters above Estacada Wash. It is notable that the site selection likely indicates that the occupants felt the need for some security in the mid-1200s. These rooms are the oldest in Pueblo Largo.

Tree-ring dates indicate that eight of the Plaza V rooms show cutting dates before or around AD 1300. There are a few earlier cutting and near-cutting dates before AD 1260; (1230 for Kiva XX, and 1243 and 1245 for Room V-21), but there are 13 cutting dates for the AD 1260s, 21 for the 1290s, and a total of 64 for the years 1260 to 1330. Based on tree-ring dates, it appears that four rooms (V-20, V-21, Kiva XX, and V-12) were all started before or in the AD 1260s. Four rooms (V-5, V-11, V-13, and V-18) all have tree-ring cutting dates of AD 1287-1300. Thus all eight of these rooms were constructed in the first building wave from about AD 1260 to the first decade of the AD 1300s.

Based on ceramic assemblages, the dominance of black-on-white ceramics would tend to confirm early construction and occupation of a room. Most black-on-white ceramics are somewhat earlier than glazewares, which do not start until 1315-1325. Black-on-white ceramics dominate the ceramic collections of rooms V-5, V-12, V-18, V-20, and the "Tower," thus confirming the early construction of these structures. Kiva XX, V-13, V-14, and V-21 have a more balanced mix of ceramics between black-on-whites and glazeware, likely indicating both early construction and later remodeling or reoccupation. However, most Plaza V rooms also have a glazeware component resulting from their use into the early years of the appearance of glazeware in the Galisteo Basin. In Largo's case, glazeware from AD 1315 to around AD 1340 represents the likely end of the first phase of Pueblo Largo's occupation. Also, many Plaza V rooms will have a glazeware component from either later reuse, possibly as a midden, or reoccupation of the room, likely during the second wave of building between AD 1392 and 1446. Rooms V-12, V-18, and the "Tower" have a very modest glazeware component, indicating no reuse or reoccupation in the second wave of Largo's occupation..

Considering both tree ring dates and ceramics, six structures, (Rooms V-10, V-11, V-15, V-17, V-24, and V-25), could be described as having probably been wholly constructed at a later date, in a second wave of building, about AD 1420-1430. Their ceramic collections are dominated by large percentages of glazeware. Room V-15 had no ceramics but had one tree ring date of AD 1426. Rooms V-11 and V-21, on the outer side of the South Roomblock, have considerable glazeware. V-11 has one AD 1421 tree ring cutting date, indicating use during the second wave construction. .

From additional architectural information gleaned from the Girl Scout notebooks which describe some abutments and door locations, we believe that the initial building phase of the Plaza V Roomblock was during the AD 1260s and 1290s. This phase appears to have consisted of 4-5 rooms: Kiva XX, Rooms V-5, V-11, V-20, V-21 and possibly the unnumbered space between rooms V-11 and V-21. These rooms all

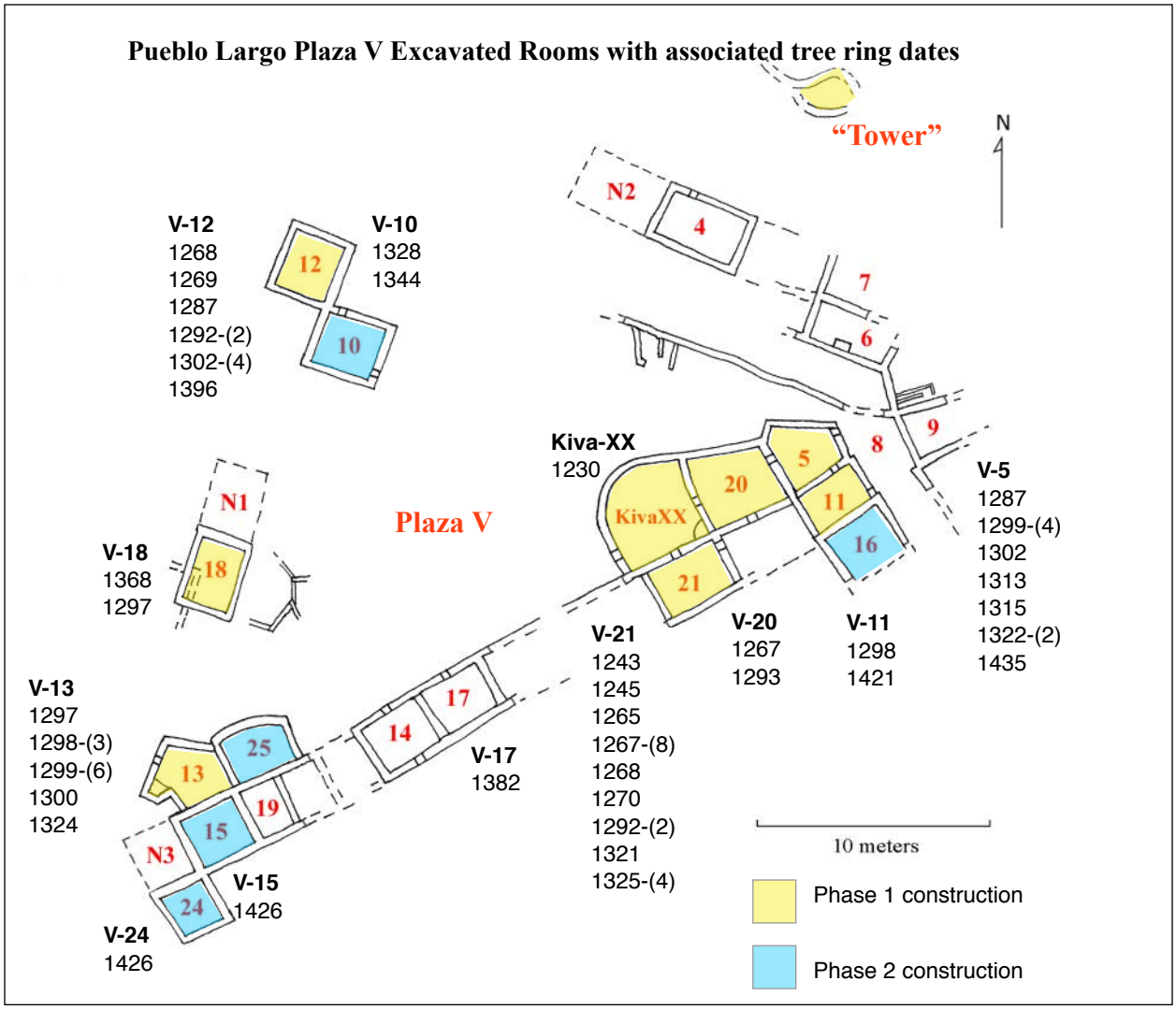


Figure 57. Plaza V excavated rooms with associated cutting and near-cutting dates, showing construction phases.Tree-ring data from Robinson, Harrill, Warren (1973). Numbers in parenthesis indicate multiples of same date, from different specimens. Dates from records at the Laboratory of Tree Ring Research, Tucson, personal visit.

have connecting doorways and were likely built for one extended family with V-11 and the unnumbered room possibly functioning as a store room behind V-5 and V-20. Room V-16, behind V-11, appears to have been attached on the perimeter at a later date when the Plaza V rooms were reoccupied. The southern wall of V-11, which continues through the unnumbered room adjacent, also forms the southern wall of V-21, and was likely built first, as the side walls of V-11, V-21, and the unnumbered room between, abut this wall.

Plaza V is actually quite small as a work area and was eventually surrounded by an estimated 50-60 ground-floor structures in two rows in most places. Using Nelson's formula, an estimated 25 second-story rooms would have been present, but there is limited evidence of such second-story rooms. We do not know if the blocks of rooms surrounding Plaza V eventually were connected, completely enclosing the plaza, but early construction and occupation appears to be sparse, perhaps accommodating, at first, no more than three to five extended families.

The initial building phase also included Rooms V-12 and V-18 in the West Roomblock of Plaza V. Cutting and near cutting dates in V-12 are AD 1268, 1269, 1287, 1292 (two), 1302 (four), and in V-18 are 1297 and 1368. These rooms are not connected and may have two or three rooms between them, but both appear to be in what would be the outer row of rooms in the West Roomblock. Room V-12 ceramics are dominated by black-on-white (80%), indicating an early construction. In Room V-18, where Girl Scouts noted two stories, black-on-white ceramics dominated (85%), both above and below the second story floor. Thus both tree-ring dates and ceramics confirm an early construction for both rooms V-12 and V-18, and perhaps for the outer row of West Roomblock rooms.

In the southwestern cluster of the South Roomblock, only Room V-13 can be definitively shown to have been built in the first wave of construction, with cutting and near-cutting dates of AD 1297, 1298 (three), 1299 (five), 1300, 1303, and 1324, and a more balanced ceramic collection with 45% Black-on-white versus 55% glazeware. V-13 is at a strategic location, likely guarding the entrance to Plaza V in early and later times, and certainly the first structure that would have been encountered by intruders. Tree-ring dates include In addition to the 12 cutting and near-cutting dates, on or before AD 1324, there are 17 vv non-cutting dates, (14 are before AD 1332 and 3 are dated AD 1344, 1354, and 1420). Additionally, Room V-13 had no obvious doorways into Room V-25, beside it, and Room V-15, behind it. Thus V-13 was likely repaired/re-occupied until the last days of occupation of Pueblo Largo.

The rooms adjacent to V-13 in the southwest cluster appear, with limited evidence, to be all second wave construction. V-15 had no ceramics and no doors, with a cutting date of AD 1426 and non-cutting dates of AD 1293, 1319, 1377, 1378, and 1430. Room V-25, also adjacent to V-13 had no tree-ring dates, but did contain 139 sherds, (79% glazeware, and 21% Tewa Black-on-white), which are contemporary with the glazewares. Room V-19 had no tree-ring dates and had 91% glazeware versus 9% black-on-white. Room V-24 is on the outer edge of this cluster with a cutting date of AD 1426, a vv-cutting date of 1406 with 52% Glaze A ceramics, and 22% late Biscuit ware. Thus room V-13 is early and late, in a cluster of rooms mostly appearing to have been constructed later.

In the North Roomblock of Plaza V, the "Tower" is likely one of the oldest structures on the promontory. There are no cutting dates, but there were 11 non-cutting vv dates, from AD 1200 to 1291. The "Tower" has 556 datable sherds of which only six are glazeware and 242 are black-on-white. The other rooms excavated in the North Roomblock, (V-4, V-6, V-7, and V-9), all were lacking of tree-ring dates. These rooms had very small and mixed ceramic collections, the largest of which was from V-4 with 37 black-on-white and 30 glazeware sherds. Area V-8, the passageway/midden had a preponderance of about three-quarters black-on-white and one-quarter Glazeware, perhaps reflecting its passageway/midden status in both waves of building episodes. Refer also to Table 10 comparing Glazeware versus black-on-white by structure.

Thus, all evidence considered, both the tree-ring data and ceramics from Pueblo Largo's Plaza V area agree with one another, and confirm that the Plaza V area was the first area constructed and occupied at Pueblo Largo. The evidence also confirms that some rooms were added-on much later and some early rooms were re-occupied in the later, massive building episode of Roomblocks I, II, III, and IV; or 90% of all Pueblo Largo's rooms. The limited excavations of these four roomblocks produced 48 cutting and near cutting dates, all but three were from AD 1400 to AD 1439, and 40 were from AD 1420-1439.

KEEPING THE WORLD IN BALANCE: Largo's Kivas and World Quarter Shrine

> In an earlier village which was occupied during the period of Spanish exploration and colonization, informants point out an area in the center of the ruin as being the site of a circular kiva. They add that the "earth mother earth navel middle place" was in the center of the kiva floor. Alfonso Ortiz

Feasting, rituals and dances, competitive games, rites of passage, trade fairs; people have devised myriad ways to come together to celebrate or grieve, redistribute resources, settle disputes and communicate with ancestors and spirits. Pueblo Largo contains shrines and kivas that provided settings for some of these integrative activities. Nelson identified four kivas within the pueblo and a world quarter shrine to the southwest. Dutton excavated two of the structures Nelson thought might be kivas, Kiva A[1] in the southernmost plaza and Kiva B, in the plaza area north of of Nelson's massive Roomblock IV. At least two additional plaza kivas in Roomblock IV remain unexcavated. A modern mapping project (Nelson worked at Largo 100 years ago), might identify additional ceremonial structures. A possible fifth kiva was unearthed by Dutton in the southern sector of rooms associated with Plaza V. She called it "Kiva XX" and unlike the other kivas, this structure was above ground and part of a roomblock rather than situated in a plaza. Kiva XX is discussed previously in the Plaza V South Roombock, eastern section with other associated rooms.

Kiva A

Kiva A is a circular, semisubterranean structure located in Plaza A, the pueblo's southernmost plaza that is bordered on three sides by large, linear roomblocks I, II, and III. The ceramics and two tree-ring dates of AD 1431r from charcoal fragments, the only cutting dates from this area of the site, place this structure in the first half of the 15th century. Although the wood dated, it does not appear that the dates are from structural wood. The kiva is located southwest of an artifact scatter that Nelson identified as Midden A. The plaza does not have any other obvious depressions that would suggest additional kivas.

Figure 58. Kiva A During excavation ca. 1954, (Dutton collection, MIAC/ LOA, Cat. #G1- 104, B. Bauer photo)

Dutton excavated half of the structure over a four-year period, beginning 1951, the first field season. Besides the Girl Scout field notes (LOA 95 PLE.015), Dutton's 1952 (El Palacio 1952:349-350) and 1953 El Palacio (1953:348-349) articles provide information about the excavation and the structure. Agnes Sims, a Santa Fe artist with an interest in petroglyphs and kiva murals, supervised the excavation (Dutton 1953:343). The excavators uncovered a hearth complex similar to ones at Pindi (Stubbs and Stallings 1953:31-55) and Arroyo Hondo (Creamer 1993:88-109). The masonry walls were decorated over an extended period with layers of painted plaster (yellow, white, and black) but no murals were identified

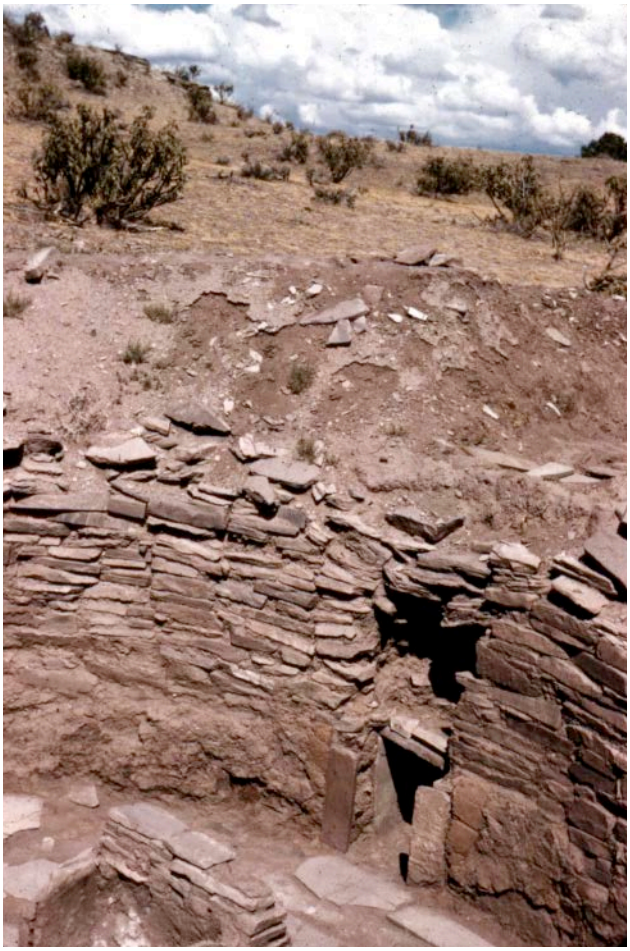


Figure 59. Kiva A Ventilator shaft, (Dutton collection, MIAC/ LOA Cat. # K1-041, B. Bauer photo) 1954.

(Dutton, El Palacio 1952:349). The presence of smoke-blackened plaster walls and burned adobe in the fill indicate that a portion of the kiva burned at one time.

This kiva has the full complement of hearth features that are associated with communal structures in the northern Rio Grande region. The kiva is 6.7m in diameter and the surviving masonry walls stood, on average, 2.1 m high when excavated by the Girl Scouts. The field notes describe the difficulty the Girl Scouts encountered when they dug through the fill and encountered masonry wall fall, an indication that the original walls were higher than two meters. The hearth complex consists of a slab-lined ventilator shaft that opens to the east, with a tunnel that connects to the hearth. There is an east-facing U-shaped masonry and adobe deflector with its wings and an adobe hearth. Dutton referred to the deflector as an "altar" in her 1953 El Palacio article. The ash-filled hearth is 54 cm wide, 63 cm long and 10.8 cm deep. The deflector is 81.3 cm high and 25.4 cm wide. The ash pit between the deflector and the hearth measures 34.3 cm wide and 73.7 cm deep. A second, smaller 63.5 cm by 23.5 cm pit of unknown function is located behind the deflector. The excavators noted a small hole southwest of the hearth but they discounted it as a possible sipapu because it was not filled with sand. In addition to the hearth complex, the kiva contains a niche in the west wall that held a mineral the Girl Scouts identified as limonite.

The kiva had two floors that were separated by fill that ranged in depth from 1 cm to 10 cm. The top floor was a rough adobe surface with some flagstones, while flagstones predominated on the lower level, particularly around the hearth. The difference between the rough and finished floors led the excavators to conclude that the lower floor represented the primary occupation. There were signs of burning on the lowest floor; a number of the slabs were blackened. The fill between the two levels, which contained charcoal fragments, pieces of oxidized adobe, sherds, animal bone, ground stone fragments, and charred corn, suggests the material had been taken from a midden area.

There is evidence of sooted plaster and flagstones in the kiva, but burning appears to have been localized and not fierce. Lower portions of the walls (where plaster was still present) to the north and southwest of the hearth are smoke-blackened. Field notes indicate that most of the surviving wood did not burn; the excavators encountered numerous rotting beams and latillas that were too friable to bring in from the field (LOA 95PLE.015). The cutting dates and ceramics place this kiva in first half of the 15th century. Of the 28 small charcoal fragments submitted for dating, two produced 1431r dates. An explanation for the

dearth of tree-ring dates is provided by the excavators, who noted that many of the wood beams they encountered were disintegrating wood and had not been burned. Most of the kiva's burned wood samples that were sent to the LTRR were small, undatable "nut-sized" fragments.

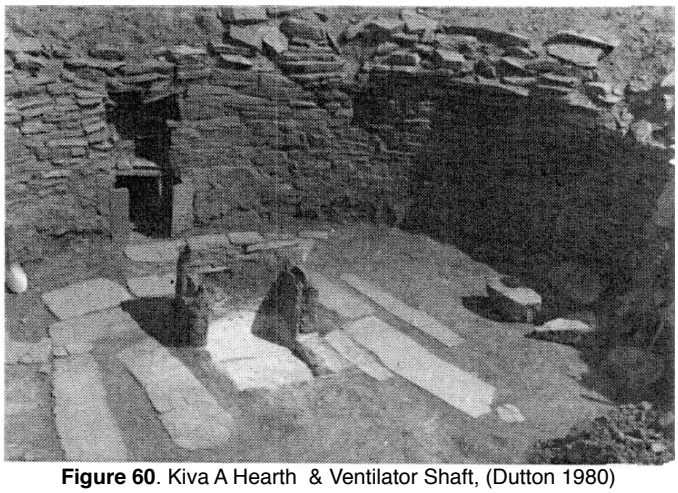


Figure 60. Kiva A Hearth & Ventilator Shaft, (Dutton 1980)

The datable ceramic types are consistent with the 1431 tree-ring date, although there is insufficient information linking excavation levels and ceramics to examine the deposition of different ceramic types through time. Of the 990 sherds from the kiva, 91 samples are datable Glaze types. 46 Glaze A (AD 1325 -1435), 29 Glaze B (AD 1400-1460), and 10 Glaze C (AD 1425-1500) representing 45%, 29%, and 12% of the datable assemblage, respectively, with small proportions of Santa Fe Black-on-white (2%), Galisteo Black-on-white (1%), and biscuit wares (3%). Twelve percent of the datable ceramics in the kiva's fill were Glaze C, the latest glazeware type identified in size at Pueblo Largo. The corrugated ceramics (n=206) are smeared indented corrugated, which is consistent with assemblages at other northern Rio Grande sites appearing during the Early Classic Period. In contrast, the preponderance of the datable ceramics from Room I-3, the only excavated Plaza A room, are Glaze C (76%), admittedly from a very small sample. Both Kiva A and Room I-3 had 98% glazewares versus 2% black-on-white. It remains an open question whether there are additional, later kivas in the Plaza. Dutton did not trench the plaza, she only investigated the kiva Nelson had identified.

Kiva B

Kiva B is a circular, semi-subterranean masonry structure in the cluster of roomblocks, plazas and kivas that are located in the central portion of the site between Plaza V, to the northeast and Roomblock IV to the southwest. Nelson (1914:70) mapped Kiva B as a shallow depression near Midden B because he was not certain it was a kiva. The structure is located approximately 25 meters west-northwest of the midden in Plaza B. There is limited information about this structure because Dutton's exploratory work did not reach the floor in 1954 and the Girl Scouts did not resume work on Kiva B during the remaining two years at Largo. The Girl Scouts set out an exploratory trench (LOA 95PLE.013) and excavated to a depth of approximately one meter (Dutton 1980:80). Wall construction appears to be similar to Kiva A's but with a diameter of 9.1 m, Kiva B is significantly larger than Kiva A, coming close to having a diameter of a "great kiva."

The absence of a record for Kiva B in the LTRR files suggests the excavators did not collect wood samples. However, if we assume this structure was used by the residents of the nearby roomblocks, then the 42 cutting and near-cutting dates from Nelson's Building IV suggests Kiva B was utilized during the first half of the 15th century. The Building IV dates collected by Dutton and Sidney Stallings range from AD 1295 to AD 1439. With the exception of four pre-1400 dates, all cutting and near-cutting dates in Building IV fall between 1407 and 1439. The ceramics from the kiva-fill are consistent with this date

Figure 61. Kiva B with Midden B Trench in background, 1954.
(Dutton collection, MIAC/ LOA, Cat. # K3-043, B. Bauer photo.)

range. Of the 665 sherds representing datable ceramic types, 82% are Glaze A. The presence of Glaze B and Glaze C is limited to 1% of each type. Eleven percent of the datable ceramic types are biscuit wares and 3% are Galisteo Black-on-white. The vast majority of the utility wares are smeared indented corrugated that is common in the northern Rio Grande region during the Classic Period, beginning about AD 1300. Statistically, the proportions of the painted ceramic types from the midden sample are similar to the ceramics from the Kiva B fill.

Because the excavators did not reach the kiva floor, critical questions about the kiva cannot be addressed. The absence of wood samples means construction and/or repair dates cannot be determined, nor can it be ascertained whether the structure was roofed or open. Even without tree-ring dates, the ceramics in the fill are consistent with the nearby midden potters and the chronometric dates from nearby rooms point to use in the first half of the 15th century.

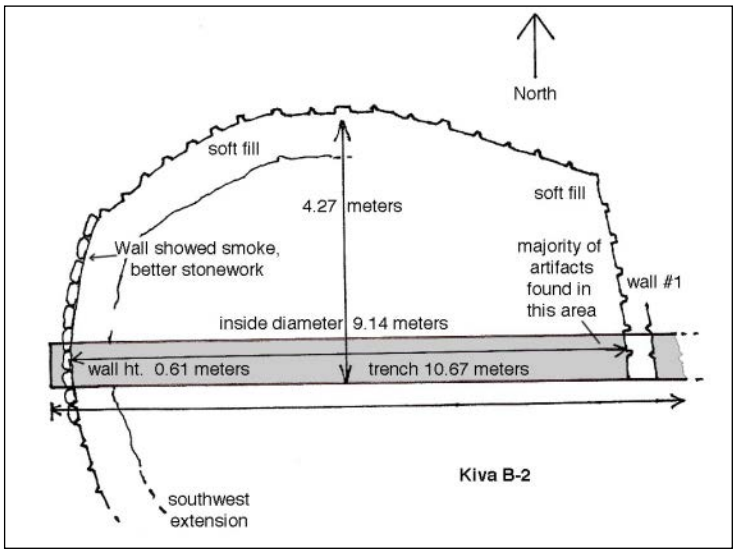


Figure 62. Kiva B plan view adapted from Girl Scout drawing
(Dutton collection, MIAC/LOA, file 95PLE.031)

World Quarter Shrine

The site of Pueblo Largo includes a World Quarter Shrine (Duwe and Swarts 201; Fowles, Severin 2009) on a rocky outcrop or small mesa, approximately 180 m southeast of Roomblock I (1914:70-71). We did not locate any archival evidence that Dutton explored

the shrine, although the Girl Scout camp is less than 120 meters to the northeast. Nelson, as was his practice during his Galisteo Basin work, included a discussion of the shrine in his site description and map.

Figure 63. World Quarter Shrine 2008, author's photo.

What remains of the standing north and west walls are of "roughly constructed" (Nelson 1914:70) stone that vary in height from 60 cm to 120 cm, surrounding a bedrock floor. The south and east walls, originally built on the talus slope, have collapsed. Nelson estimated the enclosure had an area of 2.3 m^2. Access appears to have been through an opening in the east wall. Opposite this opening was an upright sandstone slab Nelson described as a "well-preserved, graven, human-like image" (1914:70) that had been pecked into the stone. He identified an outcrop of similar sandstone approximately 400 m west where the slab may have been quarried. This feature measured 2.3 m from the modern ground surface to its top, with an additional 46 cm wedged into a crack in the bedrock. Its width is 76 cm and it is approximately 8 cm thick. Buried nearby were several unusually shaped concretions that Nelson interpreted as fetishes. Nelson described the large, pecked figure as "somewhat lacking in proportions…[it] is nevertheless interesting, particularly so on account of two horn-like projections on the head, two additional pointed projections on both sides of the lower part of the trunk and lastly, a deep and well-defined slit in the center of the chest" (1914:70-71). Nelson shipped this object to the American Museum of Natural History in New York, where we believe it still resides. He identified a second worked slab showing traces of an anthropomorphic figure and possibly a third, large unworked slab, within the shrine. These slabs have been removed from the site.

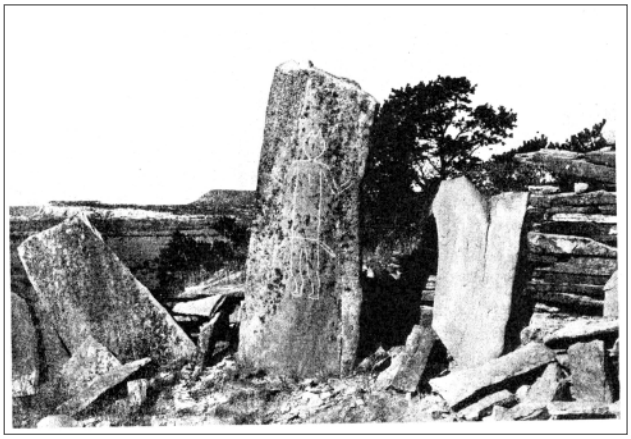


Figure 64. World Quarter Shrine showing engraved vertical slabs, (Nelson 1914:70)

One, perhaps two small shrines have also been tenatively located. In 2010 during a visit to Pueblo Largo, Dr. Richard I. Ford identified a small shrine south of Plaza A. The "tower" on the first bench below Plaza V's northeast roomblock may also be a shrine.

Notes: Kivas and Shrines:

1. Kiva A and B are Dutton's designations. Nelson identified Kiva A as "Kiva" and the remaining three in Roomblock IV with question marks, suggesting he was uncertain these depressions were kivas.

WAS PUEBLO LARGO BURNED?

Nelson's cryptic closing in his report on test excavations at Pueblo Largo was that ". . . indications are not wanting that its abandonment was forced by some human agency." (Nelson 1914) Evidence of burned rooms across a site can be an indicator of an attack, although there are numerous reasons why a room might show evidence of burning, including fumigation, ritual closing activities, and the spontaneous ignition of improperly stored corn. We reviewed all references to burned materials in the 40 structures excavated by Nelson and Dutton's Girl Scouts. The categories of burned material consisted of oxidized walls, blackened walls, burned adobe, charcoal fragments, burned corn, and burned beams and latillas. We also looked for unburned wood, as an indicator that the burning was localized within the excavated area, and did not involve the entire structure. We referred to the Laboratory of Tree Ring Research records to identify the presence of burned and unburned wood samples.

The authors of this paper believe that the preponderance of evidence indicates that Largo was not burned. Of the 13 rooms excavated by Nelson, only one was categorized as burned in his report. Of the 40 structures excavated by Nelson or Dutton, 20 had no burned material, 11 of the rooms with burned material also contained unburned structural wood, so that the entire structure did not burn, and 14 had charcoal fragments which mostly came from hearths.

Of the 410 wood samples analyzed by the LTRR, 229 came from the Plaza V area. Of those, 129 were charcoal fragments, 73 had measurable diameters, most likely architectural wood such as beams or cross-sections, and 69 of the 73 were "rotten" with no evidence of burning. Rotten, unburned structural wood was found in three of the four different sections of the Plaza V roomblocks. Thus a case can be made that no portion of the Plaza V area appears to have been completely burned. In Roomblocks I, II, III, and IV, which are the later parts of Pueblo Largo, 4 of 11 structures, (Kiva A, IV–e-3, IV-f-2, excavated by Dutton, and IV-1, excavated by Nelson) were described as having burned adobe and blackened or oxidized walls.

Figure 65. Room IV-2, Roomblock IV, "Dutton's burned room", photo courtesy of Wolky Toll

If the burning had been the result of an attack, it would not have been unusual for human remains to corroborate an attack; bodies unburied and evidence of fatal injury. However, Eric K. Reed (Reed 1963) examined the 22 sets of human remains that Dutton excavated. He found no osteological evidence of violence in Largo's assemblage, and field notes indicate the individuals had been formally buried rather than left unburied on floors and in roof fall. Finally, abandonment from violence would have resulted in burning room timbers falling into the structure, leaving numerous artifacts, such as whole bowls and jars, and other household goods on the floor. Nelson found no whole vessels, and there is only one whole vessel from the Dutton excavations. Thus the absence of whole vessels from floor contexts of 40 structures argues for an orderly abandonment process; not destruction by sudden violence.

SUMMARY AND CONCLUSIONS

Pueblo Largo (Long Village) is the southeastern most and smallest of the eight large Galisteo Basin pueblos occupied during the Classic Period (A.D. 1325-1600) of the Northern/Central Rio Grande cultural sequence. Largo contained 489 shaped sandstone ground-floor rooms and half as many second story rooms, for a total of 734, as estimated by Nels Nelson in 1912. The others consisted of San Marcos (3,096 rooms), San Lazaro (2,911), San Cristobal (2,468), Pueblo She (2,315), Pueblo Blanco (2,175), Galisteo Pueblo (1,500), and Pueblo Colorado (1,321).[1] Largo was no longer inhabited at the time of Coronado's expedition in 1542-3.

Pueblo Largo is situated on an escarpment just west of Escavada Wash (also called Estacada), just west of highway 285, about 4-5 miles south of San Cristobal Pueblo. Escavada Wash flows north into Arroyo Jaspe, then northwest into Arroyo San Cristobal, then west into the Galisteo River, just south of the town of Galisteo. Pueblo Colorado is barely 2 miles to the southwest.

Each of the three sectors of the site is dominated by a different ceramic type. We analyzed 25,372 sherds from 21 rooms in Roomblock V; one structure just outside Roomblock V that Dr. Dutton called a tower; one room and a kiva (diameter 21.9 feet) in Plaza A; two rooms in Roomblock IV; a near-great kiva (diameter 29.86 feet) and a midden trench in Plaza B. Overall utility wares numbered 35.9% of the assemblage, Glazewares 30.2%, and Black-on-whites 11.2%. The remaining 22.7% represented indeterminate types. Of the small 3.8% percent (971 sherds) constituting trade wares, 5.1% represent early, pre-1300 Middle Rio Grande and Eastern Arizona types; St John's Black-on-red, and Polychrome (7 sherds), Cibola White ware (15), and 21 Chupadero Black-on-white from the contiguous south.[2] The remaining 94.9% of trade ware were later Wiyo Black-on-white, Tewa utility wares, black-on-white Biscuit A and B sherds.

The Plaza V area is the oldest sector of the pueblo where the majority of the carbon-paint, black-on-white ceramics (66% of the datable ceramic types) is found. With the exception of three 14th century tree-ring dates, the massive Roomblock IV dates to the first half of the 15th century. This is the area where Glaze A predominates (84% of the datable ceramic types). Plaza A and Roomblock I produced only two tree-ring dates (both 1431r) and they fit with the chronology of Roomblock IV. On the other hand, the ceramic assemblage of Plaza A has the highest proportion of glazes B and C (23% and 22 % respectively of the datable ceramic types), suggesting that the southernmost portion of the pueblo was occupied for decades beyond 1431, and perhaps later than Roomblock IV.

Typing of the Pueblo Largo ceramic assemblage demonstrates that temporally the types correlate well with the site's tree-ring dates. The 117 cutting or near-cutting tree ring dates provide solid evidence for the life span of the pueblo. The earliest cutting or near-cutting date is AD 1230v from Kiva XX, which puts the initial occupation near the end of the Early Coalition Period. The latest cutting or near-cutting date, 1439 +r, is from an unidentified room near Nelson's Room 1 in Roomblock IV. All but three of the Early and Late Coalition period dates, prior to AD 1330, are from the three roomblocks surrounding Plaza V. Their range indicates the initial occupation around Plaza V was concentrated between AD 1260 and 1340. Dates from the rest of the pueblo are later, suggesting that a second, larger population began construction of Roomblock IV around 1400. There are only 4 cutting dates in the decades from 1330 to

1400, which may indicate a hiatus in both building and occupation, followed by a resurgence of immigration by a larger number of people, during which some 680 rooms in Roomblocks I, II, III, and IV (90% of the pueblo approximately) were constructed.

Occupation of the pueblo probably ended by 1460. The ceramics support this hypothesized end date; we found one tentatively identified Glaze D (1470-1515) rim sherd, and no Glaze E (1515-1700) samples. The tree-ring dates also suggest that Plaza V may have been largely or wholly unoccupied between 1340 and the beginning of the 14th century. The cutting dates indicate there was some activity around Plaza V after 1400. What we cannot determine from the excavation record is whether these cutting dates indicate people were again living around Plaza V, or whether they were returning to this portion of the site to conduct rituals or other activities.

The ceramics and tree-ring dates help place Largo within the chronology of the Galisteo Basin and its periphery. Largo's earliest construction phase coincided with increased aggregation in the Galisteo Basin.[3] Several sites have chronometric and/or ceramic evidence of Developmental and Early Coalition period occupations that precede the occupation of Largo, including Pueblo San Marcos (LA 98), Pindi (LA 1), Lamy Junction (LA's 27, 362-368, 31774-31779, and 11239), and San Cristóbal (LA 30). The tree-rings tell us that construction accelerated around Plaza V during the last several decades of the 13th century (Late Coalition Period) when pueblo construction was ramping up throughout the Galisteo Basin. In addition to continued occupation of the earliest pueblos, building during the Late Coalition Period began at the pueblos of Manzanares (LA 1104), Burnt Corn (LA 359), Upper Arroyo Hondo (LA 76), Las Madres (LA 25), Shé (LA 239), and San Lazaro (LA 91-92). By the late 15th century, a number of the pueblos, including Largo, Upper and Lower Arroyo Hondo, Burnt Corn, Chamisa Locita, Lamy Junction, Las Madres, Manzanares, Pindi, and Shé were no longer occupied. By the time Coronado's men crossed the Galisteo Basin, (numerous times in 1542) only two pueblos were described as occupied. Scholars argue about which two. During the Spanish Period, 1600-1821, four Galisteo Basin pueblos were occupied and received Spanish attention. Two became sites with Spanish missions with resident priests, (Galisteo and San Marcos), and two were *visitas* where priests visited periodically to say mass, (San Lazaro and San Cristobal). Only Galisteo was resettled after the Pueblo Revolt of 1680-94, and that ended during the 1700s.

While it was relatively simple to identify Largo's residential and communal/ceremonial architecture, there were two structures that we found difficult to interpret. Visible in 2010 is a scatter of architectural stone and a two-meter long rough masonry wall that is several courses high. It is situated on the first bench east of the Plaza V escarpment. There is no archaeological evidence to support the tower designation. Architectural stone in the vicinity is limited and the low wall may be the remains of a group of small rooms. Another interpretation, offered by the Girl Scout who excavated the "tower" is that the rock alignments are similar to shrines Nelson had described in the Galisteo Basin (LOA PLE95.021). The "tower" seems to be a case where the very act of naming makes something real. We conclude that the low wall and scattered masonry slabs, apparently outside of the north roomblock's line of architecture, constitute a structure of unknown function.[4]

Based on Nelson's map and Dutton's excavations, the pueblo contains at least five kivas. Four are circular, subterranean plaza kivas. The fifth structure and possible kiva is the second architectural puzzle. Dutton called the room with one curved corner wall that is located in the eastern roomblock of Plaza V, a

corner kiva or Kiva XX. With the exception of the curved corner, the room conforms to the rectangular plan of other Largo rooms. Kiva XX may be similar to corner kivas documented at two other sites with Coalition Period components near the Galisteo Basin. However, we found the kiva designation problematic because, aside from a photograph of the corner flue and the still-visible curved corner, there is no evidence to support Dutton's contention the room was a kiva. Excavation notebooks are missing. We could not find verifiable information about floor features, including a turkey pen identified by Dutton. The haphazard nature of simply constructing a curved wall between two already existing outer walls of rooms in a roomblock and the presence of three ground-floor entrances and a corner flue are not consistent with the features of the corner kivas at Pindi and Arroyo Hondo or any other Galisteo Basin kivas. While we give Dutton the benefit of the doubt about the identification of this "kiva", we do so with reservations because of the paucity of supporting evidence. Importantly, if "Kiva XX" is not a kiva, then Pueblo Largo had no public or ceremonial architecture that has been identified to date, until the later wave of migrants and building, some 100 years or more after Largo's initial habitation.

Two, perhaps three shrines have been located at Largo. South of the main residential area, is a world-quarter shrine that was mapped by Nelson. It is situated on a ridge approximately 235 meters south of Roomblock I and 425 meters from Roomblock V. Photographs by Nelson show two life-size anthropomorphic figures carved on sandstone stone slabs. Nelson sent these to the American Museum of Natural History in New York. A second, smaller shrine of upright stone slabs south of Roomblock I and Plaza A was identified by Richard I. Ford during our visit to the site in 2010. If the architecture of unknown function that Dutton considered a tower, is not a tower, but a shrine, then three shrines surrounding the pueblo have been located.

Nelson thought that Largo had been abandoned because of some human action, presumably a raid that included burning. While there is evidence of burning in some structures, the causes of the fires are undetermined and the extent of the burning is limited. Only four of the rooms excavated by Nelson and Dutton, including kivas A and B, have plastered walls that have been described as sooted or oxidized. The burning that Nelson and the Girl Scouts observed could be the result of an attack, but burning could also reflect closing ceremonies, fumigation, or combustion of improperly stored corn. Burned material in room fill was not quantified in the Girl Scout notebooks, and roof fall, burned or unburned was seldom identified. Over 90% of the structural wood collected from Largo was unburned and described as "rotten" by the LTRR. The osteological analysis of 21 individuals did not produce evidence of violence and all individuals appear to have been formally buried rather than left where they died. There were no grave goods associated with any of the burials. The authors of this report conclude that the great preponderance of evidence indicates that Pueblo Largo was not destroyed by fire.

Dutton looked to the burial population for evidence of a migratory population from the Mesa Verde region. Erik Reed did not find any definitive osteological evidence that distinguished the Largo population from the general Pueblo III populations of the Rio Grande and the San Juan regions. Genetic anomalies were present in two separate individuals, but at the time of Reed's analysis, there were few burial populations available for comparative studies. Ortman used Reed's craniometric data, collected from the skeletal remains, along with those from Las Madres and San Cristobal as representing the "Tano" regional sample in his bioarchaeological analyses of Tewa origins and concluded that these remains definitely show a strong biological connection with the Mesa Verde region (Ortman 2010).

Dutton left a remarkable corpus of material related to her excavations at Pueblo Largo. The major shortcoming is the fact that she did not finish the analysis of her data and the full site report was not published. If she had completed the project, the final report would have been one of only two comprehensive reports on Galisteo Basin sites that have ever been produced.[5] Moreover, it must be recognized that the excavation of Largo had a social significance beyond the archaeological discoveries. The site was excavated by crews of Girl Scouts who called themselves "Dutton's Dirty Diggers." Although a few women were obtaining advanced degrees in archaeology at that time, their roles tended to be limited to laboratory analysis[6] and did not include pushing wheelbarrows or wielding shovels. We wish the Dirty Diggers' recording format had focused more on the details of the excavation and the architecture of the rooms and less on enumerating every artifact, or possible artifact, they found. However, the Diggers' photographic record of the experience, their obvious pleasure and excitement while getting filthy dirty in the heat of the Galisteo Basin summer makes it clear that the Largo project was not only a major contribution to Southwestern archaeology, it was a priceless, life changing-experience for many young women growing up in the 1950s.

In summary, Pueblo Largo is a multicomponent pueblo, with two occupations. Neither occupation appears to have ended because of internal or external violence. The initial occupation began during the first half of the thirteenth century, when a relatively small population, with a need to build at a defensive location, settled on the east-facing promontory overlooking Arroyo Estacada. This initial phase, which coincided with the construction of a number of other pueblos in the Basin, lasted approximately 80 years. There is some evidence that a few people, perhaps a single household, remained behind after 1340. Following a hiatus of approximately 50 years, a larger, but short-lived settlement was constructed to the south of the original room blocks during the first half of the fifteenth century. Dutton chose to excavate Largo because she was interested in finding material that would link the pueblo's initial construction with the late 1200s exodus from the Mesa Verde region. Dutton, in an article in 1980, stated that "What we had unearthed… gave no evidence that Mesa Verdeans had occupied this pueblo. Architectural expressions were Rio Grande type…and ceramics were not like those of Mesa Verde." Our purpose has been to bring Largo to light, not to enter the ongoing debate about population growth vs. migration, but we do note that the majority of non-local ceramics throughout the site after 1300 indicate the Largo community had extensive ties and similarities with people to the north, in the Tewa Basin.

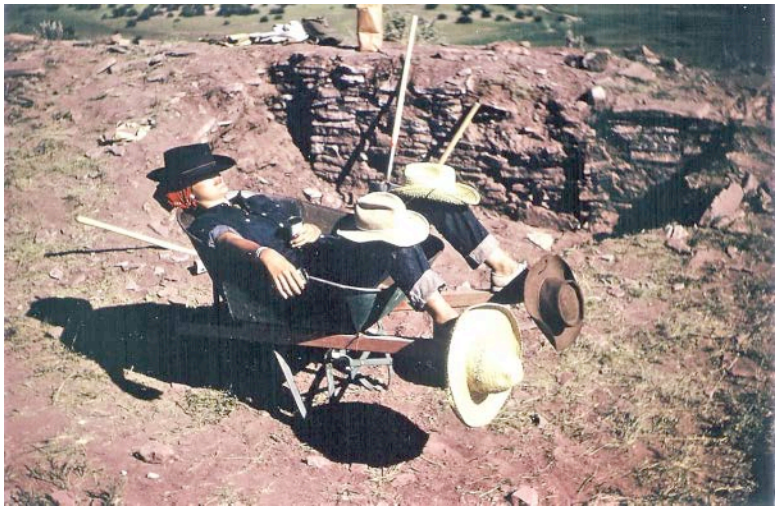


Figure 66. Girl Scout, Claire "Squeak" Yeagley, one of "Dutton's Dirty Diggers" Pueblo Largo 1955. Photo courtesy of Mary Anne Stein.

Notes: Summary and Conclusions:

1. These data are derived from the Toll and Badner (2008) report on surveys of sites listed in the Galisteo Basin Archaeological Sites Protection Act and Stewart's 2013 Cultural Landscape of the Greater Galisteo Basin, North-Central NM. The only other extensive survey of Basin sites was conducted by Nels Nelson a century ago.

2. Two additional non-local types, 62 sherds that refit into several partial Tularosa Fillet Rim bowls and 4 large Tularosa Black-on-white jar sherds are in the LOA Largo ceramic collection. Dean Wilson and Leslie Cohen typed the sherds. We have chosen not to include them in our analysis because the provenance of these samples is problematic. In contrast to the rest of the assemblage, there are no data on the field bags and the sherds lack catalogue numbers. Furthermore, the discovery of these obvious non-local types is not mentioned in the field notes we have reviewed.

3. There is ongoing debate about whether this increase in population, signified by the construction of pueblos as opposed to the earlier, small, dispersed sites, reflects the aggregation and increase of a resident population or an influx of people from other regions of the southwest, particularly the Mesa Verde region. Dutton attempted to answer this question sixty years ago through her work at the Galisteo basin sites of Pueblo Largo, and Las Madres. Sixty year later, the issue continues to be debated.

4. See Thompson, Varien, and Kenzle (1997) for a thorough discussion of "prehistoric architecture with unknown function."

5. The School of American Research (now the School of Advanced Research on the Human Experience) produced a multi-volume report on Arroyo Hondo in the 1980s and 1990s. Today, it remains the only comprehensive report on a Galisteo Basin site that is accessible to the public and most archaeologists.

6. The exception to this unspoken rule was women, like Bertha Dutton and Marjorie Lambert, who had been mentored by Edgar Lee Hewett of the University of New Mexico.

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APPENDIX

Five previously Unpublished Reports on Pueblo Largo requested by Bertha Dutton:

A. *Maize of Pueblo Largo*; David Brugge, undated, ca. 1957

B. *The Identification of Bird Bone Artifacts from Pueblo Largo (LA 183) New Mexico;* Lyndon L. Hargrave; 1961

C. *Flaked Stone Artifacts; Pueblo Largo LA183 and Las Madres LA25*; Kenneth Honea, undated, ca. 1957

D. *Faunal Identification of Bone Artifacts: Mammals; Pueblo Largo (LA-183) New Mexico*; Thomas W. Mathews, Southwest Archaeological Center, N.P.S., Gila Pueblo, Globe, Arizona. undated, ca. 1957

E. *The 14th Century Populations of the Galisteo Basin: Skeletal Remains and Burial Methods*; Erik K. Reed ca.1956-1957

F. Tables listing the H.P. Mera ceramic collection and Bertha Dutton ceramic collection.

G. Table of All Tree-ring samples from Pueblo Largo

H. List of Partial vessel ceramic collection from Pueblo Largo in the archives at the Museum of Indian Arts and Culture, Santa Fe.

Appendix A

MAIZE OF PUEBLO LARGO

David M. Brugge
Transcribed typescript of unpublished report, not dated, ca. 1957, prior to May 1957, (LOA 95 PLE.005)

A large quantity of charred maize was recovered from Pueblo Largo during excavations in 1951, 1952, 1953, and 1954. These collections fall into three main groups, two of fragments of cobs from stratigraphic excavation of Refuse Mound B and from the fill of several rooms associated with Plaza V. The third group consists of masses of charred ears from Room IV-e(3), which had been in use as a granary at the time it burned.

Twenty-four cobs from the Refuse Mound B and thirty ears from Room IV-e(3) were studied in detail. In addition a number of cobs from both these locations and 169 cobs from six of the Plaza V rooms were checked for row number. (See Tables I & II)

Three racial groups were represented in the material. Two of these, the "Basketmaker" Sub-race of the Mexican Narrow Ear Race and "Eastern" Sub-race of the Guatemalan Big Grain Race (Carter, George E. & Anderson, Edgar, 1945, p. 300), were present in all three locations. The other, which may be termed the "Southwestern" Sub-race of the Guatemalan Big Grain Race, was present only in Room IV-e(3).

The Basketmaker Sub-race of the Mexican Narrow Ear Race, as found at Pueblo Largo, is characterized by cigar shaped cobs, row numbers ranging from 8 to 13 with an average of about 12 or 14 slender cobs, small shank diameters, intermediate to long upper glumes with some trace of the venation apparent, small squarish cupules with large broad rachis flaps and weakly developed sulci.

The Eastern Sub-race of the Guatemalan Big Grain Race, for which a better term would perhaps be "Old Southwestern" Sub-race, as found at Pueblo Largo, is characterized by cobs with enlarged butts, low row numbers averaging about 10, very large shanks, short upper glumes with none of the venation visible, large thin cupules with long narrow rachis flaps and prominent sulci. The "Southwestern" or "Recent Southwestern" Sub-race of the Guatemalan Big Grain Race, as found at this site, is similar to the latter race, but the cob is sometimes somewhat tapered, the row numbers average 12 to 14, and the rachis flaps are often rather small. It is probably the product of a slight mixture of the Mexican Pyramidal Race (Anderson, Edgar, 1946, p. 171) with some Mexican variety of the Guatemalan Big Grains.

The kernels from Room IV-e(3) were greatly distorted by burning, and little can be said about them except that they were largely wedge shaped. Due to the distortion, they were not measured and not used in the racial classifications.

Most of the specimens were not clearly assignable to any of these sub-races, but were hybrids, and the final result of this hybridization would seem to lead to modern Pueblo maize. This was especially obvious in the collection from Room IV-e(3), which resembled Pueblo maize in most respects except size. The origins of these sub-races are not yet well known. The Basketmaker Sub-race derives, as the name implies, from the maize of the Basketmakers and is presumably the type with which the Anasazi began agriculture. Its source was probably Mexico. The "Eastern" Sub-race is relatively late in the Anasazi area, having arrived at least by 1250, as this material indicates, and probably somewhat before this. It is

commonly thought to have been received form the eastern United States (Carter, George E. & Anderson, Edgar, 1945, p. 316), but was present much earlier in the Mogollon area (Cutler, Hugh C., in Martin, Paul S., et al, 1956, pp. 177-8) and my have diffused directly from Mexico to the Southwest. The "Recent Southwestern" Sub-race has not been previously reported except in ethnological collections and although its characters indicate Mexico as its source, archaeological proof of this is lacking so far. Mexican Pyramidal has long been recognized as one the components of Pueblo Maize (Carter & Anderson, 1945, p. 300). It is found mixed slightly in Basketmaker maize, but not enough so to account for the strength of its influence in Pueblo maize. The evidence of the maize from modern Pueblo Largo suggests that Mexican Pyramidal germ plasm was increased by a second sub-race of Guatemalan Big Grain, a hybrid of the two with Guatemalan Big Grain predominating, which was introduced to the upper Rio Grande area in very late prehistoric times.

Lot	**# of Specimens**	**Greatest length**	**Diameters**				**Kernel (mm)**		**Cupule**
			Cob	Rachis	Pith	Shank	Width	Thickness	Width
Rm IVe(3)	30	10.5	1.6	.9	.5	1.0	4	3.2	6
Trash Mound B	24	—	—	.8	.4	--	3	3.2	5

Lot	**Sulci**	**% of each race**		
		MNE	Mex GBG	GBG
Rm IVe(3)	None prominent	33	47	20
Trash Mound B	Slight-moderate	21	75	4

Table I. Comparison of maize from Trash Mound B and Room IV-e(3). Note the decrease in racial hybrids in Rm. IV-e(3), which is later than the majority of the trash Mound material.

Lot	# of Specimens	8	10	12	14	16	18	Average Row
Rm IVe(3)	67	3	4	52	31	7	3	12.9
Plaza V, Room fill	169	12	20	48	16	4	--	11.6
Trash Mound B, Level 1	31	6	29	36	23	6	--	11.9
Trash Mound B, Level 2	43	12	26	48	14	--	--	11.3
Trash Mound B, Level 3	102	7	29	50	13	1	--	11.4
Trash Mound B, Level 4	87	16	21	47	13	3	--	11.3
Trash Mound B, Level 5	34	9	29	44	15	3	--	11.5
Trash Mound B, Level 6 & 7	21	5	19	51	25	--	--	11.9
Kapo	112	7	24	47	17	5	--	11.6

Table II. Average row numbers and comparisons of the various groups by percentage. Percentages for the maize from Kapo, a ruin of about the same age in the Chama Valley, are also given because of their great similarity (Wendorf, Fred, 1953). Figures from the author's personal files, however). Note that row number tends to decrease with time until the latest two most recent lots, Level 1 of the trash mound and Room IV-e(3), when there is a midden increase.

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Appendix B

THE IDENTIFICATION OF BIRD BONE ARTIFACTS from Pueblo Largo (LA 183) New Mexico

Lyndon L. Hargrave, author
Transcription of typewritten paper, dated October 27, 1961 (LOA 95 PLE.009)

Among some prehistoric peoples of the Southwest, bird bones were a raw material from which tools and ornaments frequently were made. Natural bird bones, and those humanly altered, thus must be considered in a study of the economics of any archeological site. Of primary consideration, however, is the source of the raw material, which, in this case, is determined by identifying the bird species from which the bones came. This may be done by a positive or by a negative approach.

A positive approach to the identification of unaltered bones is by a direct comparison to known material evidencing diagnostic characters. In the case of altered bones, such as artifacts, frequently however, identification may be made by a circumstantial type of evidence, which may be considered a negative approach in contrast to the formal, positive method mentioned above. This negative approach is begun by eliminating from consideration the bones of all species of birds which are the wrong size. Identification of the altered bone is then made by determining from which bone of which species the altered bone (artifact) could be made exactly as it is yet which would retain only those characters which would be revealed by the unaltered bone if it was similarly worked. The species from which the artifact bone was acquired cannot be named, of course, if the characters of the altered bone (artifact) are found to be identical for bones of more than one species. In such cases order, family, or generic names are used, as in the case of some hawk bones listed herein. Moreover, when altered bones are identified and named, the identification must be of a species within the realm of probability or, if not, its identification and occurrence should be plausibly explained.

In reporting upon the individual bones, for a catalog number I have used that part of the inked legend which seems to refer to individual bones, instead of assigning a catalog number in our system. The numbers used, as "#12/95," etc., are entered in our catalog system composed of a 3-way index by number, species, and site with identical data on each card. Therefore, any institutional change in cataloging these specimens should provide a reference to the catalog numbers on file here.

The bone artifacts reported upon herein, were excavated by Dr. Bertha Dutton, Museum of New Mexico, from Pueblo Largo in the Galisteo Basin of Santa Fe County, New Mexico, and were submitted to me for study, which may be summarized as follows:

(1) Total number of bird bone artifacts ……...90
(2) Number identified to species……..59
(3) Number identifiable (?) but not identified……...2
(4) Number not identifiable…….29
(5) Species identified……..8
- (a) Crane, Sandhill (*Grus canadensis*)……5
- (b) Eagle, Golden (*Aquila chyrsaetes*)……....5
- (c) Hawk, Ferruginous (*Buteo regalis*)……....1
- (d) Hawk, Red Tailed (?) (*Buteo jamaicensis*)……..…..2
- (e) Hawk, Rough-legged (*Buteo lagopus*)……...1
- (f) Owl, Great-horned (*Bubo virginianus*)……...2
- (g) Raven, Common (*Corvus corax*)……...4
- (h) Turkey (*Meleagris gallopavo*)…….39

(6) Bird skeletal elements used in the manufacture of these bone artifacts……..6
- (a) Femur
- (b) Humerus
- (c) Radius
- (d) Tarsometatarsus
- (e) Tibiotarsus
- (f) Ulna

(7) Bird skeletal elements used in the manufacture of these bone artifacts by species:
- (a) Sandhill Crane – humberi and ulnae.
- (b) Golden Eagle – radius and ulnae.
- (c) Ferruginous Hawk – radius.
- (d) Red-tailed (?) Hawk – femur and ulna.
- (e) Rough-legged Hawk – humerus.
- (f) Great Horned Owl – radius and ulna.
- (g) Common Raven – humerus and ulna
- (h) Turkey – humerus, radius, tarsometatarsus, tibiotarsus, and ulna.

Specimen List

22/95 Turkey (*Meleagris gallopavo*) – tube cut from the distal end of a left tibiotarsus.
22/3 Unidentifiable.
22/6 Unidentifiable.
22/9 Golden Eagle (*Aquila chrysaetos*) – tube cut from proximal half (just above nutrient foramen) of left ulna.
22/16 Turkey (*Meleagris gallopavo*) – tube cut from end of a left ulna.
22/18 Unidentifiable.
22/21 (?) Common Raven (*Corvus corax*) – tube cut from the distal section of the shaft of a left humerus. Identification supported by the presence of the tip of the impression of brachialis anticus.
22/22 Buteonine Hawk (*Buteo*, sp?) – tube cut from the distal end of the shaft of the right femur of a medium-sized hawk (*B. jamaicensis, B. lagopus, B. regalis*, or *Parabuteo unicinctus*?).
22/23 Turkey (*Meleagris gallopavo*) – tube cut from the distal section of a right ulna.
22/24 Unidentifiable
22/25 Unidentifiable
22/26 Turkey (*Meleagris gallopavo*) – tube cut from a distal section of the left ulna.
22/27 Turkey (*Meleagris gallopavo*) – tube cut from a distal section of a right ulna.
22/28 Unidentifiable.
22/29 Unidentifiable.
22/30 Unidentifiable.
22/33 Unidentifiable.
22/38 Unidentifiable.
22/39 Common Raven (*Corvus corax*) – tube cut from the distal end of a left ulna.
22/40 Turkey (*Meleagris gallopavo*) – split section from the anconal face of the proximal half of the right humerus.
22/41 Turkey (*Meleagris gallopavo*) – tube cut from the distal half of the left radius.
22/43 Turkey (*Meleagris gallopavo*) – tube cut from the proximal half of a right radius.
22/44 Unidentifiable.
22/46 Sandhill Crane (*Grus canadensis*) – tube cut from the distal end of a left ulna the size of the small crane (*G.c. canadensis*); might be the same bone as Nos. 22/69 and 22/77.
22/47 Sandhill Crane (*Grus canadensis*) – an ornamental tube made from the central portion of the shaft of a left humerus of the large race, *Grus canadensis tabida*, the width of the bone (15.5 mm)

being the same as our modern skeleton #270. The notch ("scar") at the wide end was made by man.

22/51 Turkey (*Meleagris gallopavo*) – tube cut from the right ulna.
22/55 Unidentifiable.
22/57 Unidentifiable.
22/57 Identifiable but unidentified.
22/59 Common Raven (*Corvus corax*) – section from the distal end of the shaft of a left humerus, as also shown by the presence of the proximal tip of the impression of brachialis anticus.
22/60 Golden Eagle (*Aquila chrysaetos*) – tube from an ulna. Nos. 22/60 and 22/62 could be from the same bone.
22/61 Turkey (*Meleagris gallopavo*) – tube cut from the proximal section of a left ulna.
22/62 Golden Eagle (*Aquila chrysaetos*) –tube cut from an ulna. Nos. 22/60 and 22/62 could be from the same bone.
22/63 Golden Eagle (*Aquila chrysaetos*) – a perforated tube cut from the distal half of a left ulna.
22/66 Buteonine Hawk – a long tube (72mm) cut from the left ulna. On the basis of the diameter at the nutrient foramen is either the Red-tailed Hawk (*B. jamaicensis*), the Rough-legged Hawk (*B. lagopus*) or the Ferruginous Hawk (*B. regalis*).
22/69 Sandhill Crane (*Grus canadensis*) – tube cut from the distal end of a left ulna of a crane the size of the small race (*G. c. canadensis*). Might be from the same bone as Nos. 22/46 and 22/77.
22/70 Turkey (*Meleagris gallopavo*) – tube cut from a radius.
22/71 Unidentifiable
22/72 Common Raven (*Corvus corax*) – tube cut from the distal end of a left ulna.
22/77 Sandhill Crane (*Grus canadensis*) – tube cut from the distal end of a left ulna of a small crane the size of (*G. c. canadensis*). Might be from the same bone as Nos. 22/46, 22/69, and 22/78.
22/78 Sandhill Crane (*Grus canadensis*) – tube possibly from distal section of a left ulna, size of (*G.c. canadensis*). Possibly same bone as 22/48, 22/69 and 22/77.
22/79 Unidentifiable.
22/80 Golden Eagle (*Aquila chrysaetos*) – tube from distal half (beginning at the nutrient foramen) of the left radius.
22/82 Turkey (*Meleagris gallopavo*) – tube from left ulna.
22/83 Turkey (*Meleagris gallopavo*) – tube from the distal end of a right ulna.
22/90 Unidentifiable.
22/91 Unidentifiable.
22/92 Turkey (*Meleagris gallopavo*) – central section of left ulna of an immature bird.
22/93 Turkey (*Meleagris gallopavo*) – tube from the distal end of a left ulna.
22/97 Unidentifiable.
22/98 Great Horned Owl (*Bubo virginianus*) – section cut from the proximal half of the right radius at the nutrient foramen.
22/99 Turkey (*Meleagris gallopavo*) – section from the proximal half of a left tibiotarsus. Identification aided by the presence of the foramen for the medullary artery and by the scar of the fibula crest which was ground down.
22/102 Turkey (*Meleagris gallopavo*) – section of left tibiotarsus cut near distal end of fibula crest; shows tip of foramen for medullary artery.
22/103 Unidentifiable.
22/104 Turkey (*Meleagris gallopavo*) – long tube cut from the shaft of a right tibiotarsus. Proximal end cut off just above the nutrient foramen.
22/108 Identifiable but unidentified.
22/109 Turkey (*Meleagris gallopavo*) – tube from right tibiotarsus.
22/116 Turkey (*Meleagris gallopavo*) – tube cut from the distal section of the right radius.
22/117 Turkey (*Meleagris gallopavo*) – Tube cut (?) from the proximal half of a right radius. This may not be an artifact.
22/119 Unidentifiable.
22/120 Unidentifiable.
22/121 Turkey (*Meleagris gallopavo*) – 3/4 of a tube from the distal half of a left humerus.

22/205 Turkey (*Meleagris gallopavo*) – tube cut from the proximal section of a left radius (not cataloged)
22/212 Turkey (*Meleagris gallopavo*) – a section from the shaft of a right humerus of an immature turkey.
22/218 Turkey (*Meleagris gallopavo*) – a tube made from the central section of a right tarsometatarsus.
22/219 Turkey (*Meleagris gallopavo*) – a tube cut from the central section of a left humerus, shows the distal tip of a muscle scar and the nutrient foramen on the anconal face.
22/220 Great Horned Owl (*Bubo virginianus*) – a tube cut from the proximal end of a right ulna.
25/6 Turkey (*Meleagris gallopavo*) – awl made from the distal end of a left tarsometatarsu. Proximal end of the distal section sharpened.
25/11 Turkey (*Meleagris gallopavo*) – a perforated tube made from a right ulna.
25/21 Turkey (*Meleagris gallopavo*) – a "whistle" made from a right radius.
25/50 Turkey (*Meleagris gallopavo*) – an awl made from the right tibiotarsus of a juvenile turkey. Distal end sharpened.
25/104 Unidentifiable.
25/116 Turkey (*Meleagris gallopavo*) – an awl made from a section of the external face of a right tibiotarsus. Distal end sharpened.
25/133 Turkey (*Meleagris gallopavo*) – a split section from the internal side of the anconal face of a left ulna. This may not be an artifact.
25/147 Turkey (*Meleagris gallopavo*) – an awl made from the proximal fifth of a left radius. Distal end sharpened.
25/152 Unidentifiable.
25/156 Turkey (*Meleagris gallopavo*) – a polished split section from the anterior face of the central section of a right tibiotarsus.
26/161 Turkey (?) (*Meleagris gallopavo*) – an awl made from a sliver of a large bird bone.
26/170 Turkey *(Meleagris gallopavo*) – an awl made from the right radius; distal end sharpened.
25/185 Unidentifiable
25/188 Turkey (*Meleagris gallopavo*) – an awl made from the right radius; proximal end sharpened.
25/194 Rough-Legged Hawk (*Buteo lagopus)* – possibly not an artifact but may be a discarded shaft from a right humerus after tubes had been cut from each end. Assigned to this species because of greatest resemblance.
25/200 Unidentifiable.
25/203 Unidentifiable.
25/244 Unidentifiable.
25/251 Turkey (*Meleagris gallopavo*) –part of the proximal section of a right tibiotarsus. This might be an artifact but may be a discard. Sections have been cut from the end, and the fibula crest has been ground down.
25/255 Ferruginous Hawk (*Buteo regalis*) – Awl made from the central section of a right radius; distal end sharpened; nutrient foramen showing. Bears my identification No., D1851 from an earlier study.
25/213 Turkey (*Meleagris gallopavo*) – tube cut from a right ulna or a discard after a section had been cut from the distal end.

Note: 1 unidentifiable bone has no number – LLH.

Lyndon L. Hargrave,
Collaborator in Ornithology and Archaeology,
October 27, 1961.

Appendix C
FLAKED STONE ARTIFACTS
Pueblo Largo LA183 and Las Madres LA25

Kenneth Honea

Transcribed from an undated typewritten manuscript in Laboratory of Anthropology Library. (LOA PLE.00) ca.1957
Spelling corrections and additions in pencil have been incorporated. Underlined words are in the manuscript.
Missing and presumed text are shown in brackets [ ].

Comparative Synthesis

It has been stated in the literature that flaked stone assemblages associated with some Pueblo stages in parts of northern New Mexico are characterized by general mediocrity in workmanship. Sometimes, of course, this is true and in many instances may be due to a paucity or lack of supply of fine grain raw materials (Kidder, 1932:13). Essentially then, the nature of raw material may be considered an influencing factor in the technological development of a given horizon.

An additional influencing factor, occasionally overlooked, is differential, culturally determined preferences of a given stage in a given area for certain types and varieties of tools other than projectile points. Although a basic tool technological-typological tradition may typify that state and area, local facies or variants may exist, even in cases when one and the same kind of raw material was available. In short, there may well exist a far greater individuality of traits in respect to the technology of stone working, and the typology of tools produced, within individual components sites of a given stage and area, than has been generally realized, clarity in this respect can be of considerable significance in archaeological interpretations.

The over all results of analyses of assemblages from Pueblo Largo and Las Madres have been particularly illuminating in this respect. Details of these differential preferences shall be pointed out in the following section of our paper.

Technology

The general impression gained through investigation of the Pueblo Largo and Las Madres flaked stone assemblages is suggestive of a common technological and typological tradition. Perhaps this basic tradition typifies the area, cultural and temporal horizons to which the sites belong.

Close scrutiny reveals, nonetheless, that each assemblage exhibits certain distinctive characteristics. Indeed, whereas the Pueblo Largo assemblage evidences considerable sophistication and skill in technology and richness of tool inventory, the starkly contrasting Las Madres assemblage is suggestive of an un pretentious technology and limited tool inventory.

Common to both sites is a primary flaking tradition based exclusively on direct hammerstone percussion. Ways diverge, however, in the manner of treatment of cores prior to this flaking. At Pueblo Largo, for example, some cores were prepared beforehand, i.e., cortex was carefully trimmed off and the core roughly shaped, often into a sub-triangular or ovate form. Depending on the size of the prepared core, large or small, primary flakes of predetermined shape were struck off for use as tool blanks.

The situation is much different at Las Madres, where cores were not prepared and primary flakes have a tendency to be amorphous in shape.

Similarly, contrasts occur in the frequencies of the various kinds of striking-platforms that were made on cores. Un-faceted platforms have a frequency of 65.4% at Pueblo Largo and a close 62.5% at Las Madres, pseudo-faceted platforms 23.1% at Pueblo Largo and 14.2% at Las Madres and plain platforms 11.5% at Pueblo Largo and 22.5% at Las Madres.

The angle of the striking-platform with the bulbar face of primary flakes is rather high at both sites, averaging 76.6° at Pueblo Largo and 76.4° at Las Madres.

Hammerstones used in percussion flaking (and perhaps also in pecking of metates, etc.) at Pueblo Largo are twofold in type. One group is comprised of oblong, discoidal or amorphous shaped pebbles or cobbles. The second group is characteristically multi-faceted and sub-spherical in shape. Only one hammerstone type was used at Las Madres, namely, oblong pebbles.

Pronounced dissimilarities are evident when we compare relative frequencies of intentionally retouched tools. Bifaces comprise 64.8% of the assemblage at Pueblo Largo, only 42.3% at Las Madres. Parti-bifaces have a relative frequency of 20.5% at Pueblo Largo and 17.4% at Las Madres. Finally, unifaces have a relative frequency of only 14.8% at Pueblo Largo, but 41.3% at Las Madres.

Retouching techniques within each of these two classes are as follows:

	Bifaces		Parti-Bifaces		Unifaces	
	Pueblo Largo	Las Madres	Pueblo Largo	Las Madres	Pueblo Largo	Las Madres
Pressure	91.8%	72.7%	96.7%	37.5%	96.8%	78.9%
Hammerstone percussion	8.1	27.3	3.2	62.5	3.2	21.1

It is of interest to point out the radically divergent technological, and of course, typological nature of the Pueblo Largo and Las Madres material with assemblages from two earlier pre-pottery horizons.

Recapitulating, we previously observed that although pressure retouch was characteristic at both Pueblo Largo and Las Madres, more tools were retouched by this technique at the former than at the latter site. By contrast, hammerstone retouch was of greater importance at Las Madres than at Pueblo Largo. The cylinder-hammer technique was practiced at neither of the sites.

In the Clovis level of the Blackwater Draw site near Portales, New Mexico, cylinder-hammer retouch was of considerably greater importance than either pressure or hammerstone retouch. Characteristically, Clovis unifaces were made on cylinder-hammer flakes (James Hester, personal communication).

At the site of the San Pedro Stage of the Cochise culture near Gila Hot Springs, New Mexico, both cylinder-hammer and hammerstone retouch techniques were of prime importance. Pressure retouch was rarely used in the finishing of tools (Honea, ms.).

Materials

Although Pueblo Largo and Las Madres are situated in an area having basically the same natural resources, there existed divergent, likely culturally determined, preference in the selection of raw material for use in the manufacture of flaked stone tools. The following table lists these preferences:

	Pueblo Largo	**Las Madres**
	%	%
Andesite	–	1.2
Basalt	1.8	0.4
Chalcedony	35.6	18.8
Chert	44.1	37.7
Granite	–	0.4
Obsidian	13.5	17.2
Quartz	–	0.4
Quartzite	4.0	12.3
Silicified wood	0.9	12.3

In general, there seems to have been a major trend at Pueblo Largo to work almost exclusively in fine-grain chalcedony, chert, and, to a somewhat lesser extent, in obsidian. Raw materials were more diversified at Las Madres, where fine-grain chalcedony, chert, obsidian, silicified wood and coarse-grain quartzite were extensively employed as core material.

Several tools from Pueblo Largo made in Alibates dolomite shall be discussed in a later section. This material stems from the Texas Panhandle in the vicinity of Amarillo.

Functional and Typological Profiles

Comprehensive functional and typological profiles made of the Pueblo Largo and Las Madres flaked stone assemblages have revealed two particularly interesting aspects of culture. First, the comparative functional profiles indicate that although the two assemblages are characterized by significant contrasts in types and varieties of stone tools and techniques used in their production, the functions to which they were put were much the same:

Comparative Functional Profiles (Bifaces, Parti-Bifaces, and Unifaces)

	Pueblo Largo		Las Madres	
Function	**Quantity**	**%**	**Quantity**	**%**
Piercing	70	43.7	16	37.2
Scraping	34	21.2	12	27.9
Piercing-cutting	22	13.7	6	12.9
Cutting	20	12.5	5	11.6
Drilling	10	6.2	–	–
Battering	3	1.9	3	7.0
Scraping-drilling	1	0.6	–	–
Scraping-graving	–	–	1	2.3
Totals	160	99.8	43	99.9

In respect to morphology, meaningful contrasts are not evident in the relative frequencies of side-notched to non-notched bifaces and parti-bifaces at Pueblo Largo and Las Madres. Sub-triangular and lanceolate shaped bifaces and parti-bifaces seem to have been of greater consequence at Pueblo Largo than at Las Madres. On the other hand, foliate tools occur in greater numbers at Las Madres than at Pueblo Largo.

We have indicated earlier that whereas 91.8% of the bifaces were pressure retouched and 8.1% hammerstone retouched at Pueblo Largo, only 72.7% of the same were pressure retouched and 27.3% hammerstone retouched at Las Madres. Within the class of parti-bifaces, 96.7% were pressure retouched and 3.2% hammerstone retouched at Pueblo Largo, while on the contrary a mere 37.5% were pressure retouched and a striking 62.5% hammerstone retouched at Las Madres.

Turning to discussion of unifacial tool attributes, it is of note that although bladelets occur at Las Madres, none were purposefully retouched into unifaces. At Pueblo Largo, though, 25.0% of the unifaces were made on bladelets and 75.0% on flakes.

Functionally, the relative frequencies of use of unifaces in scraping and cutting are about the same at both sites. As in previous instances, there are differences in retouching techniques associated with unifaces at Pueblo Largo and Las Madres. At the former, 96.8% were pressure retouched and 3.2% hammerstone retouched, while at the latter, 78.9% were pressure retouched and 21.2 hammerstone retouched.

Tool Morphology

Important questions still to be resolved are those concerned, on the one hand, with the interrelationship of the Pueblo Largo and Las Madres assemblages, and, on the other, the relationship of these with known Pueblo sites of New Mexico and adjacent areas. Since comparable studies have not yet been undertaken on other Pueblo sites in the Galisteo area or other parts of north-central New Mexico, it is not possible to enter into a broad scale discussion of implications arising out of these studies. Only general correlations shall be attempted with three not too distant multi-component sites. These are: the Pecos Ruin, Pindi, and Paa-ko. With partial exception of Pecos, though desirable, were for the most part impossible. The reason

for this lies in the fact that in most instances, the flaked stone assemblages from the sties were described as a group. As a consequence, it is somewhat unclear whether or not there were changes in the morphology of flaked stone tools associated with successive Glaze periods.

Projectile points, knives, and scrapers are about the only diagnostic flaked stone tools that can be meaningfully compared at this stage of our knowledge.

In the following, let us keep in mind that both Pueblo Largo and Las Madres are in the main contemporaneous and are situated fairly close together in an area characterized by a uniform environment.

As a matter of convenience in our discussions, projectile point types and varieties have been placed in arbitrary groups designated by Roman numerals. Firstly, we shall present the characteristics of the groups and indicate results of comparative studies of the various types and varieties at both Pueblo Largo and Las Madres. Following this is a general discussion of occurrences of the groups at other sites and areas beyond the Galisteo basin.

Small Projectile Points

Small projectile points comprise 48.6% of all retouched tools at Pueblo Largo and 34.0% of the same a Las Madres.

Group I

Small, side-notched sub-triangular pressure retouched projectile points with parallel to slightly expanding straight edged stems that are as wide or wider than the shoulders are common to both sites. They comprise 42.8% of all projectile points at Pueblo Largo and 50.9% of the same at Las Madres. Within this group at Pueblo Largo, 60.0% have concave bases and 26.7% straight bases; 13.3% are atypical. At Las Madres, 75% have concave bases and 25% are atypical; straight based varieties are lacking. Basally notched varieties are atypical or absent at both sites.

Group II

Small, side-notched, foliate, sub-triangular and lanceolate pressure retouched projectile points with expanding, convex edged stems and convex to straight bases that are narrower or wider than the shoulders are minor point types at both Pueblo Largo and Las Madres, more so at the latter than at the former. At Pueblo Largo, they comprise 8.6% and 6.2% of all small projectile points, respectively.

Group III

Small, non-notched, sub-triangular pressure retouched points are also present at both sites but they are uncommon at Las Madres (one specimen with a straight base). Specimens at Pueblo Largo predominately have straight bases (76.5%); concave bases (17.6%) are less frequent and irregular bases (5.9%) are of little overall significance. Small, non-notched foliate pressure retouched points are quantitatively almost as well represented at Pueblo Largo as are non-notched sub-triangular specimens (see above). Somewhat in divergence to the latter, however, 58.8% of the former have concave and 42.2% have straight bases. At

Las Madres, 83.3% of these kinds of points have concave bases and 16.7% have a slightly convex base; straight based specimens are absent.

Group IV

A heterogeneous group of large projectile points, perhaps originally dart points. They are typologically and technologically quite distinct from the small projectile points characteristically associated with most later Pueblo assemblages.

Discussion

Small Projectile Points

Considered as a whole, small side-notched points make up 51.4%, and small non-notched points 43.7% of all small projectile points. There are, evidently, no significant trends in the relative frequencies of these two projectile point series at either of the two sites. Within these series, however, concave and straight based specimens are present in near equal quantities at Pueblo Largo, while at Las Madres, they are overwhelmingly concave based.

Correlation of these small projectile points with similar points from other sites in northern New Mexico and the western United States is difficult, though not impossible. The main reason for this is that comparable points found there have not, with some exceptions, generally been subdivided into discrete types and varieties. Although we are not in a position to offer a comprehensive discussion of the subject, the following pointers are of interest.

Group I

The earliest presently known evidence of these small points in the Northwest is in Level 1 (pre-pottery) of the Kawukan Springs Midden in Oregon. This level has an indicated date of ca. 250 BC to 150 AD (Cressman 1956, charts 1,3, fig. 45; point types 4 and 5). Both concave base and notched base varieties are present; and straight base varieties are absent.

The earliest known occurrence of these projectile points in the Southwest is the Snaketown Phase of the Pioneer Period in south central Arizona; this pre-Pueblo phase has been dated to AD 300-500 (Gladwin Haury, Sayles, Gladwin, 1937, p.111, fig. 43, pl. LSSSVIII, f; McGregor 1942, pp. 133, 159). The rare specimens found in this association have concave bases. All varieties [of] concave base specimens, however, most common[ly] occur in the somewhat later Pueblo II Sacaton Phase (AD 900-1100).

Similar points are also widespread in the western half of California. Their occurrence patterns in time and space have been worked out for that region by Baumhoff and Byrne (1959). The most common variety is characterized by a concave base (called “General Subtype” by the authors cited); earliest known occurrence ca. 1300 AD in the Owens Valley. Notched base varieties (Sierra Subtype) were introduced to the same area about 1400 AD. Straight base varieties were apparently unknown. Two additional varieties, one with a bell-shaped base (Redding Subtype), the other with an inverted V-shaped base (Delta Subtype) shall only cursorily concern us.

In the Jeddito district of northeastern Arizona, a few concave base specimens are associated with Pueblo III-IV assemblages at Kawaika-a and Chakpahu and Pueblo V assemblages at Awatovi. Straight base specimens, also rare, occurred with Pueblo III and IV assemblages at Awatovi and a Pueblo III-IV variety at some sites, however, was basally notched and occurred with Pueblo III-IV assemblages at Kawaika-a and Pink Arrow, with Pueblo IV assemblages at Awatovi and Pueblo V assemblages, also at Awatovi (Woodbury 1956, p.124).

Some 200 miles to the southeast of this district, in east-central Arizona, concave base specimens were dominant at the Pueblo III-IV site of Table Rock which has been dated to about AD 1350 (Martin and Rinaldo 1960, p.263). At the not-too-distant Mineral Creek Site and Hooper Ranch Pueblo, the first dated to AD 100-1200 and the second to AD 1200-1375, straight base specimens are dominant (Martin, Rinaldo, and Longacre, 1961, p.103).

Contrasting sharply with the Jeddito district is La Plata district in northwestern New Mexico. Here, the straight base variety is dominant and typically associated with Pueblo III assemblages (Morris, 1939, p. 126). Concave base and basally notched varieties are aberrant.

Moving in closer to the Pueblo Largo-Las Madres site area, occurrence patterns of small side-notched points change. Concave base varieties are evidently characteristic at the multi-component site of Pindi in north-central New Mexico (Stubbs and Stallings, 1953, p.97, pl. 17, s-v). It is unfortunately not clear from the report whether these points are associated with the Pueblo II or III occupations at the site. Neither straight base nor basally notched varieties seem to be present. (Specimens p-q in plate 17 of the cited report, although classified by the above author together with specimens s-x, mentioned above, appear to be of a different type to this researcher; though side-notched, the lateral stem edges and bases are markedly convex; see Group II points in the present report).

Points recovered from the not-overly-distant multi-component site of Paa-ko are most interesting since not only are straight concave and notches base varieties present, but also bell-shaped and inverted V base varieties (Lambert 1954, pl. XXXIII-C). Unfortunately, neither the frequencies or cultural associations of the varieties are indicated in the otherwise admirable report.

Turning to the classic Pecos Ruin, excavated by Kidder, concave base varieties are most common, followed by those having straight bases (Guthe's stemmed projectile point, Type 3, Subtype a). Basally notched varieties are aberrant (Kidder. 1932, p.22).

Finally, both straight and slightly concave base varieties of this point occur in association with pottery in Oklahoma and northern Texas, where they are called "Washita" points (Bell, 11958, p.98, pl.49). There would seem to be a tendency of straight bases in at least Oklahoma specimens if the illustrated type specimens are characteristic of that region. However, the concave base variety is dominant over the straight base and aberrant notched base varieties at the Stamper site in western Oklahoma (Watson, 1950, p.39).

The basally notched variety also occurs in Oklahoma and northern Texas in association with pottery where it is termed a "Harrell" point (idem., p.30, pl.15). Both varieties are said to have a distribution well into the Mississippi Valley, excepting east Texas and adjacent part of Louisiana.

We have, of course, not attempted nor could we attempt to present the entire body of distributional and associational data on the known varieties of small side-notched points. Nonetheless, a very general sketch has been given and this will prove useful in our considerations. Firstly, we are concerned with a point type of considerable antiquity both in the southwestern and northwestern United States. Its earliest occurrence has not yet been demonstrated in either Texas or Oklahoma. It is also undetermined at the present whether occurrence of this point type and its varieties in widely separated districts of the greater Southwest is indicative of cultural connections. This may well one day be demonstrated (see below).

Martin and Ronaldo (1960, p.228) have stated the concave base variety of small sub-triangular side-notched points, typically associated with late Pueblo III and Pueblo IV assemblages, represents a late development. Nevertheless, we have previously observed that they occur as early as the Snaketown Phase of the Pioneer Period and are also common in the later Sacaton Phase (Pueblo II), at least in south-central Arizona.

Referring to broadly contemporaneous Pueblo III-IV cultures in various regions of the greater Southwest, it is our impression there were differential trends in dominance of one or more varieties of this point type from one region or district to the other, possible even in the same region or district. For example, we have seen that whereas notched base varieties are typical of Pueblo III-IV assemblages in the immediate Jeddito district of northeastern Arizona, both concave and straight base varieties were common almost to exclusion of the foregoing variety in Pueblo III-IV assemblages in a part of east-central Arizona. Straight base varieties, by contrast, are typical of comparable assemblages in La Plata district of northwestern New Mexico. In north-central New Mexico the situation is somewhat different. Strangely, all defined varieties are present at the site of Paa-ko. However, concave base varieties are dominant at both the Pecos Ruin, Las Madres, and possibly Pindi. Both concave and straight base varieties are represented in near equal frequencies at Pueblo Largo. With the exception of Paa-ko, it appears the basally notched variety and varieties characterized by inverted V-or bell-shaped bases are aberrant or absent in north-central New Mexico, at least during Pueblo III-IV times.

As a final note, it should prove of interest to determine the relationship of the late prehistoric and/or historic Toyah points of the Trans-Pecos region of Texas and Huffaker points of Oklahoma with similar points in the Southwest and West. The former are especially reminiscent of the late prehistoric Sierra Subtype of California (Baumhoff and Byrne, 1959, pp. 38, 60, pl. I, g-k; Bell, 1960, p. 88, pl. 44; Suhm and Jelks, 1962, p.192, pl. 146). Huffaker points, having either a straight, slightly concave or convex or notched base, are characterized by being double side-notched (Bell, 1960, p. 59, pl. 29). However, both Toyah and Huffaker points are not well established and require more study before attempting comparison with similar points in the Southwest and West.

Group II

Compared to Group I and III, little specifically is known of this group of points. As a consequence, discussion of them shall be brief. Some may possibly be variants of Group I points. It is also possible, rather more probable, they are of independent development. Broadly comparable points, for the most part larger than Pueblo Largo and Las Madres specimens, are scantily represented in La Plata district of northwestern New Mexico (Morris, 1939, pp.125-126, pl. 121). The cited author mentions, however, than they

are more abundant at sites south of the San Juan River in the same general area and may eventually prove to be a point type characteristic of Pueblo III.

Group II points were not reported from the Pecos Ruin. Almost exact duplicates of some of the Pueblo Largo specimens were found at Pindi, but their associations at that multi-component site are not clear (Stubbs and Stallings, 1953, pl. 17, p-q). A somewhat similar specimen was excavated at Las Madres.

Group III

Similar to Group I, the earliest known occurrence of these small non-notched points is in Level 1 of the Kawukan Springs Midden in Oregon (Cressman, 1956, charts 1,3, fig. 45; point type 3). The foliate type is represented by two varieties, one with a concave, the other with a straight base. They are not depicted in the artifact plates of the Snaketown excavations.

In the Jeddito district of northeastern Arizona, the small sub-triangular type with a straight base has been found with a Pueblo I-II assemblage at Site 4A and Pueblo IV and V assemblages at Awatovi (Woodbury, 1954, pp. 122-123). All types and varieties of this point are said to be rare at sites in La Plata district of northwestern New Mexico (Morris, 1939, p.125). Both sub-triangular and foliate straight base varieties of this point category are collectively known as "Fresno" points in Oklahoma and Texas (Bell, 1960, p.44, pl.22). It is stated they are of wide distribution in Oklahoma and all sections of Texas except that part bordering on Louisiana. They are also commonly associated with most cultures of the Mississippian pattern in the eastern United States. Fresno points are considered a late prehistoric development in most regions.

Concave base sub-triangular and foliate varieties of this point are collectively known, on contrast to the above, as "Maud" points in Oklahoma and Texas (Bell, 1958, p.48, pl.24). Also a late prehistoric point type, Maud points have been thought to have a restricted occurrence in northeastern Texas, northern Louisiana, southern Arkansas and eastern Oklahoma. On the basis of findings from Pueblo Largo and Las Madres though, we now know this point to have a much wider distribution.

Both the sub-triangular and foliate types, with straight bases, are present as minor traits in the Pindi and Paa-ko assemblages in north-central New Mexico (Stubbs and Stallings, 1953, p.97, pl.17, f-h; Lambert, 1954, p.139, pl. XXXIII-B). At the Pecos Ruin, sub-triangular and foliate specimens occur with either concave or straight bases (Kidder, 1932, pp.17-18, fig. 3; Guthe's projectile points without stems, Type 2, subtypes a and b).

We have previously indicated that at Pueblo Largo about half of the non-notched points are sub-triangular (straight bases dominant). The other half is foliate and have near equal frequencies of concave and straight bases. At Las Madres, the foliate type is dominant and is characterized by a concave base. The sub-triangular type is represented by a single specimen with a straight base.

Generally, Group III points appear to be of more limited overall distribution than Group I points, particularly in some parts of north-eastern Arizona and north-western New Mexico. These are not so uncommon, however, in north-central New Mexico or in the Texas-Oklahoma region. In both the Pueblo

Largo and Las Madres assemblages, they comprise approximately half the total of small projectile points. Frequencies at Pindi, Paa-ko and Pecos have not been determined.

Large Projectile Points

Group IV

Of both sites, Pueblo Largo is by far the richest in the quantity of morphologically distinct, in part typologically identifiable, large projectile points (13 specimens). A single specimen from Las Madres is incomplete and cannot be identified as to type. Although a representative number of the Pueblo Largo Group IV points were initially retouched by the cylinder-hammer technique, not a single cylinder-hammer flake was found in the factory waste from the site. (The same situation was found to exist at Las Madres.) With but one exception, none of the knives or scrapers at Pueblo Largo were made on cylinder-hammer flakes nor were any of these implements retouched by cylinder-hammer percussion. A single fragmental knife retouched by this technique is considered foreign to the site. At any rate, there is no convincing evidence the habitants of Pueblo Largo practiced the cylinder-hammer technique.

On the basis of previously cited data at component sites of the Paleo-Indian and Archaic horizons (p. [ ]), extensive reconnaissance of lithic sites in most parts of New Mexico by the present author and recent research in central and southwest Texas (Honea, 1963a, Epstine 1960, pp.32-33, Suhm 1962, p.73), it would indeed seem the cylinder-hammer technique is typically associated with the pre-ceramic rather than ceramic cultural horizons of the New Mexico-Texas region.

Excluding Paleo-Indian projectile points, only a handful of pre-ceramic points have been defined as to type in New Mexico, mainly since relatively few pre-ceramic sites have been excavated. However, a number are similar to types that have been defined in Texas and Oklahoma.

In the following tentative identifications of Pueblo Largo Group IV points, we shall point out these similarities, without of course, inferring either direct or indirect connections of types. Only several of the Pueblo Largo specimens were identifiable. The only foreseeable value in these correlations at the present time is a general knowledge of the spatial distribution of like or similar types. Determination of specific temporal and cultural associates remain the subject of future research.

Fig. [ ]: by virtue of retouch technique and oblique angle of stem to point long axis, similar to dart points of the Diablo Variant of the San Pedro stage of the Cochise culture in southwestern New Mexico (Honea, 163b); also similar in shape and dimensions to late Archaic Marcos points of central Texas and parts of Oklahoma (Suhm, 1962, fig.45; Suhm and Jelks , 1962, p.209, p.105; Bell, 1958, p.42, pl. 21; in contrast to the Pueblo Largo specimen long axis of stem on Texas and Oklahoma specimens parallel to point long axis).

Fig. [ ]: similar to Archaic Lobo points of New Mexico (Dittert and Hester, personal communications); also similar to Uvalde points of central Texas and Oklahoma (Suhm and Jelks, 1962, p.189, pl. 95; Bell, 1960, p.34, pl. l17).

Fig. [ ]: similar to late Archaic Ensor points of central Texas and Oklahoma (Suhm, 1962, fig.45; Suhm and Jelks, 1962, p.189, pl. 95; Bell, 1960, p.34, pl.17).

Fig. [ ]: similar to late Archaic Marcos points of central Texas and parts of Oklahoma (op. cit.).

Fig. [ ]: similar to Palmilias points of Texas and Oklahoma (Suhm and Jelks, 1962, p.229, pl. 115; Bell, 1960, p.74, pl. 37).

In summary, it seems, on morphological grounds, the above identified, and likely the unidentified, Group IV points from Pueblo Largo can safely be termed dart points. Most probably they are intrusive to the site and were possibly collected from earlier pre-ceramic sites in the pueblo vicinity. The point illustrated in Fig. [ ]: made in Alibates dolomite, may have been imported in Pueblo times (?) from the Texas Panhandle. (It is unknown at the present time whether the material in which this point was made was exported to New Mexico in pre-ceramic times; if this point is evidence of that, then we should expect to find other tools in Alibates dolomite at pre-ceramic sites in parts of New Mexico).

Basically then, Pueblo Largo Group IV dart points can be interpreted as cautious indicators of an earlier pre-ceramic cultural horizon in the Galisteo basin. Since dart points, sometimes called stemmed knives in the literature, are not infrequently found at Pueblo period sites in north-central New Mexico and elsewhere, it is, in our opinion, of the utmost importance to determine, on the basis of morphological studies, whether they are primarily or secondarily associated with the assemblages with which they are found.

We would point out that two Hell Gap points, one an almost exact duplicate of the Pueblo Largo specimen, were found at the Pecos Ruin; both were considered primarily associated with the Pecos flaked stone assemblage (Kidder, 1932, p.23, fig. 8, j-k). A broken Folsom point was excavated from a kiva at Pindi (Stubbs and Stallings, 1953, p.97, pl. 17, x). A variety of other dart points were recovered from both these sites and at Paa-ko. None have been identified.

Perhaps intrusive dart points were collected by Pueblo peoples out of idle curiosity, much in the same way they also sometimes collected fossils, colorful minerals, and odd-shaped concretions. On the other hand, perhaps these people attached magical properties to these large points (recall the Folsom point in the Pindi kiva). It is of interest to note that some were included in the “medicine kits” found with burials at the Pecos Ruin by Kidder (1932, pp. 42, 106-108); they were strangely lacking from medicine kits found by the same excavator at the Forked Lightning Ruin). As the Pecos specimens, many of the Pueblo Largo specimens are worn and scratched on all faces, as from having been abraded when carried together with other oddities (fossils, etc.) in a pouch over a period of time. In contrast to Pecos, and perhaps similar to Forked Lightning, none of the Pueblo Largo points were found in association with burials.

Other possible reasons for collecting dart points may have been utilitarian in motivation. For example, this single specimen from Las Madres has been intensively used in a cutting function. Several of the Pueblo Largo specimens also showed similar signs of secondary wear along their lateral edges that cannot be identified with their use as projectile points.

There are several final points that should be considered in determining primary or secondary association of dart points with assemblages of Pueblo age. First and foremost, dart points found in association with late Pueblo assemblages in a given area should be submitted to thorough comparative morphological analysis. If results of analysis indicate morphological dissimilarity with the assemblages, and thus secondary association, several avenues of exploration are open to clarify their anachronistic occurrence. Perhaps they are cautious indicators of past cultures in that area. It should therefore prove of considerable interest to undertake correlation of such projectile points with those excavated from local pre-ceramic and early ceramic sites in the vicinity. Providing there was a uniformity of dart point types in a given area in earlier times, one would expect the types of intrusive dart points found with later, sequential, Pueblo assemblage in the area to exhibit the same degree of uniformity.

On a broader scale, such an interpretation would gain much support were it discovered that different dart point types were secondarily associated with genetically related, coeval Pueblo assemblages in dissociated areas. Evidence, in this case, would suggest the presence of divergent pre-ceramic or early ceramic cultures in those respective areas. On the other hand, it is within the realm of reason that two such dissociated Pueblo assemblages are characterized by similar demonstrably anachronistic, dart point types. In this instance, similar pre-ceramic or early ceramic cultures could be postulated for these areas.

It is, of course, also possible that some dart points were items of trade during Pueblo times. This could be indicated by the presence in Pueblo assemblages of dart points fashioned in materials foreign to the locale. It appears equally feasible, however, such trade in dart points or materials could also have taken place in pre-ceramic to early ceramic times. This is much the situation regarding the large intrusive dart point in Alibates dolomite at Pueblo Largo (Fig. [ ]). In this particular case, it seems likely the point was brought in along with other items, during the occupation of the pueblo. We could be wrong though.

Finally, it is possible that some Pueblo people continued the manufacture of implements which, though resembling earlier dart points, were in fact utilized as knives. A uniformity in types and varieties of the knives could then be expected at most, if not all, sites belonging to a given developmental state of a given Pueblo period. There may be exceptions though. Here again, though, identification of technique of manufacture is extremely critical. Although generalizations are not presently possible, it is reasonably certain, for example, the cylinder-hammer technique was not practiced by habitants of either the Pueblo Largo or Las Madres sites in north-central New Mexico. Whether the same situation exists elsewhere remains to be determined. Without doubt there are numerous other factors that must be considered in these determinations. We have suggested only several of many lines of approach to understanding this problem.

Knives

The differential morphology and relative frequencies of knife types and varieties is suggestive, even more so than that of projectile points, of substantial morphological divergences in the flaked stone assemblages of Pueblo Largo and Las Madres. Indeed, the distinctive character of the assemblages strikes one as being best expressed in these divergences.

Although there were more than three times as many knives and Pueblo Largo (38 specimens) than at Las Madres (11 specimens) there is little difference in their over all frequency in the two assemblages; at

Pueblo Largo it is 26.4% and at Las Madres, 23.9% of the total number of intentionally retouched stone tools. Although a number of certain knife types and varieties [are] common to both sites, there is a greater abundance and over all variety of these implements a Pueblo Largo than at Las Madres. The absence of certain key types and varieties at the latter site is of very considerable importance.

Of the fifteen non-notched knife types present in the Pueblo Largo assemblage, Las Madres shares only seven and has one type and variety not found at the former site. The Pueblo Largo knives are represented in twenty-four varieties, only seven of which are shared by Las Madres.

Typo-technological nuances are also indicated in that 44.7% of Pueblo Largo knives are bifacial, 36.8% are parti-bifacial, and 18.4% unifacial. At Las Madres, 27.3% are bifacial, 45.4% parti-bifacial, and 27.3% unifacial. Frequencies of shapes of bifacial and parti-bifacial knives at Pueblo Largo are: foliate 32.2%, ovate 29.0%, sub-triangular 22.5%, and lanceolate 16.1%. At Las Madres, these frequencies are: sub-triangular 33.3%, foliate 22.2%, ovate 22.2%, ovate or foliate 11.1%, and lanceolate 11.1%. While at Las Madres all unifacial knives were made on flakes, 57.1% of them were made on flakes and 42% on bladelets at Pueblo Largo.

Several knife types, most of which are represented in several varieties, especially set the Pueblo Largo assemblage apart from that at Las Madres. One of these is, along with certain other pertinent data, of considerable importance in interpretation of the cultural history of north-central New Mexico. These diagnostic Pueblo Largo knife type groups are:

a) bifacial; foliate, lanceolate or ovate in shape; one markedly convex, almost bulging lateral edge, one plainly convex lateral edge and either a convex or straight base; 5 specimens (Figs. [ ]).

b) parti-bifacial; sub-triangular, or ovate in shape; one convex, one straight lateral edge and a straight base; 3 specimens (Figs. [ ]).

c) parti-bifacial;; foliate in shape; convex, denticulate lateral edges, convex base; 2 specimens (Figs. [ ])

d) bifacial; lanceolate in shape; either two convex lateral edges (one beveled) and either straight (1 specimen) irregularly convex base (1 specimen) or one plainly convex (beveled), one straight lateral edge and straight base (1 specimen) (Figs. [ ]).

e) parti-bifacial; indeterminate shape; two irregularly convex lateral edges, each beveled in alternate directions; 1 specimen (Figs. [ ]).

f) unifacial; sub-triangular or angular shape, made on flakes; two convergent straight cutting edges; angle of long-axis of cutting edge at distal end of flake averages 70^{o} in relations to the flake long-axis. (Fig. [ ])

Only one fragmentary specimen of the a) group was found at Las Madres; it was either foliate or ovate in shape (distal end missing) and has one markedly convex and one plainly convex lateral edge and a straight base. All other groups are absent there. Although they may occur there, neither group a), b), or c) Pueblo Largo knives are known to the present author to have been described from other archaeological sites in north-central New Mexico.

Knife group e), represented by a single fragmental specimen at Pueblo Largo, however, fully falls within the range of two edged alternately beveled knives described by Kidder from Pecos (1932, pp.30-31, fig. 13, fig. 15, 1-b). All but a very few of the Pecos specimens were made in Alibates dolomite; the Pueblo Largo fragment is made in quartzite. One of the Pueblo Largo group d) knives, however, is made in Alibates dolomite. Four-edged, alternately beveled knives, a minor knife type at Pecos, were found an neither Pueblo Largo or Las Madres.

Our group d) knives do not appear to fall in the above cited Pecos two-edged category since only one lateral edge has been beveled. They have not, to our knowledge, been described from other sites either in north-central New Mexico, Texas or the Plains (Poteet, 1938, p.245). Although sub-triangular beveled knives were recovered from Paa-ko, it is not stated in the report how many or which edges were beveled (Lambert, 1954, p.139). No beveled knives were reported from Pindi.

Two-edged beveled knives have been stated to be intrusive to north-central New Mexico. According to Kidder, they were introduced to at least the Pecos site vicinity, along with certain other implements and Alibates dolomite, beginning in late (Pecos) Glaze IV and continuing on into (Pecos) Glaze V and later times (Kidder, 1932, p.44; 1958, p. 313).

We have indicated above the Pueblo Largo two-edged beveled knife (group e) is made in quartzite. One of the group d) knives, however, is of Alibates dolomite. Both of these knife groups, as well as Alibates dolomite, is lacking at Las Madres. This material also absent at Paa-ko; beveled knives at that site were made in other materials (Lambert, 1954, p.144). A drill and a Folsom point in Alibates dolomite were found at Pindi (Stubbs and Stallings, 1953, p.97-98).

In summary, the status of Pueblo Largo group d) beveled knives remains unresolved for the present since their distribution in north-central New Mexico has not been determined. They seem, on morphological grounds, to be related to the Pecos two-edged beveled knives. They are differentiated from them, however, by being beveled along a single edge. The Pecos specimens were described as “unfinished”, since retouch was for the most part concentrated along the lateral edges (Kidder, 1932, p.80). We have seen at Pueblo Largo that, rather than being unfinished, such implements belong to a cultural[ly] significant group of finished tools distinguished by parti-bifacial retouch.

Both two-and Four-edge beveled knives, considered intrusive in the above district, are commonly associated with late prehistoric ceramic culture horizons along the Canadian river in the Texas Panhandle and in western Oklahoma (Johnson, 1939, p.197, pl. 4-I, upper row; Watson, 1950, p.32, pl. 3-I, f-h). they are otherwise widely distributed in Texas, but generally seem more abundant in the central, western and northwestern, i.e., Panhandle, parts of that state (Poteet, 1938, pp.245-262). Single-edge specimens have not been described from either Texas or Oklahoma.

Pueblo Largo group f) unifacial knives do not occur at Las Madres. They are also unreported from Paa-ko and Pindi. Very possibly, these knives are found at the Pecos Ruin, Kidder speaks of a kind of “side-scraper”, very common there, “ . . . of slim triangular outlines with unworked base and two retouched edges which meet at an acute angle” (1932, p.39, fig. 20, d, fig 21, a-d). Correlation of these tools with group f) knives is more conjectural than factual since the relation of working edge long axis with the flake

long axis on the Pecos specimens is uncertain. Whether termed a knife or a scraper, this kind of tool is of minor importance at Pueblo Largo but may be considered a diagnostic trait of that assemblage.

Group f) knives correspond in detail to "racloirs dejete" defined in Old World context by Bordes (1961, p. 6, Fig. 1, No. 4).

Finally, a single outstanding bifacial foliate knife in Alibates dolomite found at Pueblo Largo (Fig. [ ]), not included in the above groupings, corresponds to Kidder's knife type characterized by one pointed and distal end, and a convex base (1932, p.16, fig.2, f-i).

Drills

The drills found at Pueblo Largo, representing 6.3% of all retouched stone tools, have, for the most part, their equivalents at Pecos and shall not be further considered. It is odd that no drills were recovered directly from the Ls Madres site. A single specimen, with a large, abruptly expanding flange was found in the general site vicinity and may be associated with the assemblage.

Scrapers

Similar to knives, the differential typology and relative frequencies of scrapers is strikingly indicative of tangible differences between the Pueblo Largo and Las Madres assemblages. As was the case with knives, there is a greater abundance in types and varieties of unifacial scrapers at Pueblo Largo than at Las Madres. Paralleling this is the fact that although 80.9% of the scrapers were made on flakes and 19.0% on bladelets at Pueblo Largo, all scrapers were made on flakes at Las Madres. Also, parti-bifacial scrapers were found only at Pueblo Largo.

Unifacial side-scrapers are characteristic at both sites (85.7% and 75.0% of all unifacial scrapers respectively at Pueblo Largo and Las Madres). However, of the nine side-scraper types at Pueblo Largo, only two are represented at Las Madres. Unifacial side-end scrapers are minor tools at both sites. Of three Pueblo Largo types, only one is present a Las Madres.

Except along very general lines, it is difficult to correlate Pueblo Largo and Las Madres scrapers with those at other sites in north-central New Mexico. The primary reason behind this difficulty can be sought in the past lack of a comprehensive terminology to clearly circumscribe the various types and varieties of scrapers within the already established end and side scraper groupings. It has evidently been felt, and to this point of view we take exception, that it is of little use in interpretation to break end and side scrapers down into fine types and varieties and work out the relative frequencies of these groups, on the basis of kinds of flakes used as blanks, number of edges retouched, form of finished working edge and technique of retouch. An excellent treatise on precisely this problem was recently published by Bordes and has served as a key in the typology of scrapers employed in the present report (1961, pp.8-10, 11-12, fig. 2).

Both side and end scrapers occur at Paa-ko but their types, varieties and relative frequencies have not been ascertained (Lambert, 1954, p.139). Both groups were also recovered from Pindi (Stubbs and Stallings, 1953, p.99). Twice as many end scrapers were found there as side-scrapers. At Pecos, side-scrapers make up somewhat more than half (61.1%) of all scrapers, 38.9% belonged to the end scraper

group (Kidder, 1932, p.15). One Pueblo Largo side-end scraper (fig. [ ]), made in Alibates dolomite, falls in the range of snub-nosed end scrapers found at Pecos (Kidder, 1932, pp.35-39, figs. 18,19). Three additional Pueblo Largo side-end scrapers (figs. [ ]) fall into Kidder's category of simple end scrapers. None of these specific scraper types and varieties were found at Las Madres.

Conclusions and Interpretations

Morphological correlation of the Pueblo Largo and Las Madres flaked stone assemblages imply [that] a basic typological and technological tradition is common to both sites. This lithic tradition is believed to characterize the area, cultural, and temporal horizon to which the sites belong.

Traits of this tradition are: production of small, bifacial, rarely parti-bifacial, side-notched and non-notched sub-triangular, foliate, ovate, and lanceolate shape knives; flake side-scraper; dominance of pressure over hammerstone retouch, absence of cylinder-hammer flaking and primarily associated dart point.

Presence of most of these traits at the Pecos Ruin, Pindi, and Paa-ko are suggestive, in our opinion, of a tradition common to the Pueblo III and IV periods of north-central New Mexico. It remains to be determined whether analogous or divergent traditions characterize earlier and later Pueblo periods in this district. It also rests for future research to determine whether the above tradition is typical of Pueblo III-IV periods in other parts of New Mexico and the greater Southwest. Cursory research indicates this may be the case.

The Pueblo Largo and Las Madres assemblages, though sharing a common lithic tradition and contemporaneity in time, exhibit significant mutually exclusive morphological traits. To all appearances, the presence or absence of these traits was culturally determined.

These differential traits are: choice of raw material, presence or absence of Alibates dolomite; the relative frequencies of core types and varieties, core striking-platform types and varieties, techniques employed in the retouch of tools, tools made on flakes and bladelets, bifacial, parti-bifacial and unifacial tools, shared knife, scraper and projectile point types and varieties; presence or absence of certain knife, scraper, projectile point and drill types and varieties, subspherical hammerstones, and lastly, the incidence of intrusive dart points.

The Las Madres assemblage is sufficiently distinct morphologically to indicate it may not be indigenous to the region. Numerous differential traits set it apart not only from contemporaneous Pueblo Largo, but from Pecos, Pindi, and Paa-ko. Particularly conspicuous at Las Madres is the dominance of concave base side-notched and non-notched projectile points, limited knife and scraper types and varieties, apparent lack of drills and the rarity of intrusive dart points. The absence of beveled knives and implements made in Alibates dolomite emphatically underscores, as we shall presently observe, the exceptional position of this site in the cultural history of north-central New Mexico. Correlations of this assemblage must obviously be sought elsewhere.

A number of traits collectively shared by the Pueblo Largo and Pecos assemblages, but not Las Madres, suggest relationship of the two sites. We have also observed there are certain non-shared traits at Pueblo

Largo and Pecos. Several possible solutions present themselves in explanation of both the similarities and divergences. Before proceeding it seems appropriate to consider the positions of these two sites in time.

The main period of habitation at both Pueblo Largo (and Las Madres) falls in Glaze I times. Dendro-chronological evidence at both sites indicates a beginning date of Glaze I in the Galisteo basin at ca. 1250 AD. Essentially then, it falls within the Pueblo III period. Glaze I is also represented at Pecos, where it was introduced ca. 1375 AD during the Pueblo III-IV period. It is thus clearly later there than in the Galisteo Basin. These dates furnish us and important key to establishment of precise criteria in interpretation of the problems at hand. Of the shared traits, there is the following to say:

Most can be explained on the basis of participation in a common Pueblo III-IV lithic tradition Nonetheless, certain culturally determined preferential trends are evident in the relative frequencies of some of these shared traits. For example, a greater quantity of small concave base side-notched projectile points occur at Pecos than at Pueblo Largo. Maybe this represents a simple increase in popularity of one over the other from Pueblo III to Pueblo IV times. On the other hand, this could be the result of ultimate derivation of the two site assemblages from different Pueblo areas.

Another group of shared traits cannot be explained on the basis of a common lithic tradition. We refer specifically to two-edged beveled knives, side-end (snub-nosed) scrapers and implements made in Alibates dolomite. Kidder has stated that, beginning in late Glaze IV and reaching its height in Glaze V, there was an influx to Pecos from the east of Plains type snub-nosed and side scrapers and two-edged knives made in Alibates dolomite (1932, p.33). The cited author cautiously suggests appearance of these tools and this material indicates intensification, but not actual beginning of contact with tribes to the east.

Their occurrence at both Pecos and Pueblo Largo are then due to extraneous influences that came in from the east. Since Pueblo Largo is in the main Glaze I in date, it is now clear this contact was in progress as early as Glaze I times in the Galisteo basin (ca. 1250 AD). It is presumed these influences, in all cases, were primarily the result of trade between sedentary Pueblo and nomadic Plains Indians (Kidder, 1958, pp.313-314).

In final summary, the following has become evident in the course of our research. A distinctive, basic, lithic tradition characterizes at least the terminal Pueblo III and Pueblo IV periods in north-central New Mexico. It remains for future research to determine whether the same or divergent traditions typify earlier and later Pueblo periods and their individual components in the same area. This basic tradition, however, is quite different from traditions of pre-ceramic horizons in at least some parts of New Mexico. Though sharing in a common tradition, differential, culturally determined preferences for certain types and varieties seem to distinguish individual component sites in the late Pueblo III and IV horizon of north-central New Mexico. Isolation of these differential preferences through comprehensive morphological studies and statistical evaluation of resultant date are of utmost importance in archaeological interpretations. We should emphasize that recognition and proper segregation of intrusive traits is of major concern in these determinations. Depending on their nature, they may either be cautious indicators of earlier cultural horizons (e.g. Paleo-Indian or Archaic dart points) or foreign contacts (Alibates dolomite).

The flaked stone assemblages of Pueblo Largo, dated in the main to Glaze I (ca. 1250 AD), is morphologically so divergent from that of contemporaneous Las Madres that ultimate origins of both in dissociated districts seems indicated. Also, Pueblo Largo was affected by certain intrusive elements of Plains type coming in from the east; Las Madres was not. Tenuous evidence suggests proto-types of both the Pueblo Largo and Las Madres assemblages must possibly be sought beyond the north-central New Mexico district. It seems credible, as already indicated, that these proto-types were situated in different areas. Greater clarity will be gained when additional sites of the Pueblo I, II, III, and IV periods are excavated in north-central New Mexico.

Bibliography (Appendix C)

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Appendix D

FAUNAL IDENTIFICATION OF BONE ARTIFACTS: MAMMALS
Pueblo Largo (LA-183) New Mexico

Thomas W. Mathews, Southwest Archaeological Center, N.P.S., Gila Pueblo, Globe, Arizona.
Transcription of unpublished paper. (LOA 95 PLE.009) ca. 1957

Table 1**. Pueblo Largo Bone Artifacts, The Faunal List: Mammals**

Mammalia sp. – mammals, general
Lepus sp. (hares) jackrabbits, general
Lepus californicus – blacktail jackrabbit

Canidae sp. – (wolf, dog, coyote and fox) Canids, general
Canis sp. – dog or coyote
Urocyon cinereoargenteus cf. *scotti* ssp. – grey fox
Lynx rufus cf. *baileyi* ssp. – bobcat

Artiodactyla sp. (Ruminantia) – even-toed ruminants, general
Cervidae sp. (deer-like animals)
Odocoileus sp. – deer, general
Odocoileus hemionus – mule deer
Antilocapra americana – pronghorn
Ovis canadensis – big horn sheep

Note: Only those taxonomic categories to which specimens have been assigned are listed in the table above. The taxonomic level is indicated by amount of off-set from the left margin.

Table 2. **Pueblo Largo Bone Artifacts: Resumé of Mammalian Faunal List**

Mammals		
Lagomorphs	3	2 genera, 1 species
Carnivores	4	1 family, 1 genus, 2 species
Artiodactyls	6	1 order, 1 family, 1 genus, 3 species
Total	13	

Thirteen identifications have been assigned to this group of artifacts below the level of Class (Mammalia). In taxonomic summary they are:

Orders 1 – Families 2 – Genera 4 – Species 6

Table 3. **Pueblo Largo Bone Artifacts: Percentage Composition of the Collection**

	No.	Percent
Total Sample	301	100
Mammals/birds, unknown	23	8
Mammals	188	62
Birds	90	30
Mammals	188	100
Mammals, unknown	106	56
Lagomorphs	11	6
Carnivores	7	4
Artiodactyls	64	34

Table 4. **Pueblo Largo Bone Artifacts: Mammals & Mammals or birds: Frequencies and percentages by artifact classes.**

	Large forms, various	Light Awls	Awls, Class C	Awls, Class D	Awls, Class E heavy	Awls, Class E light	Rib forms pointed	Rib forms spatu-late	Bone tubes	Antler forms	Misc.	**Totals**	All specimens %					Mammals only %				
Mammalia, Aves, unknown					1	19					3	23	.109									
Mammalia sp.	3		4	49	29	1	12	7			1	106	.502					.563				
Lepus sp.		3				1			3			7	.033	.037				.037	.042			
L. californicus		1										1	.004		.052			.005		.058		
Sylvilagus sp.		1				1			1			3	.014					.015				
Canidae sp.						1						1	.004	.009				.005	.010			
Canis sp.					1							1	.004					.005		.015		
Urocyon cinereoargenteus	1											1	.004		.014			.005				
Lynx rufus	2		1			1						4	.018					.021				
Artiodactyls sp.	2		2	1	1		9	9			2	28	.132					.148				
Cervidae sp.										11		11	.052					.058				
Odocoileus sp.	3		2	1	1	1				7		15	.071	.080				.079	.090			
O. hemionus	1		1									2	.009		.180			.010		.148		
Antilocapra americana	2		4									6	.028			.303		.031				.340
Ovis Canadensis			2									2	.009					.010				
Totals	14	5	16	53	33	25	21	16	4	18	6	211					188					

Faunal Identification of Bone Artifacts: Mammals

Three hundred and one bone artifacts derived from excavations in the site of Pueblo Largo, Santa Fe., County, New Mexico were submitted by Dr. Bertha P. Dutton, Museum of New Mexico, to Southwest Archeological Center for study. These specimens have been examined for faunal identification and other related data. The results discussed here refer to 211 of these artifacts comprising two of the three main categories to which the material has been assigned: Mammals or birds, unknown; and Mammals. The third category, Birds, is reported elsewhere. (See Table 3 for frequency and percentage distribution of the specimens in the three categories).

Faunal List

The faunal list secured from identification of the mammalian material is detailed in Table 1, summarized taxonomically in Table 2, and quantitatively in Table 3. Distribution of artifact classes to mammal identification groupings by frequency and percentage is presented in Table 4. One other distribution might prove useful: that of taxonomic groupings by site proveniences in order to show dispersion of the identifications throughout the site, with special attention paid to unusual concentrations, if these should occur. This information, when compared with a similar distribution table of artifact classes by provenience, might yield useful observations. Provenience data is not presently available at Southwest Archeological Center to prepare these charts.

Notes on the Collection

The notes are organized around two main systems: (1) the 13 taxonomic groupings resulting from identification, and (2) the eleven artifact class designations into which the specimens were distributed when received at SWAC.

Mammals or birds, unknown 23 specimens

This class contains those specimens which cannot be referred to either Mammalia or Aves with any degree of confidence. None of these specimens are assignable to any other Class, however, and are held in this residual category. They make up about 8% of the total collection submitted.

This is a relatively high value for this group and suggests a particular category of artifacts is well-represented. Usually, unknown mammals or birds are limited to possible Lagomorphs (hares and rabbits), Rodentia (true rodents), as well as *Aves*. For in these Orders and this Class thinness of the osseus walls and general size ranges overlap markedly. In the absence of recognizable landmarks and forms, there is no way such fragments can be assigned on the basis of external macroscopic characteristics.

Inspection of the several artifact classes indicates this class of material is confined to three categories, and is concentrated in one of these.

Awls: Class E:	Heavy splinter type	2
Awls: Class E:	Light splinter type	18
Miscellaneous artifacts		3
	Total	23

It is clear that light, thin-walled, splinter awls make up the majority of the unknown mammal or bird specimens at Pueblo Largo. In comparative data from other Southwestern sites, the following similarities and differences are noted.

From the Mesa Verde:

Long House (incomplete)	1.8% (2 specimens in 108)
Mug House (incomplete)	0.7% (1 specimen in 134)

From Canyon de Chelly:

Tse-ta-a	12.3% (10 specimens in 81)

In the first two sites thin splinter awls are scarce, and the percentage of unknown mammals or birds is very low. In the last site unknown mammals or birds are a major component.

Mammals, unknown. 106 specimens

Of the mammal specimens, 56.3% – or more than one-half – could be carried no farther in identification. These specimens are concentrated mainly in Class D and E, heavy awl categories (see Table 4.) Frequency is highest in those artifact categories where finish and shaping have largely obliterated original surfaces and revised original element shapes.

At Mug House unknown mammals comprise 18.7% of the mammals; from Long House 17.9% were noted. The frequencies here were 133 and 106 respectively. At Tse-ta-a 37% (23 specimens in 62) were assigned to Mammals, unknown. Pueblo Largo has, therefore, the highest value for this class in the four sites.

Lagomorphs 11 specimens

Hares and rabbits account for 5.8% of the mammals. This is an unusually low percentage of specimens for this Order. Only one specimen could be assigned to species: *Lepus californicus*, the black-tailed jackrabbit. Rabbits (*Sylvilagus* sp.) comprise 1.5%. Jackrabbits in general, make up 3.7% of the mammals. All of these values are low for Southwest sites in the Basketmaker-Pueblo area.

Jackrabbits rank first with *Sylvilagus* following. The jackrabbit-cottontail ratio is 8:3, i.e., about three jacks to every rabbit. This is to say that, in artifacts, jackrabbit bones were more commonly used than rabbit, and for every rabbit bone utilized, three jackrabbit elements were selected. This predominance of *Lepus* was also true at Tse-ta-a, but the ratio was even higher: 4:1. At this time, the only observation on these animal frequencies in the Mesa Verde sites which can be made is that *Lepus* are practically absent from the collections. This is an expected situation, however, and concerns the distribution of jackrabbits in that area today and in prehistoric times.

It would be of some interest to know which species of rabbit and which subspecies of jackrabbit were present at Pueblo Largo. Perhaps the unworked bone collections will yield more information on these points. At any rate, jackrabbits reach their highest frequency in the artifact class: Light awls. They occur also in Class E awls, and in Bone tubes. The *Sylvilagus* distribution parallels this.

Carnivores 7 specimens

Two families of carnivores are represented in the Pueblo Llargo specimens. They are discussed un the appropriate term for the family in each case.

Canidae 3 specimens

Canid remains are confined to Class E awls (both light and heavy), and the single fox specimen occurs in the Large forms, various category. This family is weakly represented in the artifacts, comprising only 1.5% of the mammals. This is an expected value. The fox, which is *Urocyon cinereoargenteus* cf. *scotti* ssp., the grey fox, was an adult male animal. The element is the left ulna.

Another specimen is true *Canis* sp., and is either dog or coyote. It is the right tibia from a young adult animal of unknown sex. The tool fashioned from it is a heavy splinter awl of Class E. The third specimen, from Class E., light awls, is a left femur of an adult animal of unknown sex. Its identification could be carried no farther than family.

Felidae 4 specimens

The cats are represented by four specimens making up 2.1% of the mammals. All specimens are *Lynx rufus* cf. *baileyi* ssp., the bobcat. Highest frequency occurs in Large forms, various (2 specimens). There is one specimen each in Class C awls and Class E., light awls. One specimen, that in Class C., is from an immature individual. The rest are adult. Both fore and hind limb long bones were used.

Artiodactyls (*Ruminantia*) 64 specimens

The even-toes ruminants account for 34% of all mammal specimens. This Order has the highest frequency and percentage in the Mammalian collection.

Cervidae 28 specimens

Eleven specimens could be carried no farther in identification. They account for 5.8% of the mammals. These are, for the most part, antler artifacts. True deer (*Odocoileus* sp.) comprise 9 % (17 specimens). Identification of *Odocoileus hemionus*, the mule deer, was secured for two specimens.

The problem of greatest interest concerning deer at Pueblo Largo: whether *Odocoileus virginiansus*, the white-tail deer, was present in this region during the occupation of the site, is still unanswered. It is hoped the unworked bone samples will throw additional light on this problem. Both species occur very close to the Galisteo today. The answer may lie, however, in the extent of the hunting range used by the inhabitants of the pueblo in prehistoric times.

Antilocapra americana 6 specimens

3.1% of the mammal specimens have been referred to pronghorn. This is an expected species in this region. As yet there are too few comparative figures to judge frequency strength. Pronghorn has the highest frequency in Class C. awls, and is present also in Large forms, various.

Ovis canadensis 2 specimens

Bighorn sheep account for 1% of the mammals. Both specimens occur in the Class C awls. These animals are recorded by Hall and Kelson for regions adjacent to the Galisteo, such as the Santa Fe range. They are relatively rare at Pueblo Largo in artifactual specimens. Both examples occur in the Class C awls. Although most of the specimens assigned to the Artiodactyls are in the general size range and possess the thickness of bone found in deer, pronghorn, and bighorn sheep, some either specimens in the collection

indicate the presence of a larger animal in the ruminant group, such as elk (*Cervus* sp.) or bison (*Bison* sp.). However, the presence of either of these species could not be demonstrated in the artifact examples.

Seven of these specimens occurred in the rib artifacts; 4 in the Rib forms, pointed class; 3 are Rib forms, spatulate. All are from adult animals of unknown sex. One additional specimen is of considerable interest. It is a sub-rectangular die or counter made from the dental enamel of a very large herbivore. It is tentatively identified as the buccal surface of the upper molar (PM^3) of an adult animal. It is not deer, pronghorn, or bighorn sheep. It compares vary favorably with *Bison*, but is has not been compared with *Cervus* because of lack of adequate comparative material. This is a most unusual material for artifacts, and this example may be unique in the Southwest.

Summary of Identification Data

In numbers and percentages the artiodactyls rank first as a source of raw material for bone artifacts at Pueblo Largo. Of these, the deer family (Cervidae) is easily the most important. Both pronghorn and bighorn sheep are of lesser importance. Lagomorphs are the second ranking mammalian order but occur in much lower frequencies than th even- toed ruminants. One artifact category is made up of examples from this order alone (Light awls). Strength of this group is not quite as great as one would expect from other sites in the Southwest. In many sides Lagomorphs rank first in the mammals, and second only to turkey in number of examples.

In the Carnivores: Felids and Canids rank third and fourth respectively among the mammals. There is a wide gap between frequencies of these animals and the higher values for the other two orders. This bears out an earlier observation that these carnivores make up a weak but constant proportion of the bone artifact sample from Southwestern sites. It suggests a constant but minimal use category. However, with more than 50% of the mammalian remains unidentifiable to more precise levels, the frequency order for artifacts has less validity. Moreover, the high frequency of bone awls – particularly splinter awls, and a near absence of large worked forms, such as ulna scrapers – may be characteristic of the period and area of occupation at Pueblo Largo, this based on the assumption that recovered bone artifacts from this site are a good sample of types present in the site.

Etat Physique

Rodent activities.

Two specimens bear evidence of rodent-gnawing activities. One (25/231) is a “bone tube” made from the left femur of an immature jackrabbit. The tooth scars are most evident on the surface of the mid-section of the shaft and around a perforation on the anterior face of the shaft at about the same level. The second specimen (25/172) is an artifact made from an antler tine of some Cervid. Rodent incisor scars occur at both ends of the specimen.

Charring, calcination, and evidence of burning.

Eight specimens exhibit varying degrees of subjection to fire and intense heat. Two specimens show charring and vary in color from dark brown to black. One is a pointed rib form (25/115) from an unknown mammal; the other, in the Miscellaneous category (25/32), is a fragmentary olecranion process from the left ulna of a pronghorn.

The remaining six examples show the effect of intense calcination, and vary from white to ash gray in color. Specimen 24/247 is a Class C awl fashioned from the right tibia of a bighorn sheep. Example 25/112 is a Class D awl from an unknown animal. Specimen 25/145-2 is a Rib, spatulate form from a split segment of a rib from an unknown mammal. In the Miscellaneous category are three specimens; 25/248 was made from the rib of a large mammal; 25/111was produced from an unknown mammal or bird bone; and 25/246 was shaped from the long bone of an unknown mammal or bird. All of this group are very brittle specimens due to firing out of the organic content of the specimens.

Shaping and Working techniques.

In addition to obvious use of abrasion in the shaping and finish of the bone tools and other objects from Pueblo Largo – the presence of portions of longitudinal channels, produced by cutting and sawing, are evident on many of the awl forms and demonstrate the use of methods of preparation by which appendicular long bones – particularly Artiodactyl metapodials, are split lengthwise into useable, straight lengths which could then be fashioned into awls and other long slim forms. Several specimens bear examples of this channeling and splitting. It is a common bone-preparation technique in Anasazi sites of the Southwest.

General Summary

The mammal bone artifacts from Pueblo Largo may be characterized as a whole as having a high frequency of awl forms; few large forms of the ulna scraper type; and a general technical level showing few non-utilitarian aspects. Raw materials were drawn from a comparatively narrow range of animals. The size of the sample is considered adequate and representative.

Environmental context will be considered for the unworked bone collections rather than for the artifacts. The importance of the artifact list of identifications is to verify the presence of some faunal forms and indicate their relative strength and importance in the technology of the inhabitants of the site. A very dubious picture of environmental context and events can result from consideration of environmental needs of animals on a faunal list which is composed of identification secured from bone artifacts alone. It is, indeed, placing the cart before the horse.

Appendix E
The 14th Century Populations of the Galisteo Basin: Skeletal Remains and Burial Methods

Erik K. Reed

Unpublished typewritten manuscript, ca. 1956-1957, P-1721, (LOA 90MSS.062a) File #91EKR042.1956.
[This transcription of text from pages 7-21 is specifically regarding Pueblo Largo (LA 183) burials. Pages 102-3 are a general summary text. Penciled-in corrections by Reed have been incorporated into the text.]

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3. Burials from Pueblo Largo
A. Introduction

In six field seasons, the summers of 1951 through 1956, excavations were carried on by Dr. Bertha Dutton in the major Galisteo Basin ruin Pueblo Largo, LA 183, about 25 miles southeast of Santa Fe. Pueblo Largo is an important pre-Spanish site occupied from just before 1300 to somewhere around AD1500. Most of the work has been concentrated in the earlier portions of the pueblo, yielding primarily Galisteo Black-on-white and the early glazes (Glaze A Red, Yellow, and potentially Glaze B types (Reed, 1954) among the painted pottery, representing an occupation through all or most of the fourteenth century.

The human skeletal material recovered from trash deposits of the fourteenth century presumably dates from this period, although the inhumations were not accompanied by any offerings making positive determination possible. At the invitation of Miss Dutton, I studied the skeletal remains, and reviewed the burial excavation data, in the autumn of 1956.

Register of Specimens, LA 183

Burial # (Date)	Location	Age	Sex	Condition	Important bones missing	Comments
60/1 (1951-1)		child 3 ½-4		fairly good		
60/2 (1951-2)		adult 35-39	M	good	3 cervical vertebrae	"exceptionally broad-faced"
60/3 (1951-3)		adult 30-35	F	partly good/fair	Fairly complete	
60/4 and 60/5						Not collected
60/6 (1952-6)		child abt. 2 ½		fair		
60/7 (1952-7)		y. adult 20	F	fair	Mandible, right humerus	
60/8 (1952-8)		fetus 8-9 mos.		—		
60/9 (1952-9)		child abt. 11		poor		
60/10 (1952-10)		elderly	M	poor	Pelvis & lumbar v., occipital	
60/11 (1952-11)				—		Not collected
60/12 (1952-12)		adult 22-23	F	very poor	incomplete	
60/13 (1952-13)		baby <1 yr.		very poor	incomplete	
60/14 (1953-1)		adult abt. 30	F	fairly good	Face in fragments	
60/15 (1953-2)		elderly	M	mostly poor		
60/16 (1953-3)		adult in 30's	M	very poor		Discarded Mar. 30,1957
60/17 (1954)		child abt. 2 ½		—		
60/18 (1955)		adult 25-30	F (?)	fairly good	Legs, pelvis, 3 lumbars	
60/19 (1956-1)	Kiva XX*	y. adult 17	F	poor	Left ulna & radius	Discarded Mar. 30,1957
60/20 (1956-2)	Kiva XX*	20-25	M	poor	Fairly complete	Discarded Mar. 30,1957
60/21 (1956-3)	Kiva XX*	child 9 yrs		fair	Fairly complete	Discarded Mar. 30,1957
60/22 (1956-4)	Rm V-12^	adult 25-35	M	fairly good	Virtually complete	
60/23 (1956-5)	Rm V-12^	adult 35-40	F	fairly good	Virtually complete	
60/24 (1956-6)	Rm V-12^	adult 30-35?	F	very poor	All in fragments	

Age: Determined from pubic symphysis and long bones rather than cranial sutures: Singer, 1953; Stewart, 1954; Stewart & Trotter, 1954. Discarded on final re-examination; March 30, 1957; Reed notes.

* = Below the turkey pens – Bertha Dutton ^ = Under the floor – Girl Scout notebooks for Room V-12 excavation, 1956.

B. Cultural Features: Inhumation and Cranial Deformation

All burials are simple inhumation, semi- or fully flexed, as listed in Table 4; in trash (#19-21 in the fill of Kiva XX below the turkey pens; #22-24 in refuse underneath the floor of Room V-12), without offerings. The few small objects listed recorded as found with certain burials are evidently items in the general trash, probably pre-existing, rather than accompaniments buried with the skeleton.

C. Features of Crania and Mandibles

What the natural skull outline, as seen from above, would have been cannot safely be stated. Occipital protuberance is marked in two of the lamboidally deformed crania; parietal bosses are only moderately developed even with deformation. An ovoid shape is most probable.

The occipital torus is moderate or small, flattened but well-defined, in 9 individuals; fairly strongly developed in 60/15 (Plate II, c1), a male, entirely lacking in 60/19 and 60/23 (females). There is no specific inion projection except a small but definite one in 60/20. General nuchal muscularity is low in 9 cases, and only moderate in 60/2, 60/15, and 60/16 (males).

The pyramidal mastoid process is generally small; comparatively large in 60/2 and 60/15. The supramastoid crests are only slightly raised on 60/19 and 60/23 (females), moderately developed on 60/3, 12 and 18 (females); strong on males 60/2, 10, 15, 16, 20, 22, and also on females 60/7 and 60/14. Styloid processes are small in all observable cases except 60/2 and 60/15.

Sutural complexity is generally low, or only moderately denticulated; high in 60/14 (with [unreadable pencil] an os inca), 60/16 (but with no Wormian bones), and 60/23.

Frontal height and fullness are low to moderate. Supra-orbital ridges are very slight or lacking in 10 cases, somewhat developed in 60/15 and 60/16 and quite strong in 60/2. The glabellar area is prominent in the same three males, notably so in 60/2.

Nasion depression occurs only in 60/2 (marked) and 60/15 (slight). The root of the nose generally is wide or moderately wide; rather narrow in 60/2, 12, 14, 18, and 23. The profile of the nasalia varies from concave and low, flattish (60/7, 15, and 22) through concave but moderately prominent (60/2, 3, 10, and 18), to concave-convex and high arched (60/12, 14, 23). Very slight nasal overgrowth (cf. Birdsell, 1951, pp. 58-61, and p. 78 [unreadable pencil]) is noted only on 60/15 and 50/22. The nasal spine is generally small but prominent. Nasal sills are sharp in 3 males and 3 females, not sharp in 3 males and 4 females.

Moderate to slight alveolar prognathism is characteristic, somewhat more pronounced in 60/2, 15, 16, and 18 than in the rest. Malars are smallish, at least by Southwestern Indian standards, except in 60/2, 10, and 14, which were considered large in reviewing the collection. Lateral projection of the malars is normal; moderate to marked. Anterior projection, however, is pronounced only in five cases (60/3, 10, 12, 14, 18) and only quite moderate in eight; the malars are not abruptly angulated. The suborbital fossae are large, deeply excavated in several cases – 60/2, 12, 15, 16, 22; flat, or at least shallower, in the others. The infraorbital foramina, however, are small except in 60/3, 60/15, and 6/18.

Orbits vary in shape but in general tend to the rhomboid or squarish with rounded corners. Orbit slope varies from none (60/3, 60/16) or very slight (60/2, 7, 22) through slight (60/15, 18, 19) moderate (60/12, 12 [sic]) or marked (60/14, 23).

The chin is moderately prominent and of median type (formed by a single, central ossicle), in general; square and strong, of the bilateral type (formed by two mental ossicles, which I have previously believed not usual in Southwestern Indian material; though present in 3 out of 7 males from Alkali Ridge – Brues, 1946; and see also Reed, ms. #1) in male 60/2, also very wide and square but of median type in 60/16 and 60/20. Eversion of the gonial angles of the jaw is very slight or absent throughout.

D. Dentition

Tooth wear is, as usual in Southwestern Indian archeological material, severe to extreme. At least a little caries is noted on all adults, considerable on several, with large cavities in molars. Pre-mortem losses, however, are surprisingly few compared to many Southwestern Indian groups; none in 6 specimens of 11 in which conditions are definitely observable, probably none – few if any – in two others with portions of the jaws missing. The lower left second molar is gone in 60/3, a upper central incisor and right first molar in 60/15, three lower molars in 60/22. There are two cases of extensive tooth loss: 60/10, in which all teeth except five lowers are gone, with extensive resorption, and 60/14 with five lower molars and second left premolar gone, resorbed (upper jaw missing or fragmentary).

Incisors are shoveled in all observable cases (extreme tooth wear, as against merely severe, has brought the incisors down so far the blade shape may be undeterminable). Third molars are present in fully adult individuals, not yet erupted in 60/7, 12, 19 (females 17 to 20 years old), smaller than other molars (notably so in 60/2). Molar cusps are in the usual plus-four pattern. No extra cusps were observed. There are no instances of supernumerary teeth.

E. Post-cranial Skeleton: Build and Stature

Humeri are moderately to very muscular and twisted, but with only two cases, in 14 adult individuals, of septal aperture (perforation of the olecranon fossa) and in one of those the left humerus only (60/19; both in 60/12).

Femurs are stout and muscular, except that those of 60/12 (adult female) are slender. Pilastering is moderately strong, except on 60/7, 60/12, 60/20 (male), 60/22, and 60/23 – underdeveloped for Southwestern Indians, I would say. A third trochanter occurs in the case of 60/15, elderly male.

Tibias are large, thick, or moderately stout, in males 60/2, 60/10, 60/15, and female 60/7; rather slender in females 60/3, 60/12, 60/19, and 60/23, and male 60/16. Slight rotorversion of the tibial head and development of small but usually fairly well-defined squatting facets (not on 60/16, adult male) are characteristic.

Reconstructed statures are given in Table 7. These are fairly normal figures, statures close to the averages for Pueblo Indians, except that of 60/18, if indeed a female, is an exceptionally large one. The people were evidently of rather stocky build – very short and quite muscular; presumably mesomorphic.

F. Pathology (Other than Dental) and Anomalies

Considerable hypertrophic osteoarthritis is evident on a number of mature and older spines, frequently concentrated on thoracic vertebrae: 60/3, slight, on mid-thoracics only; 60/10, on cervicals and thoracics; 60/14, slight, on lumbars only; 60/16, severe, on cervicals and thoracics; 60/23, considerable on mid-thoracics and slight on lumbars; 60/24, severe on at least a few mid-thoracics, slight to moderate on lower thoracics and lumbars. In adult (youthful) male 60/20, exhibiting no arthritic exostoses on cervical or thoracic vertebrae, the sixth thoracic is compressed medially (pinched at the center along a fore-and-aft line; the second and third lumbars are collapsed and combined, although not fused – compressed and deformed, with cavities, fastened together with bony growths – and the fourth is of normal size and shape, without exostoses but with large cavities, while the first and fifth are normal. I suspect an extreme form of some disease; this doesn't look like a healed broken back.

Otherwise, the only definite pathology observed is the presence of small "button osteomata" (Hooton, 1930, p. 315) on the frontal of 60/15. There are, however, a couple of rare and interesting anomalies.

In 60/22, an unusual condition is present: the first cervical vertebra (the atlas) is fused to the occipital condyles. (Pl. VI, a,d) The result is not quite true, not horizontal, throwing the whole organization slightly off kilter, so that the left condyle of the mandible is perceptibly flattened in comparison with the normal right one.

Still more surprising is the condition manifested in 60/15; in each foot the fourth and fifth metatarsals are combined, their epiphyses diverging only slightly from the completely fused shafts. (Pl. VI, e)

G. Life Expectancy

Of the 20 individuals in the Pueblo Largo series (excluding 60/3, unborn), four died when less than 4 years old, and four more between 9 and 20 years of age. Eight succumbed between 20 and 35, and two between 35 and 45; two attained 50 years or more. This is a rather typical sort of range and distribution, in fact surprisingly normal in so small a sample, except for less infant mortality than usual. A larger and more representative amount of specimens would, however, very possibly include a higher percentage of infant and child burials. The concentration of those who survived the first several years in the 25-35 bracket, with an average life span of perhaps around 27 indicated, seems about right.

No statistics have been compile, so far as I know, on life expectancy of Pueblo Indians of the Southwest in pre-Spanish times, and the majority of archeological reports do not give exact and full information on the age at death of the individuals whose skeletons have been found. Infant mortality was extremely high; older children and adolescents, young adults, mature adults, and middle-aged individuals usually are about equally represented. The majority of skeletal collections from Southwestern sites, in any case, are not extensive enough series to be treated statistically or give reliable indications on life expectancy. (See further discussion in Parts 4- and 6-B of this monograph). [not included in this current publication]

H. Summary and Comparisons

The small collection of human skeletal material from Pueblo Largo is a typical Pueblo Indian series, with some distinctive Rio Grande attributes and a few special features. In the first place, burial by simple inhumation, in trash, flexed (on the side, on the back, or face down), with no consistent standard orientation, and without any funerary offerings or accompaniments, is apparently characteristic in the Upper Rio Grande area (cf. Stubbs and Stallings, 1953, p. 143). Face-down burials (flexed) are not uncommon in this area.

Another cultural trait, artificial cranial deformation, is of special interest here. At least two styles of cranial deformation occur in the Southwest, lambdoid (at a high oblique angle) and vertical occipital; and they have a definite historical significance (Stewart, 1937; Reed, 1949). Both are present in the Pueblo Largo series. Lambdoid flattening characterizes the LA 3333 crania, and predominates at nearby Paako (Rogers, 1954).

Turning now to the non-cultural physical anthropological features of the Pueblo Largo skeletons, there are few if any really significant metrical differences between this group, LA 3333, Paako, Pecos, and San Juan Anasazi material, all of which fall within the Southwest Plateau (Seltzer, 1944) or Ashiwid type (Neumann, 1952): small, naturally meso-to dolicho-cranial and relatively high-vaulted, meso-to leptoprosopic and mesene, meso-to hypsiconch, brachyuranic and mesorrhine.

The average of the male nasal index in the Pueblo Largo series is right on the boundary dividing the mesorrhine and platyrrhine categories; but it is constituted by one high leptorrhine individual, two mesorrhine with typical indices, and the quite exceptionally broad-noses 60/22 with a fairly high platyrrhine index. The male mean at Pecos (of 124 specimens), just within mesorrhine, is almost identical with the Pueblo Largo figure.

A curyprosopic mean for the total facial index at Pueblo Largo is produced by the extremely low index of the very short-faced 60/22 and the barely mesoprosopic index of the exceptionally broad-faced 60/2. Their upper facial indices, however, are curyene and mesene, respectively, yielding a low mesene average.

Male 60/2 in the Pueblo Largo series diverges from the normal in several traits: exceptionally broad cheek-bones; well-developed browridges, with marked glabellar prominence and nasion depression; square, strong bilateral chin. He might be considered a representative of the Ainoid or “pseudo-Australoid” element or variant of the Southwest Plateau or Ashiwid type. (See discussion of Ignacio Basketmaker material in Reed, 1956, pp. 398-399). Male 60/22 is particularly short-faced and broad-nosed but not otherwise peculiar.

Consistent distinctions between Rio Grande and San Juan in cranial non-metrical observations appear to be few; and these features of course are subject to possible errors of subjective judgment. Individual variations within series seem to be greater than differences between sites and areas. The skulls from Pueblo Largo appear to correspond generally with normal Ashiwid (Southwest Plateeau) standards in most features.

In the original version of the report on the Pueblo Largo collection, written in December 1956, I made the following premature statement:

"There is, however, at least one feature of the Pueblo Largo series, shared with LA3333 and other Upper Rio Grande material (Te-ewi, Paako, Pecos), which may be a local peculiarity. The suborbital or canine fosse – the region of the maxilla about and just below the suborbital or infraorbital foramen (which is not necessarily large in these cases) is frequently quite concave, deeply excavated, as in most Europeans, instead of produced to form a shallowly curving or even almost flat continuous surface with the malar as in Asiatic Mongoloids and many American Indians. I believe the latter condition to be more common (though far from universal, perhaps not even typical) in the San Juan, though I have not systematically checked the available material on this point. As one example on record, in the Alkali Ridge crania the suborbital fossa is listed as deep in only one of seven males, medium in one, small in two and absent in three (Brues 1946, p. 318). Turning to southwestern New Mexico for another comparison, at the Swarts ruin, suborbital fossae are deep in 3, medium on 9, and shallow in 5, absent in none of 17 crania; the suborbital fossa among the Mimbres skulls reveals a greater accent on a medium depth than among Pecos crania, where medium and deep fossae are equally common. (Howells, 1932, p. 141; and table p. 142). I am not at all sure that this has any real significance, but it is a line which may be worth following up."

In connection with just this point, I have referred to that manuscript in several other such reports, most of them still unpublished and probably available for correction, citing it as "Reed, ms." Or else "Reed, in pr." And in one published instance, unfortunately, as "Reed, 1955". Hence the belaboring of this item and quoting of my original paragraph. In the eight years since, I have gone over about 200 more skeletons from the Southwest (mostly from the northwestern one-fourth of New Mexico, some from southern Utah) and this does not seem to check out (cf. Reed, 1963, p. 321).

For the Pecos material, Dr. Hooton remarked: "The absence of well-marked suborbital fossae is an anthropoidal characteristic frequently observed in Mongoloid crania. Deep fossae are commonly found in Europeans. But the development is also affected by the age of the individual since, with the loss of teeth and the absorption of the alveolar processes, the maxillary sinus tends to be deflated, this increasing the depth of the suborbital fossae. . . There appears to be no clear differentiation of (morphological) types." (Hooton, 1930,p. 219); and "Suborbital fossae are oftener medium and deep than shallow and there are no marked sex differences. They seem to run a little deeper in the late periods. . ." (Hooton, 1930, p. 109).

Another trait which I had thought originally seemed to show differentiation between the San Juan and Upper Rio Grande areas, eversion of the gonial angles of the lower jaw, has not proved consistent either. (cf. Reed, 1963, p. 321)

[Note: Pueblo Largo section ends on p. 21 of manuscript]

Summary [pp. 102-3 of Reed's unpublished manuscript]

The people of the Galisteo Basin in the 13th and 14th centuries were Pueblo Indians of Ashiwid (Southwest Plateau) type, of study build and small stature, as is normal for Basketmaker-Pueblo. Largely conforming to Anasazi (and other pre-historic southwestern and historic Pueblo) norms of 5'- 4" or 5'-5" (162-165 cm.) for males and 4'-11" to 5'-1" (150-155 cm.) for females, they included the smallest adult Indian on record so far as I know: Burial 9 from LA 3333, around 4'- 6-1/2" (137.7 cm.).

Age distribution of skeletal material indicates a life expectancy at birth of only about 15 years – very high infant mortality, then moderate percentages of death in the 20s and 30s, only a few beyond about 45, none definitely over 55. This corresponds to the usual pattern in large Southwestern collections, notably that from Pecos.

Like other Pueblo groups, the people of the Galisteo Basin area evidently used a hard cradleboard to which the infant must have been so rigidly bound as to be unable to move its head for the first stage of its life. This produced, whether intentionally or incidentally, a conspicuous flattening of the back of the head. There are two distinct forms of this artificial cranial deformation in the Southwest, lambdoid and vertical occipital, both of which occur in the Galisteo Basin, and an intermediate category, in which the flattening is at an angle of about 75^{o} (or 15^{o} from the vertical). There appears to be a high incidence of lambdoid cranial deformation in the Upper Rio Grande area in early periods (i.e., between about AD 900 or so and 1300), and a trend to increasing preponderance of vertical occipital deformation in Pueblo IV.

Both types occur, however, from around or before AD 900 to Glaze A times in the 14th century – often both together in the same site, as at Pueblo Largo. All seven crania from LA 3333 are lambdoidally deformed; of the skulls from Las Madres, two are un-deformed and the rest show vertical occipital deformation, generally pronounced or extreme (11 definitely and three less certainly). The precise significance of this I cannot interpret satisfactorily. Increase of the vertical type of occipital deformation about or after 1300 can be ascribed to immigration from the western regions where it was characteristic. However, it also could possibly represent arrival of people from the general Mesa Verde area, where both types of cranial deformation occurred during Pueblo III. Or, finally, the Galisteo basin situation could simply be reflecting a general trend in the Rio Grande area, which may not have necessarily involved movement of large groups of people.

Appendix F

Table F-1. H.P. Mera Ceramic Surface Collection

Ceramic Type	count	weight g
Agua Fria Glaze-on-red	24	178
Biscuit A	4	67
Biscuit B	11	120
Chupadero Black-on-white	0	
Cibola Whiteware	0	
Cieneguilla Glaze Polychrome	2	15
Cieneguilla Glaze-on-yellow	22	161
Clapboard Corrugated	0	
Cordova Micaceous Ribbed	0	
Cundiyo Micaceous Smeared Indented	0	
Espinoso Glaze Polychrome	0	
Galisteo Black-on-white	27	244
Indented Corrugated	1	13
Indeterminate Biscuit Ware	0	
Indeterminate Plainware	0	
Indeterminate Black-on-white	3	133
Indeterminate Corrugated	0	
Indeterminate Glaze Polychrome	3	27
Indeterminate Glaze Ware	59	511
Largo Glaze Polychrome	2	36
Largo Glaze-on-yellow	11	97
Micaceous Tempered	2	23
Plain Red/Gray Ware	4	27
Rowe Black-on-white	1	10
San Clemente Glaze Polychrome	1	14
Santa Fe Black-on-white	0	
Sapawe Micaceous Ribbed	0	
Slipped Unpainted	4	30
Smeared Corrugated	6	62
St Johns Black-on-red	0	
St Johns Polychrome	1	2
Wiyo Black-on-white	11	86
Total Grams		1856
Totals sherds	199	

Table F-2. B. Dutton Ceramic Collection, no provenience

Ceramic Type	count	weight g
Agua Fria Glaze-on-red	4	34
Biscuit A	16	166
Biscuit B	1	8
Chupadero Black-on-white	0	
Cieneguilla Glaze Polychrome	11	619
Cieneguilla Glaze-on-yellow	18	183
Clapboard Corrugated	2	12
Cordova Micaceous Ribbed	0	
Cundiyo Micaceous Smeared Indented	0	
Espinoso Glaze Polychrome	1	4
Galisteo Black-on-white	8	60
Indented Corrugated	2	6
Indeterminate Glaze A	1	14
Indeterminate Black-on-white	5	54
Indeterminate Glaze Polychrome	8	51
Indeterminate Glaze Ware	45	441
Largo Glaze Polychrome	5	94
Largo Glaze-on-yellow	1	6
Los Lunas Smudged	1	11
Micaceous Tempered	0	
Plain Red/Gray Ware	4	9
Rowe Black-on-white	0	
San Clemente Glaze Polychrome	0	
Santa Fe Black-on-white	11	94
Sapawe Micaceous Ribbed	0	
Slipped Unpainted	8	106
Smeared Corrugated	8	123
St Johns Black-on-red		
St Johns Polychrome		
Wiyo Black-on-white	13	108
Total Grams		2203
Totals sherds	173	

Appendix G

Table G-1 All Tree Rings from Pueblo Largo. Data from Laboratory of Tree Ring Research

Provenience	Tree Ring Lab #	species	sample description	radius (mm)	inside date	outside date	cutting date	close to cutting date	remarks	other specimens # from same sample
Nelson IV, RM 1	271-02 a, b	pinon	charcoal frags	17.5mm	1290fp	1433r	1433r	0		271-3, 271-6, 271-7, 271-8, 271-11
Nelson IV, Rm 1	271-03	pinon	charcoal frag		1348fp	1433r	1433r	0		271-2, 271-6, 271-7, 271-8, 271-11
Nelson IV, Rm 1	271-06	pinon	charcoal frag	19mm	1310fp	1405vv	0	0	poor record	271-2, 271-3, 271-7, 271-8, 271-11
Nelson IV, Rm 1	271-07	pinon	charcoal frag	20mm	1327fp	1433r	1433r	0		271-2, 271-3, 271-6, 271-8, 271-11
Nelson IV, Rm 1	271-08	pinon	charcoal frag	30mm	1314fp	1433v	0	1433v		271-2, 271-3, 271-6, 271-7, 271-11
Nelson IV, Rm 1	271-09	pinon	charcoal frag	34mm	1305fp	1373vv	0	0	incomplete; fair record	
Nelson IV, Rm 1	271-10	pinon	charcoal ½ XS		1402np	1430r	1430r	0	incomplete	
Nelson IV, Rm 1	271-11	pinon	charcoal frag	17mm	1321fp	1392vv	0	0	poor record	271-2, 271-3, 271-4, 271-5, 271-6, 271-7, 271-8
Nelson IV, Rm 1	271-12	pinon	charcoal frag		1350fp	1430+r	0	0	compressed past 1405	
Nelson IV, Rm 1	271-13	pinon	charcoal frag		1300fp	1392vv	0	0	incomplete; erratic	
Nelson IV, Rm 1	271-14	pinon	charcoal frag		1393fp	1436vv	0	0	incomplete	
Nelson IV, Rm 1	271-15	pinon	charcoal frag		1387p	1430v	0	1430v	incomplete	
Nelson IV, Rm 1	271-16	pinon	charcoal frag		1390p	1430r	1430r	0	complete	
Nelson IV, Rm 1	271-17 a, b	pinon	charcoal frags		1243fp	1412r	1412r	0	incomplete; good specimen	
Nelson IV, Rm 1	271-18	pinon	charcoal frag		1359fp	1414v	0	1414v	incomplete (?)	
Nelson IV, Rm 1	271-20	pinon	charcoal frag		1387fp	1435r	1435r	0	complete	
Nelson IV, Rm 1	271-22	pinon	charcoal frag		1387p	1426r	1426r	0	complete; very erratic	
Nelson IV, Rm 1	271-23 a, b	pinon	charcoal frags		1332fp	1402vv	0	0	incomplete	
Nelson IV, Rm 1	271-24	pinon	charcoal frag		1358p	1404vv	0	0	incomplete	
Nelson IV, Rm 1	271-25	pinon	charcoal frag		1311fp	1353vv	0	0	incomplete	
Nelson IV, Rm 1	271-27	pinon	charcoal frag		1296fp	1360vv	0	0	incomplete, erratic	
Nelson IV, Rm 1	271-29	pinon	charcoal frag		1343p	1430+r	0	0	incomplete	
Nelson IV, Rm 1	271-30	pinon	charcoal frag		1388p	1430v	0	1430v	complete (?)	
Nelson IV, Rm 1	271-31	pinon	charcoal frag		1406fp	1436v	0	1436v	complete	
Nelson IV, Rm 1	271-32	pinon	charcoal frag		1390p	1431r	1431r	0	complete	
Nelson IV, Rm 1	271-33	pinon	charcoal frag		1348fp	1426+r	0	0	compresed outside	
Nelson IV, Rm 1	271-34	pinon	charcoal frag		1376np	1431r	1431r	0	incomplete	
Nelson IV, Rm 1	271-35	pinon	charcoal frag		1383np	1431+r	0	0		
Nelson IV, Rm 1	271-36	pinon	charcoal frag		1379fp	1418vv	0	0	incomplete	
Nelson IV, Rm 1	271-37	pinon	charcoal frag		1410fp	1436r	1436r	0	complete	
Nelson IV, Rm 1	271-38	pinon	charrred frag		1387np	1431r	1431r	0	complete	
Nelson IV, Rm 1	271-39	pinon	charcoal frag		1398np	1430r	1430r	0	complete	

Nelson IV, Rm 1	271-40	pinon	charcoal frag		1394np	1429+r	0	0	complete		
Nelson IV, Rm 1	271-41	pinon	charcoal frag		1402fp	1431+r	0	0	complete		
Nelson IV, Rm 1	271-42 a, b	ponderosa	charcoal frags		1162fp	1222vv	0	0	incomplete		
Nelson IV, Rm 1	271-47 a, b	ponderosa	charcoal frags		1388p	1414vv	0	0	incomplete		
Nelson IV, Rm 1	271-49 a, b	ponderosa	charcoal frag		1395p	1431v	0	1431v	incomplete		
Nelson IV, Rm 1	271-54	ponderosa	charcoal frag		1411fp	1431v	0	1431v	incomplete		
Nelson IV, N of Rm 1	493-01	pinon	charcoal frag	41.6mm	1301fp	1395vv	0	0	incomplete; good record		
Nelson IV, N of Rm 1	493-02 a, b, c	pinon	charcoal frags		1248p	1413++vv	0	0	incomplete; compressed past 1300, ring count past 1381	493-8, 493-18	
Nelson IV, N of Rm 1	493-03 a, b	pinon	charcoal frags		1361p	1412r	1412r	0	complete		
Nelson IV, N of Rm 1	493-04	pinon	charcoal frag		1393fp	1432r	1432r	0	incomplete		
Nelson IV, N of Rm 1	493-05	pinon	wd frag		1321 fp	1417vv	0	0	incomplete	493-13	
Nelson IV, N of Rm 1	493-06	pinon	charcoal frag	42.6mm	1141fp	1298vv	0	0	incomplete		
Nelson IV, N of Rm 1	493-07	pinon	charcoal frag		1299p	1387vv	0	0	incomplete		
Nelson IV, N of Rm 1	493-08	pinon	wd frag	51.2mm	1249np	1398vv	0	0	incomplete, ring count past 1381	493-2, 493-18	
Nelson IV, N of Rm 1	493-09 a, b	pinon	charcoal frags		1321fp	1426r	1426r	0	complete		
Nelson IV, N of Rm 1	493-10	pinon	charcoal frag		1385fp	1431+r	0	0	complete		
Nelson IV, N of Rm 1	493-11	pinon	charcoal frag		1121np	1257vv	0	0	incomplete, erratic but good record		
Nelson IV, N of Rm 1	493-12 a, b, c	ponderosa	charcoal frags		1366fp	1431++vv	0	0	compressed past 1415, ring count past 1415		
Nelson IV, N of Rm 1	493-13 a, b, c	ponderosa	charcoal frags	42.7mm	1269fp	1459vv	0	0	incomplete	493-5	
Nelson IV, N of Rm 1	493-14	pinon	charcoal ½ XS		1345p	1409+G	1409+G	0	incomplete; compressed past 1398		
Nelson IV, N of Rm 1	493-15	pinon	charcoal frag		1369np	1407r	1407r	0	incomplete		
Nelson IV, N of Rm 1	493-16 a, b, c	ponderosa	charcoal frags		1371fp	1426+v	0	1426+v	incomplete		
Nelson IV, N of Rm 1	493-17	pinon	charcoal frag		1255p	1314vv	0	0	complete		
Nelson IV, N of Rm 1	493-18	pinon	charcoal ¼ sect		1248p	1381vv	0	0	incomplete	493-2, 493-8	
Nelson IV, N of Rm 1	493-19	pinon	charcoal frag		1388np	1430r	1430r	0	incomplete, good record		
Nelson IV, N of Rm 1	493-20 a, b, c	pinon	charcoal frags		1352fp	1412r	1412r	0	incomplete, erratic,		
Nelson IV, N of Rm 1	493-21	pinon	charcoal frag		1385p	1438r	1438r	0	complete, compressed		
Nelson IV, N of Rm 1	493-22	pinon	charcoal frag		1360np	1409vv	0	0	incomplete, erratic		
Nelson IV, N of Rm 1	493-23	pinon	charcoal frag		1320fp	1384vv	0	0	incomplee, good record		
Nelson IV, N of Rm 1	493-24	pinon	charcoal ½ XS		1370p	1439+r	0	0	complete, good record but compressed near outside		
Nelson IV, N of Rm 1	493-25	pinon	charcoal frag		1141fp	1266vv	0	0	incomplete	493-6	
Nelson IV, N of Rm 1	493-26	pinon	charcoal frag		1305fp	1426r	1426r	0	incomplete, erratic, compressed near outside,		
Nelson IV, N of Rm 1	493-27 a, b, c	pinon	charcoal frags		1153fp	1318vv	0	0	incomplete, compressed, erratic,		
Nelson IV, N of Rm 1	493-28	pinon	charcoal frag		1368fp	1413vv	0	0	incomplete, short,		
Nelson IV, N of Rm 1	493-29	pinon	charcoal frag		1331p	1387vv	0	0	incomplete		

Nelson IV, N of Rm 1	493-30	pinon	charcoal frag		1355fp	1396vv	0	0	incomplete, fair record	
Nelson IV, N of Rm 1	493-31	pinon	charcoal frag		1255fp	1344vv	0	0	incomplete, good result,	
Nelson IV, N of Rm 1	493-32	pinon	charcoal frag		1199±p	1410vv	0	0	incomplete, erratic, difficult to follow inside 1253	
Nelson IV, N of Rm 1	493-33 a, b, c	pinon	charcoal frag		1304p	1411vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-34 a, b	pinon	charcoal frag		1343np	1412vv	0	0	incomplete	
Nelson IV, N of Rm 1	493-35	pinon	charcoal frag		1204fp	1386vv	0	0	incomplete, compressed outside	
Nelson IV, N of Rm 1	493-37	pinon	charcoal frag		1293fp	1347vv	0	0	incomplete	493-39
Nelson IV, N of Rm 1	493-38	pinon	charcoal frag		1251fp	1305vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-39	pinon	charcoal frag		1324fp	1421vv	0	0	incomplete	493-37
Nelson IV, N of Rm 1	493-40	pinon	charcoal ½ XS		1347p	1410++vv	0	0	incomplete, compressed outside, ring count past 1399	
Nelson IV, N of Rm 1	493-41	pinon	charcoal frag		1383p	1438vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-42	pinon	charcoal frag		1351p	1405vv	0	0	incomplete, fair record	
Nelson IV, N of Rm 1	493-43	pinon	charcoal frag		1391np	1428vv	0	0	incomplete, fair record	
Nelson IV, N of Rm 1	493-44	pinon	charcoal frag		1289fp	1354vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-47	pinon	charcoal frag		1251np	1392vv	0	0	incomplete, compressed but good record	
Nelson IV, N of Rm 1	493-48	pinon	charcoal frag		1351fp	1395vv	0	0	incomplete	
Nelson IV, N of Rm 1	493-51	pinon	charcoal frag		1370fp	1426r	1426r	0	incomplete, compressed,	
Nelson IV, N of Rm 1	493-52	pinon	charcoal frag		1365fp	1430vv	0	0	incomplete, good record,	
Nelson IV, N of Rm 1	493-53	pinon	charcoal frag		1358fp	1435+vv	0	0	incomplete	493-34
Nelson IV, N of Rm 1	493-54 a, b	pinon	charcoal frags		1123fp	1292vv	0	0	incomplete, cannot follow from 1206-1265, dates well outside 1265	
Nelson IV, N of Rm 1	493-56	pinon	charcoal frag		1344fp	1442++vv	0	0	incomplete, ring count past 1428	
Nelson IV, N of Rm 1	493-57	pinon	charcoal frag		1319fp	1421v	0	1421v	incomplete, compressed	
Nelson IV, N of Rm 1	493-58	pinon	charcoal frag		1359p	1430r	1430r	0	complete, good record	
Nelson IV, N of Rm 1	493-62 a, b	pinon	charcoal frag		1375p	1438r	1438r	0	complete, good record	
Nelson IV, N of Rm 1	493-66	pinon	charcoal frag		1374p	1434vv	0	0	incomplete	
Nelson IV, N of Rm 1	493-72	pinon	charcoal frag		1357fp	1422vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-73	pinon	charcoal frag		1299np	1427vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-74	pinon	charcoal frag		1373fp	1417vv	0	0	incomplete, erratic	
Nelson IV, N of Rm 1	493-75	pinon	charcoal frag		1295np	1354vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-76	pinon	charcoal frag		1322fp	1389vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-77	pinon	charcoal frag		1350p	1395vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-78	pinon	charcoal frag		1304fp	1356vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-79	pinon	charcoal frag		1337fp	1408vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-80	pinon	charcoal frag		1317fp	1412vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-81	pinon	charcoal frag		1351fp	1410vv	0	0	incomplete	

Nelson IV, N of Rm 1	493-82	pinon	charcoal frag		1317np	1402vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-83	pinon	charcoal frag		1353np	1417vv	0	0	incomplete	
Nelson IV, N of Rm 1	493-84	pinon	charcoal frag		1314np	1388vv	0	0	incomplete	
Nelson IV, N of Rm 1	493-85	pinon	charcoal frag		1318fp	1416vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-86	pinon	charcoal frag		1296p	1355vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-87	pinon	charcoal frag		1293p	1366vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-88	pinon	charcoal frag		1299p	1390vv	0	0	incomplete, good record	
Nelson IV, N of Rm 1	493-89	pinon	charcoal frag		1211fp	1393vv	0	0	incomplete, erratic	
Nelson IV, N of Rm 1	493-90	pinon	charcoal frag		1253fp	1383vv	0	0	incomplete, compressed outside, more rings may be present	
Nelson IV, N of Rm 1	2556 a, b, c	pinon	charcoal XSs		1210p	1295r	1295r	0	complete (?)	
BLA-183, V Rm 54-1	2746	pinon	rotten ½ XS	2" dia	1293np	1325vv	0	0	incomplete; good record	
BLA-183, V Rm 54-1	2752	pinon	rotten ½ XS	3" dia	1300p	1370v	0	1370v	complete; good record	
Room 1-3, Level 2	2939-2	pinon	charcoal frag		1240fp	1275vv	0	0	incomplete; good record	
Room 1-3, Level 1	2939-1 a, b	pinon	charcoal frags		1388fp	1421vv	0	0	incomplete; good record	
Room IV e-3	2952-1	ponderosa	charcoal frag		1373fp	1411vv	0	0	incomplete; short	
Room IV e-3	2953-1	pinon	charcoal frag		1184fp	1237vv	0	0	incomplete; good record	
Room IV e-3	2953-2	pinon	charcoal frag		1401fp	1435r	1435r	0	incomplete; fair record	
Room IV e-3	2953-3	pinon	charcoal frag		1328fp	1369vv	0	0	incomplete; short	
Room IV e-3	2954-1	pinon	charcoal frag		1333fp	1401vv	0	0	incomplete	may be same as 2954-2
Room IV e-3	2945-2	pinon	charcoal frag		1307p	1410vv	0	0	incomplete	may be same as 2954-1
Room IV e-3	2954-3	pinon	charcoal frag		1340fp	1435r	1435r	0	complete	
Room IV e-3	2954-4	pinon	charcoal frag		1395fp	1427vv	0	0	incomplete; good record	
Room IV e-3	2954-5 a, b, c	ponderosa	charcoal frags		1260fp	1318vv	0	0	incomplete; good record	
Room IV e-3	2955 d	pinon			1355	1422vv	0	0	incomplete	
Room IV e-3	2955-2	pinon	charcoal frag		1347p	1401vv	0	0	incomplete; erratic	
Room IV e-3	2955-3 a, b, c	pinon	charcoal frag		1333p	1425r	1425r	0	complete; erratic	2958-2
Room IV e-3	2956 c	pinon			1358	1412 vv	0	0	incomplete	
Room IV e-3	2956-1 a, b	ponderosa	charcoal frags		1356fp	1424+v	0	1424+v	complete; good record	
Room IV e-3	2956-2	pinon	charcoal frag		1348fp	1414vv	0	0	incomplete	
Room IV e-3	2957-1	pinon	charcoal frag		1373fp	1414v	0	1414v	incomplete; erratic	
Room IV e-3	2957-2	pinon	charcoal frag		1145fp	1205vv	0	0	incomplete; very good record	
Room IV e-3	2957-3 a, b	pinon	charcoal frag		1256fp	1373vv	0	0	incomplete; good record but compressed outside	
Room IV e-3	2957-4	pinon	charcoal frag		1353fp	1408vv	0	0	incomplete; good record	
Room IV e-3	2957-5	pinon	charcoal frag		1348fp	1385vv	0	0	incomplete	
Room IV e-3	2958-2	pinon	charcoal frag		1371fp	1425r	1425r	0	complete	2955-3

Room IV e-3	2959-1 a, b, c	pinon	charcoal frags		1294np	1398vv	0	0	incomplete; very good record	
Room IV e-3	2959-2	pinon	charcoal frag		1338fp	1422vv	0	0	incomplete; good record, somewhat compressed	
Room IV e-3	2960-1	pinon	charcoal frag		1310fp	1422v	0	1422v	incomplete	
Room IV e-3	2960-2	pinon	charcoal frag		1344fp	1422vv	0	0	incomplete, good record	
Room IV e-3	2961-2	pinon	charcoal frag		1371fp	1433+vv	0	0	incomplete; good record	
Room IV e-3	2961-3	pinon	charcoal frag		1389fp	1426vv	0	0	incomplete; short but good record	
Room IV e-3	2968-1	pinon	charcoal frag		1265fp	1217vv	0	0	incomplete	
Room IV f-2, Level 7	2947 a, b	ponderosa	charcoal frags		1297fp	1340v	0	1340v	incomplete; good record	
Room IV f-2, Level 8	2948-1	pinon	charcoal frag		1377fp	1407r	1407r	0	complete; good record	
Room IV f-2, Level 11	2950	pinon	charcoal frag		1305fp	1397++r	0	0	complete; ring count past 1374	
Room IV f-2, Level 13	2951-1	pinon	charcoal frag		1371fp	1412vv	0	0	incomplete; short	
Room IV f-2, Level 13	2951-2	pinon	charcoal frag		1253fp	1392vv	0	0	incomplete; compressed outside	
Room V-5	2556	pinon	rotten XS	43	1210p	1295c	1295c	0	complete	
Room V-5	2557	pinon	rotten XS	45	1202p	1299r	1299c	0	incomplete	
Room V-5	2558	pinon	rotten XS	69	1088p	1275++vv	0	0	estimate; past 1250 outside too rotten	
Room V-5	2560	pinon	rotten XS	23	1241p	1298vv	0	0	incomplete, good record	
Room V-5	2561	pinon	rotten XS	36	1230p	1299r	1299r	0	complete (?)	
Room V-5	2563	pinon	rotten XS	19	1255p	1299vv	0	0	incomplete	
Room V-5	2565	pinon	rotten XS	31	1232p	1299r	1299r	0	incomplete	
Room V-5	2968 b	pinon			1265	1315vv	0	0	incomplete	
Room V-5	2968-01	pinon	charcoal frag		1265fp	1317vv	0	0	incomplete	
Room V-5	2968-03	pinon	charcoal frag		1260np	1315+r	0	0	complete; compressed outside	
Room V-5	2968-04	pinon	charcoal frag		1255fp	1322+B	0	0	complete; compressed	
Room V-5	2968-06	pinon	charcoal frag		1223fp	1321vv	0	0	incomplete; good record	
Room V-5	2968-12	pinon	charcoal frag		1271fp	1322+B	0	0	complete	
Room V-5	2968-14	pinon	charcoal frag		1259fp	1325vv	0	0	incomplete; good record	
Room V-5	2968-15	pinon	charcoal frag		1237p	1313++B	0	0	complete; compressed; ring count past 1305	
Room V-5	2969-01	pinon	charcoal frag		1199fp	1269vv	0	0	incomplete	
Room V-5	2969-05	ponderosa	charcoal frag		1243fp	1283vv	0	0	incomplete; short	
Room V-5	2969-10	pinon	charcoal frag		1206fp	1257vv	0	0	incomplete; good record	
Room V-5	2969-11	pinon	charcoal frag		1295p	1325vv	0	0	incomplete; erratic	
Room V-5	2970-01	pinon	charcoal frag		1191fp	1265vv	0	0	incomplete; good record	
Room V-5	2970-02	pinon	charcoal frag		1225fp	1281vv	0	0	incomplete; very good record	
Room V-5	2970-05	pinon	charcoal frag		1237fp	1262vv	0	0	incomplete	
Room V-5	2970-10	pinon	charcoal frag		1171fp	1206vv	0	0	incomplete	

Room V-5	2970-11	pinon	charcoal frag		1203fp	1288vv	0	0	incomplete	
Room V-5	2970-15	pinon	charcoal frag		1302p	1336vv	0	0	incomplete; erratic	
Room V-5	2970-16	pinon	charcoal frag		1195fp	1270vv	0	0	incomplete; erratic	
Room V-5	2970-17	pinon	charcoal frag		1291np	1332vv	0	0	incomplete; good record	
Room V-5	2972-04	pinon	charcoal frag		1242np	1287+rB	0	0	complete; erratic; compressed outside	
Room V-5	2975 a, b	pinon	charcoal frags		1185fp	1266vv	0	0	incomplete	
Room V-5	2976-02	pinon	charcoal frag		1159fp	1187vv	0	0	incomplete	
Room V-5	2976-08	pinon	charcoal frag		1249fp	1299vv	0	0	incomplete	
Room V-5	2977-01	pinon	charcoal frag		1120fp	1234vv	0	0	incomplete; good record	
Room V-5	2977-02	pinon	charcoal frag		1346fp	1435v	0	1435v	incomplete; erratic	
Room V-5	2977-03	pinon	charcoal frag		1315p	1357vv	0	0	incomplete	
Room V-5	2977-07	pinon	charcoal branch		1255p	1302+B	0	0	complete; compressed outside, XS	
Room V-5	2977-13	pinon	charcoal frag		1096fp	1149vv	0	0	incomplete; good record	
Room V-8	2981-1 a, b, c	pinon	charcoal frags		1216±p	1295vv	0	0	incomplete; good record	
Room V-8	2981-2 a, b	pinon	charcoal frags		1226p	1300vv	0	0	incomplete; good record	
Room V-8	2981-4	pinon	charcoal frag		1228p	1284vv	0	0	incomplete; good record	
Room V-8	2982	pinon	charcoal frag		1262p	1291vv	0	0	incomplete	
Room V-10, Level 10	2984-1	pinon	charcoal frag		1262fp	1360vv	0	0	incomplete	
Room V-10, Level 10	2985 b	pinon	charcoal frag		1284±p	1366vv	0	0	incomplete	
Room V-10	2985-1	pinon	charcoal frag		1279±p	1366vv	0	0	incomplete; erratic; difficult to read near pith	
Room V-10	2987-1	pinon	charcoal frag		1268p	1328rB	1328rB	0	complete; erratic	
Room V-10	2987-2 a, b	pinon	charcoal frag		1291fp	1344++B	0	0	very compresed outside; poor ring count past 1327	
Room V-11	2996	pinon	charcoal frag		996fp	1069vv	0	0	incomplete; erratic	
Room V-11	2998	pinon	charcoal XS		1234±	1386vv	0	0	incomplete; erratic; ring count inside 1253	
Room V-11	2989-01	pinon	charcoal frag		1330fp	1427+v	0	1427+v	incomplete; compressed outside	
Room V-11	2989-3 a, b	pinon	charcoal frags		1358fp	1391vv	0	0	incomplete; short	
Room V-11 Level 1	2991 a-2	pinon			1299	1346vv	0	0	incomplete	
Room V-11 Level 1	2991 a-3	pinon			1308	1390++vv	0	0	incomplete	
Room V-11 Level 1	2991 a-4	pinon			1292	1365vv	0	0	incomplete	
Room V-11	2991-01	pinon	charcoal frag		994fp	1101+vv	0	0	incomplete	
Room V-11	2991-02	pinon	charcoal frag		1299np	1345vv	0	0	incomplete	
Room V-11	2991-03	pinon	charcoal frag		1308np	1400++vv	0	0	incomplete; ring count past 1378	
Room V-11	2991-04	pinon	charcoal frag		1290fp	1365vv	0	0	incomplete; good record	
Room V-11	2992-01	pinon	charcoal frag		1142fp	1197vv	0	0	incomplete; good record	
Room V-11	2992-02	pinon	charcoal frag		1367fp	1440vv	0	0	incomplete; short	

Room V-11	2992-03	pinon	charcoal frag		1286fp	1332vv	0	0	incomplete	
Room V-11	2992-05	pinon	charcoal frag		1187fp	1246vv	0	0	incomplete	
Room V-11	2995-1	pinon	charcoal frag		1255p	1298r	1298r	0	complete; good record	
Room V-11	2995-3	pinon	charcoal frag		1190±p	1372vv	0	0	incomplete; compressed throughout cannot follow inside 1295; pith estimate	
Room V-11	2997-1	pinon	charcoal frag		1268fp	1317vv	0	0	incomplete; slightly erratic	
Room V-11, Level 8	2999-3	pinon	charcoal frag		1313fp	1376+vv	0	0	incomplete; good record	
Room V-11, Level 8	2999-8	pinon	charcoal frag		1396fp	1421v	0	1421v	incomplete; short but good record	
Room V-11, Level 8	2999-9	pinon	charcoal frag		1223fp	1273vv	0	0	incomplete; good record	
Room V-11 Level 12	3011b	pinon			1151p	1209vv	0	0	incomplete	
Room V-11, Level 12	3011-1 a, b	pinon	charcoal frags		1149p	1229vv	0	0	incomplete	
Room V-11, Level 10	3017-2	pinon	charcoal frag		1275fp	1318vv	0	0	incomplete; good record	
Room V-11, Level 10	3017-3	pinon	charcoal frag		1241fp	1277vv	0	0	incomplete; short but good record	
Room V-11, Level 10	3017-6	pinon	charcoal frag		1361p	1430vv	0	0	incomplete; good record	
Room V-11, Level 10	3017-8	pinon	charcoal frag		1360fp	1410vv	0	0	incomplete	
Room V-12	2024	pinon	rotten XS		1205±p	1292+r	0	0	incomplete	
Room V-12	2602	pinon	wd XS	5" dia	1157p	1287r	1287r	0	complete	
Room V-12	2645	pinon	rotten XS	2" dia	1236p	1269r	1269r	0	incomplete, erratic	
Room V-12	2647	pinon	rotten XS		1241p	1268v	0	1268v	incomplete, short	
Room V-12	2723	pinon	rotten		1167p	1260++vv	0	0	incomplete	
Room V-12	2754	pinon	rotten frag	1.5" rad	1259fp	1346vv	0	0	incomplete; compressed outside	
Room V-12	2758 a, b	pinon	rotten	1.5" rad	1169p	1260+vv	0	0	compressed outside	
Room V-12	3021	pinon	rotten frag		1264p	1302v	0	1302v	incomplete	
Room V-12	3023-1 a, b	pinon	rotten wd XSs		1231np	1292+r	0	0	incomplete	
Room V-12	3027-1	pinon	rotten XS		1279p	1302v	0	1302v	incomplete	
Room V-12	3029	pinon	rotten frag		1245fp	1315vv	0	0	incomplete; good record	
Room V-12	3030 a, b	pinon	rotten frags		1173p	1256++vv	0	0	very rotten outside; estimate past 1251	
Room V-12	3033	pinon	rotten XS		1265np	1302v	0	1320v	incomplete; good record	
Room V-12	3035-4	pinon	rotten frag		1287±p	1327vv	0	0	incomplete; good record; difficiult to read inside 1292	
Room V-12	3037	pinon	rotten frag		1275np	1302v	0	1302v	incomplete; erratic	
Room V-12	3047	pinon	rotten XS		1289p	1358+v	0	1358+v	incomplete (?)	3048
Room V-12	3048	pinon	rotten XS		1289p	1358+v	0	1358+v	incomplete(?)	3047
Room V-12	3054-1	pinon	charcoal frag		1321fp	1372vv	0	0	incomplete; good record	
Room V-12	3056	ponderosa	charcoal frag		1355np	1396v	0	1396v	incomplete	
Room V-13	2630	pinon	rotten ½ XS	6" dia	1183p	1298v	0	1298v	incomplete (?)	2361
Room V-13	2631	pinon	rotten ½ XS	5.1" dia	1183p	1298v	0	1298v	incomplete (?)	2360

Room V-13	2695	pinon	rotten XS	5.5" dia	1184±	1244vv	0	0	incomplete, outside very rotten, more present but cannot read	
Room V-13	2721	pinon	rotten XS	2" dia	1229p	1299c	1299c	0	complete	
Room V-13	2723	pinon	rotten XS	1.5" dia	1210±p	1299c	1299c	0	complete	2725
Room V-13	2725	pinon	rotten XS	1.5" dia	1216±p	1299c	1299c	0	complete	2723
Room V-13	2727	pinon	rotten XS	1.5" dia	1264±p	1299c	1299c	0	complete; difficult to read near pith	
Room V-13	3060	pinon	rotten XS		1200±p	1299+r	0	0	incomplete	
Room V-13	3061	pinon	rotten XS		1245p	1299r	1299r	0	complete; good record	3062
Room V-13	3062	pinon	rotten XS		1245p	1299r	1299r	0	complete	3061
Room V-13	3068	pinon	rotten frag		1233p	1298+r	0	0	incomplete; good record	
Room V-13	3069	pinon	rotten XS		1259p	1300v	0	1300v	incomplete (?); fair record	
Room V-13	3073	pinon	wd XS		1238p	1284vv	0	0	incomplete	
Room V-13	3087	pinon	rotten XS		1270p	1299r	1299r	0	incomplete	
Room V-13	3059 a, b	ponderosa	wd ½ XSs		1173±p	1242vv	0	0	incomplete	
Room V-13	3077-2	pinon	charcoal frag		1377fp	1420vv	0	0	incomplete; short but good record	
Room V-13	3077-4	pinon	charcoal frag		1292fp	1332vv	0	0	incomplete	
Room V-13	3078-1	pinon	charcoal frag		1281fp	1344vv	0	0	incomplete	
Room V-13	3078-2	pinon	charcoal frag		1229fp	1321vv	0	0	incomplete; very good record	
Room V-13	3079-4 a, b	pinon	charcoal frags		1293p	1324fB	1324fB	0	complete; good record	
Room V-13	3080-1	pinon	charcoal frag		1249p	1318vv	0	0	incomplete; good record	
Room V-13	3082-1	pinon	charcoal frag		1257np	1297r	1297r	0	complete; good record	
Room V-13	3084 a, b	pinon	charcoal frag		1197±p	1310++vv	0	0	incomplete; ring count inside 1228 and outside 1293	
Room V-13	3085-1	pinon	charcoal frag		1270p	1309vv	0	0	incomplete	
Room V-13	3085-2	pinon	charcoal frag		1139np	1185vv	0	0	incomplete; good record	
Room V-13	3085-4	pinon	charcoal frag		1249p	1298++B	0	0	complete; ring count past 1283	
Room V-13	3085-6	pinon	charcoal frag		1291fp	1330vv	0	0	incomplete; short	
Room V-13	3085-7 a, b	pinon	charcoal frags		1287np	1326vv	0	0	incomplete	
Room V-13	3086-1	pinon	charcoal frag		1311np	1354vv	0	0	incomplete	
Room V-13	3086-2	pinon	charcoal frag		1171fp	1308vv	0	0	incomplete	
Room V-13	3086-6	pinon	charcoal XS		1268p	1321vv	0	0	incomplete	
Plaza V-13	3086-7	pinon	charcoal frag		1267p	1298vv	0	0	incomplete	
Plaza V-13	3086-8	pinon	charcoal frag		1241p	1297+vv	0	0	incomplete	
Room V-14	3090-2a+e	pinon	rotten frags		1052np	1166+vv	0	0	incomplete; good record	
Room V-14	3104-3	pinon	charcoal frag		1239fp	1332vv	0	0	incomplete; compressed	
Room V-15	3106	pinon	charcoal frag		1249fp	1319vv	0	0	incomplete; outside compressed, rings present cannot follow	
Room V-15	3107-3	pinon	charcoal frag		1314fp	1378vv	0	0	incomplete	

Room V-15	3107-4	pinon	charcoal frag		1391fp	1430vv	0	0	incomplete	
Room V-15	3108-1	pinon	charcoal frag		1321fp	1377vv	0	0	incomplete	
Room V-15	3110-1	pinon	charcoal frag		1368fp	1426+B	0	0	incomplete; erratic	
Room V-16	3117-1	ponderosa	charcoal frag		1275fp	1293vv	0	0	incomplete; short but good record	
Room V-16	3121	pinon	charcoal frag		1309fp	1348vv	0	0	incomplete, fair record	
Room V-16	3122-1	pinon	charcoal frag		1144fp	1199vv	0	0	incomplete	
Room V-16	3122-3	pinon	charcoal frag		1218fp	1392+vv	0	0	incomplete; compressed; ring count past 1374; difficult to follow	
Room V-16	3122-4	pinon	charcoal frag		1395np	1423+v	0	1423+v	incomplete; short but good record	
Room V-17	2658	pinon	rotten frag	1.5" dia	1186p	1228vv	0	0	incomplete , fair record	
Room V-17	2683 a, b	pinon	charcoal rotten ½ X	5" dia	1113p	1387++v	0	0	incomplete	
Room V-17	3129	pinon	rotten frag		1204np	1260vv	0	0	incomplete; good record	
Room V-17	3125-2	pinon	charcoal frag		1327fp	1391+vv	0	0	incomplete	
Room V-17	3128-1	pinon	charcoal frag		1357p	1418vv	0	0	incomplete; good record	
Room V-17	3128-2	pinon	charcoal frag		1292p	1382+B	0	0	complete	
Room V-17	3128-6	pinon	charcoal frag		1336np	1379vv	0	0	incomplete; good record	
Room V-18	2633	pinon	wd XS	5.5"	1099p	1296+v	0	1296+v	complete, very erratic	
Room V-18	3136-1 a, b	pinon	charcoal fragg		1244fp	1307vv	0	0	incomplete	
Room V-18	3137-1	pinon	charcoal frag		1322np	1368B	1368B	0	complete	
Room V-18	2638	pinon	charcoal XS	1.5" dia	1200p	1297+rB	0	0	complete, compressed outside	
Room V-20	2628	pinon	rotten XS	4" dia	1207p	1287vv	0	0	incomplete, erratic	
Room V-20	3147	pinon	charcoal frag		1133fp	1209vv	0	0	incomplete; good record	
Room V-20	3148-1	pinon	charcoal frag		1301p	1351+vv	0	0	incomplete	
Room V-20	3149-1	pinon	charcoal frag		1131fp	1186vv	0	0	incomplete; good record	
Plaza V-20	2612	pinon	rotten XS	4" dia	1179p	1267c	1267c	0	complete	
Plaza V-20	2611	pinon	rotten XS	4.5" dia	1162p	1270vv	0	0	incomplete, very rotten outside	
Plaza V-20	2680	pinon	rotten XS	4" dia	1096p	1272++vv	0	0	estimate only outside 1240	
Plaza V-20	2603	pinon	wd frag	2.5" rad	1190p	1287vv	0	0	incomplete	
Plaza V-20	2608	pinon	rotten XS	4" dia	1213p	1292vv	0	0	incomplete	
Plaza V-20	2714	pinon	rotten XS	3.5" dia	1224p	1293v	0	1293v	incomplete	
Plaza V-20 (?)	2595	pinon	rotten XS	4" dia	1177p	1270vv	0	0	incomplete	
Room V-21	2596	ponderosa	rotten XS	5" dia	1226p	1268v	0	1268v	incomplete, fair record	
Room V-21	2598	pinon	rotten XS	4.5" dia	1174p	1265v	0	1265v	incomplete, outside difficult to read	
Room V-21	2599	pinon	rotten XS	2" dia	1172p	1267r	1267r	0	complete, good record	
Room V-21	2601	pinon	rotten XS	3.5" dia	1203p	1270c	1270c	0	incomplete	
Room V-21	2604	pinon	rotten XS	3" dia	1142p	1267c	1267c	0	complete (?), very rotten but good record	

Room V-21	2605	pinon	rotten XS	2" dia	1225p	1267v	0	1267v	incomplete, fair record	
Room V-21	2607	pinon	rotten XS	3.5" dia	1170p	1263+++vv	0	0	incomplete, outside very rotted can follow to 1221; estimate outside 1221	
Room V-21	2610	pinon	rotten XS	3.5" dia	1201p	1292v	0	1292v	incomplete	
Room V-21	2612	pinon		4" dia	1170p	1266v	0	1266v		
Room V-21	2613	pinon	rotten XS	4.5" dia	1198np	1325r	1325r	0	incomplete (?), very rotten but good record	
Room V-21	2616	pinon	rotten XS	2.5" dia	1265p	1325v	0	1325v	incomplete, fair record	
Room V-21	2618	pinon	rotten XS	2.5" dia	1211p	1292r	1292r	0	complete	
Room V-21	2620	pinon	rotten frag	2.5" dia	1213±p	1267v	0	1267v	incomplete, good record but difficult to read near pith	
Room V-21	2626	pinon	rotten XS	1" dia	1265p	1325v	0	1325v	incomplete (?)	
Room V-21	2650	pinon	rotten XS	2" dia	1136p	1243v	0	1243v	incomplete, good record	2651
Room V-21	2651	pinon	rotten XS	2.5" dia	1136p	1243v	0	1243v	incomplete, good record	2650
Room V-21	2668	pinon	rotten XS	6" dia	1221p	1325r	1325r	0	complete, good record	
Room V-21	2677	pinon	rotten XS	5" dia	1192p	1267vv	0	0	incomplete	
Room V-21	2678	pinon	rotten XS	2" dia	1194p	1295+++vv	0	0		
Room V-21	2681	pinon	rotten frag	2" dia	1137p	1259+vv	0	0	incomplete, compressed past 1215	
Room V-21	2682	pinon	rotten frag	3" dia	1173p	1250+++vv	0	0	incomplete, estimate only past 1228	
Room V-21	2685	pinon	rotten XS	3" dia	1135±p	1266vv	0	0	incomplete	
Room V-21	2689	pinon	rotten XS	2" dia	1134p	1262vv	0	0	incomplete	
Room V-21	2691	pinon	rotten XS	2" dia	1210p	1280+vv	0	0	incomplete, erratic	
Room V-21	2693	pinon	rotten frag	2" dia	1177p	1243vv	0	0	incomplete (?), compressed outside	
Room V-21	2694	pinon	rotten ½ XS	4" dia	1095p	1267r	1267r	0	complete, erratic but good record	2707, 2708
Room V-21	2696	pinon	rotten XS	4" dia	1180p	1292+v	0	1292+v	incomplete	
Room V-21	2697	pinon	rotten frag	1.5" dia	1196p	1245v	0	1245v	incomplete, fair record	
Room V-21	2698	pinon	rotten ½ XS		1288p	1325r	1325r	0	complete, somewhat erratic	
Room V-21	2700	pinon	rotten XS	2" dia	1171p	1267v	0	1267v	incomplete, good record	
Room V-21	2701	pinon	rotten XS	1.5" dia	1287p	1321c	1321c	0	complete (?), short but good record	
Room V-21	2703	pinon	rotten XS	3.5" dia	1198p	1283vv	0	0	incomplete, compressed outside	
Room V-21	2704	pinon	rotten XS	2" dia	1192p	1267vv	0	0	incomplete	
Room V-21	2707 a, b	pinon	rotten XSs	2" rad	1095p	1267v	0	1267v	incomplete	2694, 2708
Room V-21	2708	pinon	rotten XS	3.5" dia	1122np	1267r	1267r	0	complete	2694, 2707
Room V-21	2709	pinon	rotten XS	1.5" dia	1186p	1267v	0	1267v	complete, good record	
Room V-21	2710	pinon	rotten XS	2.5" dia	1129np	1267v	0	1267v	complete; erratic; several absent	
Room V-21	2711 a, b	pinon	rotten frags	2.5" rad	946±p	1232++vv	0	0	compressed outside; ring count outside 1213 and inside 982	
Room V-24	3153-1	pinon	charcoal frag		1393fp	1426r	1426r	0	incomplete; good record	
Room V-24	3153-2	pinon	charcoal frag		1320p	1406++vv	0	0	good record but poor surface outside 1400, estimate only past 1400	

V-"Tower"	3156 d	pinon			1159	1255vv	0	0	incomplete	
V-"Tower"	3156-1	pinon	charcoal frag		1159fp	1238vv	0	0	incomplete; very good record	
V-"Tower"	3156-2	pinon	charcoal frag		1159fp	1259vv	0	0	incomplete	may be same as 3156-1
V-"Tower"	3156-4	pinon	charcoal frag		1269fp	1333vv	0	0	incomplete; erratic	
V-"Tower"	3159 a-1	pinon			1249	1287vv	0	0	incomplete	
V-"Tower"	3159-1	pinon	charcoal frag		1249np	1287vv	0	0	incomplete	
V-"Tower"	3159-2	pinon	charcoal frag		1229p	1289vv	0	0	incomplete; good record	
V-"Tower"	3159-4	pinon	charcoal frag		1247p	1291vv	0	0	incomplete; somewhat erratic	
V-"Tower"	3159-9	pinon	charcoal frag		1229np	1288++vv	0	0	incomplete; good record	
V-"Tower"	3160-1	pinon	charcoal frag		1144np	1200vv	0	0	incomplete	
V-"Tower"	3160-2	pinon	charcoal frag		1199fp	1244vv	0	0	incomplete	
V-"Tower"	3160-3	pinon	charcoal frag		1230fp	1256vv	0	0	incomplete	
W Rm V-5 Explor trench	3169	pinon	charcoal frag		1204p	1257vv	0	0	incomplete	
W Rm V-5 Explor trench	3167	pinon	charcoal frag		1244np	1287vv	0	0	incomplete	
Plaza V Area XY	3192-1 a-d	pinon	charcoal frags		1291fp	1371vv	0	0	incomplete; good record	
Plaza V Area YY	3194-1	pinon	charcoal frag		1131fp	1202vv	0	0	incomplete; good record	
Plaza V Area YY	3194-2	pinon	charcoal frag		1234fp	1272vv	0	0	incomplete; short	
Plaza V E Room V-5	3174-4	pinon	charcoal frag		1250fp	1298vv	0	0	incomplete	
Plaza V E Room V-5	3175-2	pinon	charcoal frag		1163fp	1199vv	0	0	incomplete; good record	
Kiva A	3201-1	pinon	charcoal frag		1395fp	1431r	1431r	0	incomplete; good record	
Kiva A	3201-2 a, b, c	pinon	charcoal frags		1307fp	1431r	1431r	0	incomplete	3202
Kiva A	3202	pinon	charcoal frag		1315fp	1431r	1431r	0	incomplete	3201-2
Kiva A	3203-1	pinon	charcoal frag		1223fp	1310vv	0	0	incomplete	
Kiva A	3213-1	pinon	charcoal frag		1250np	1284vv	0	0	incomplete	
Kiva A	3214-1 a, b	pinon	charcoal frags		1301np	1392+vv	0	0	incomplete; good record	
Kiva A	3214-3	pinon	charcoal frag		1404fp	1446vv	0	0	incomplete; good record	
Kiva A	3217-2	ponderosa	charcoal frag		1266fp	1296vv	0	0	incomplete; good record	
Kiva A	3217-4	pinon	charcoal frag		1208fp	1260vv	0	0	incomplete; good record	
Kiva XX	2627 a, b, c	pinon	rotten XSs	7" dia	1061p	1298vv	0	0	incomplete	
Kiva XX	2648	pinon	charcoal rotten XS	1.5" dia	1185p	1230v	0	1230v	incomplete, short, erratic	
Kiva XX	2664 a, b	pinon	rotten XSs	5" dia	1083p	1242vv	0	0	incomplete	
Kiva XX	2669	pinon	rotten frag	4" dia	1197±p	1292+v	0	1292+v	incomplete (?), difficult to read near pith	
Kiva XX	2702	pinon	rotten frag	3" + rad	1113fp	1219vv	0	0	incomplete	
Kiva XX	3177	pinon			1121	1236vv	0	0	incomplete	
Kiva XX	3177 a, b	pinon	rotten frags		1102np	1237vv	0	0	incomplete	3178, 3183, 3184

All Tree Rings from Pueblo Largo, continued

Kiva XX	3178	pinon	rotten frag		1102np	1237vv	0	0	incomplete	3177, 3183, 3184
Kiva XX	3188	pinon	charcoal frag		1255fp	1309vv	0	0	incomplete	may be same as 3186-3
Kiva XX Level 4	3180-1	pinon	charcoal frag		1251fp	1339vv	0	0	incomplete	
Kiva XX	3181-2 a, b	pinon	charcoal frags		1229fp	1268vv	0	0	incomplete	
Kiva XX	3181-3	pinon	charcoal frag		1214fp	1293vv	0	0	incomplete; very good record	
Kiva XX	3183 a, b, c	pinon	charcoal frags		1102np	1236vv	0	0	incomplete	3177, 3178, 3184
Kiva XX	3184	pinon	charcoal frag		1125fp	1183vv	0	0	incomplete	3177, 3178, 3183
Kiva XX	3185-3	pinon	charcoal frag		946±p	1129vv	0	0	incomplete; good record; ring count inside 1004	
Kiva XX	3186-1	pinon	charcoal frag		1026fp	1114vv	0	0	incomplete; good record	
Kiva XX	3186-2 a, b,	pinon	charcoal frags		1229np	1305vv	0	0	incomplete; good record	
Kiva XX	3186-3	pinon	charcoal frag		1257fp	1302vv	0	0	incomplete; good record	
Kiva XX	3187-1	pinon	charcoal frag		1285fp	1332vv	0	0	incomplete	
Kiva XX	3190-1	pinon	charcoal frag		1284np	1354vv	0	0	incomplete; good record	
Refuse B-2	3222-1 a, b	pinon	charcoal frags		1270np	1330+vv	0	0	incomplete; compressed outside	
Refuse B-2	3222-2	pinon	charcoal frag		1288fp	1331vv	0	0	incomplete	
Refuse B	3223-1	pinon	charcoal frag		1230fp	1269vv	0	0	incomplete; good record	
Refuse B	3223-3	pinon	charcoal frag		1271fp	1366vv	0	0	incomplete	
Refuse B	3224	pinon	charcoal frag		1139np	1211vv	0	0	incomplete; erratic, compressed near pith	
Refuse B	3228	pinon	charcoal frag		1271p	1366vv	0	0	incomplete; very good record	
Cap B	2735	pinon	rotten XS		1174±p	1268vv	0	0	incomplete; very rotten, difficult to follow	
No Provenience	2557	pinon	rotten XS		1202p	1299r	1299r	0	incomplete	
No Provenience	2560	pinon	rotten XS		1241p	1298vv	0	0	incomplete	
No Provenience	2561	pinon	rotten XS		1230p	1299r	1299r	0	complete (?)	
No Provenience	2563	pinon	rotten XS		1255p	1299v	0	1299v	incomplete (?)	
No Provenience	2565	pinon	rotten XS		1232p	1299r	1299r	0	incomplete	
No Provenience	2717	pinon	rotten XS	1" dia	1196p	1267v	0	1267v	incomplete (?)	
No Provenience	2558 a, b, c	pinon	rotten XSs		1088p	1275++vv	0	0	incomplete	

Appendix H

Table H-1. List of Partial Vessels in the MIAC collection.

Accession # Description

25311/11 – partial Galisteo Black-on-white pot; Room V-16

25323/11 – partial pot; Room I-3, level 3

30099/11 – Espinosa G/P; Room I-3, level 3

25340/11 – Estacada (?) Glaze partial pot; unknown provenience

32011/11 – Kiva XX

32024/11 – Pinnawa Jar (?); Room V-5; levels 9 & 10

32014/11 – Western Poge (?) Black-on-white bowl; Room V-5, level 6. reconstructed by Frank Harlow 2-22-61.

32026/11 – Glaze A yellow bowl, Pinnawa Polychrome; Room V-11, level 13. reconstructed by Frank Harlow 3-22-61.

32023/11 – Galisteo B/w bowl; Room V-11, level 14; reconstructed by Frank Harlow 3-27-61.

25015/11 – Glaze A Red Jar; Room V-7; sherds 1-9, level 1; reconstructed by Frank Harlow 9-26-61

25259/11 – Type Vessel for Las Madres Black-on-white; V-Tower; 7 pieces glued together and 11 not glued. Authors identified these as Galisteo Black-on-white

32009/11 – San Clemente Glaze A Polychrome (Pinnawa Poly) water jar; Room V-4; sherds 894-932; reconstructed by Frank Harlow 3-4-61

32017/11 – San Clemente Glaze A bowl; Room V-19; sherds 759-782; reconstructed by Frank Harlow 3-22-61.

32018/11 – Las Madres B/w bowl; Room V-13, sherds 466-469 and 639-640 reconstructed by Frank Harlow 3-22-61

32019/11 – Glaze A Yellow bowl; Room V-11, level 13, reconstructed by Frank Harlow 3-22-61.

32020/11 – Glaze A yellow bowl; Refuse B-1-2a and 1-e; 8 sherds; reconstructed by Frank Harlow 9-26-61.

32025/11 – Biscuit A Bowl; Room V-10, level 4; reconstructed by Frank Harlow 3-22-61.

32006/11 – Glaze C Red polychrome; Room I-3; sherds 857-885. reconstructed by Frank Harlow 3-4-61.

25300/11 – Galisteo Black-on-white sherd; Room V-5.

32022/11 – Glaze A Yellow bowl; room V-5, level 9?; sherds 678-684. reconstructed by Frank Harlow 9-26-61.

32013/11 – San Clemente (Pinnawa) Polychrome water jar. reconstructed by Frank Harlow 9-26-61.

32007/11 – Smeared Corrugated jar; Room I-3, level 3. reconstructed by Frank Harlow 9-26-61

32006/11 – Glaze C Red; Room I-3; sherds 857-885. reconstructed by Frank Harlow 3-22-61.

32028/11 – untyped dipper handle or miniature pot; Refuse B-1-8, level E.

32004/11 – untyped miniature pot; refuse B-1-1-b; level 5

Note: Many partial vessels were collected separately and given tentative ceramic collection numbers for accession into the Museum of Indian Arts and Culture ceramic collection, but were never accepted for lack of enough pieces to be meaningfully re-assembled. This included several partial vessels which had the notation that they had been reconstructed by Frank Harlow. The sherds from these partial vessels had been returned to the sherd collections and were analyzed by the authors and are included in the total sherd counts in this report.